Assessment mothers knowledge and practices about their children Scalds Burn

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Abstract

Background: 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 care for children with scalds burn at home. **Design:** Quasi 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 child with scalds burn were chosen according to inclusion criteria.**Data Collection Tools:** Two tools were used, **First tool:**children scalds Interviewing questionnaire for children mothers was used which included five parts: Demographic characteristics for childrens and their mothers. History of burn. Mother's knowledge regarding scaldes burn. Mothers practices regarding scalds burn**. Second tool:** Taylor scale to assess anxiety level. **Conclusion:** There was a highly statistical significant between mothers practices pre and post program implementation at ($p< 0.001$). **Recommendation:** Increase the care giver knowledge& practicesabout scalds burn accidents prevention and how to provide first aid for children from scalds burn 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

Key words: care for children, scalds burn, at home

Introduction

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, there are several factors that contribute the incidence and severity of burn injury in children **(Fabio et al., 2019).**

There are three primary types of burns, first, second and third degree. Each degree is based on the severity of damage to the skin, with first degree being the most minor and third degree being the most severe. There is also technically a fourth-degree burn. In this type, the damage of third-degree burns extends beyond the skin into tendons and bones **(Rachel Warby et al., 2019).**

Around world, nearly 75% of all scalding burns are children. Toddlers and children are more often burned by a scalding or flames. Most children ages 4 and under who are hospitalized for burn related injuries suffer from scald burn (65%) or contact burns (20%) **(Rangaraju et al., 2018).**

Community health nurse should be given sufficient practical and theoretical training to enable them to provide opportunistic advice, encourage cessation. Nurses are in a position to record this fact and to offer brief advice. A simple piece of advice from a health professional can be a big trigger for a quit attempt. At the community level, parents and health-care providers are trained on how to conduct a situational assessment. Situational assessments enable health-care providers to identify (a) a community's risk and protective conditions for healthy eating and physical activity in relation to the social determinants of health, and (b) potential barriers and facilitators to the implementation of primary-prevention initiatives **(Clifton, 2019).**

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 or3days 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 cause more deaths and hospitalizations than burns from any other hot liquids **(Rachel Warby1 et al., 2019).**

Scalds burn in Egypt represent a major problem as compared with heart diseases, malignancy and road accidents. Studies reveal that about 0.1% of the total population are affected by major burns. Death rate is still high, about 30%. Of the saved, 36% need later reconstruction. Domestic causes are responsible for 75% of the injuries **(Fawzy Halawa, 2017).**

Aim Of The Work

This study is aimed to assess mothers knowledge and practices about their children Scalds Burn through:

1.Assessing mother's knowledge regarding scalded burn and home health care.
2.Assessing mother's practices regarding scalded burn and home health care.

Research question:

1.Are there relation between socio economic and mothers knowledge related to scalds burn?
2.Are there relation between socio economic status and mothers practices related to scalds burn ?
3.Are there relation between mothers knowledge and practices related to scalds burn/?

SUBJECTS & METHODS

This study aimed to evaluate care for children with scalds burn at home.

Subjects and methods of the current study were under the following four designs:

I-Technical design

II- Operational design

III- Administrative design

IV- Statistical design

I. Technical design:

The technical design for the current study included a description of the research design, settings, subjects and tools of data collection.

Research Design:

A quasi experimental design was utilized to conduct this study. Quasi-experimental studies are appropriate when randomization is deemed un ethical , not require control groups, It includes a pre-test.

Setting:

The current study was conducted at the outpatient clinics of pediatric department at Alahrar hospital at Zagazig City affiliated to Sharqia Governorate. The outpatient clinic present at first floor. The annual frequency of cases was about 1500 cases, and the hospital serves about 7 governorates 7 days in week.

Sample technique:

A purposive sample was used in the study. The total numbers of children were included in the study was (70) according to inclusion criteria child under twelve years old and their mothers attending to previous setting were included in the study throughout a period of six months, two monthes assessment and pre test was done, three monthes for programe implementation followed by immediately post test and last month follow up was done from the beginning of February 2020 up to the end of July 2020 as rate of cases according to the inclusion criteria:

- The Children who diagnosed with scaled burn with 1st and 2nd degree,
- Children age under twelve.
- And criteria for mothers, able to follow simple verbal commands and instructions
- Accepted to participate with the program in the previously mentioned setting.

Tools of data collection:

Two tools were used for collected the data as following:

First tool: (Children scalds burn Structured interviewing questionnaire sheet (Appendix I):, consisted of five parts for the children suffering from scald burn and their mothers

It was developed by the researcher based on recent and scientific review of literature and content validated by the expertise from Faculty of Nursing. It constructed to assess their demographic data, knowledge include 37 questions regarding scald burn. It was included the following:

Part 1: Demographic characteristics for child was included 4questions from (1_4) as child age, gender, rank, education level.

Part 2: Demographic data: For mothers and from question (1) about age to question (7)about income equal 7 questions

Part 3: History of burn as factors contributing to the injury and from question(1) about incidence to question (11)about regular follow up equal 11 questions .

Part 4: mothers' knowledge regarding scalds burn was used **pre-post and follow up program :** total number

(**15 questions)** divided in to **(7 questions)** about knowledge regarding scalds burn Such as meaning of scalds, causes, types of scalds, manifestations, tips on preventing scald burn, first aid advice, high –risk environment, also mother Knowledge about Nutrition needed for children with scalds burn was included **(4 questions),** and their Knowledge about first aids for scalds burn was included **(4 questions).**

Total scoring system of mothers' knowledge:

Three levels of scoring for each question was as Correct and complete answer was scored (2) grade. Correct and incomplete answer was scored (1) grade. Incorrect answer or don't know was scored (zero) So, the total score of 15questions were 30 grades.The total scoring system of mothers' knowledge was calculated and classified into three levels as following: For 75 – 100% = 22.5 grade was considered good level of knowledge. For 60 - < 75% = 18 grade was considered average level of knowledge. For less than 60% = 16.5 grade was considered poor level of knowledge.

Part 5: The reported Mother practices regarding scales burn check list (pre-post, and follow up program It covered (11questions) regarding dressing for scales burn, hygienic measures, bandage, infection control, and physician follow up.

Scoring system for mothers' practices:

The mothers' response for each statement was ranged from done (grade 1) and not done (grade zero). The total scoring system of mothers' practices regarding scalds burn for 11 questions were 11 was divided in to the following: For 60% and above was considered done level of practices. For less 60% was considered not done level of practices.

Second Tool (Appendix II): based on (Taylor Scale): (Alfred et al., (2014) the researcher was adapted the second tool scalds burn anxiety to assess children and mothers' regarding anxiety toward scalds burn and was translated into Arabic language by the researcher; it composed of 3 items never, sometimes and always

Scoring system:

The Burn Anxiety Inventory has a three point Likert scale ranging from always(3) , sometimes(2) and never(1) composed of 13 questiond .Total anxiety score was 39 grades divided into the following: Never when the total score was less than 60% = 19.5 grade . Some times when the total score was 60% to less than 75% = 23.5 grade . Always when the total score was 75% to 100% = 29 grade .

Content validity:

The previous tools were tested by three professors from family and community health

nursing department – faculty of nursing – Ain shams university.

Content reliability:

The previous tools were tested by Cronbach alpha test of reliability, the tools were proved to be strongly reliable tool (r = 0.899).

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 evaluated for their content validity by three professors of community health nursing –faculty of nursing-Ainshams university. The experts reviewed the content of the instruments and to judge its clarity, relevance, comprehensiveness, simplicity and applicability. This phase took around one month (january 2020) and there was no change in tools .

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 (α = 0.842) and questionnaire sheet for used to assess mothers' practice regarding to scaled burn was (α =0.894). Tool was in english and been translated into Arabic.

Ethical consideration and human rights:

The researcher explained the aim, nature and expected outcomes of the study to the studied mothers before their participation in order to obtain their acceptance. The studied mothers were informed that, the study was harmless and all the gathered data were confidential and were used for the research purpose only. The studied mothers' participation in the study was voluntary and mothers were informed that, they had the right to withdrawal from the study at any time. An oral consent was taken from studied mothers who accepted to participate in the study.

Pilot study:

A pilot study was done on 10% (7 mothers) to test clearness and applicability of the study tools and to assess the time required for fulfilling the tools. No radical modifications were done according to the results of pilot study. Participants involved in the pilot study were included in the study sample; this phase took around one month.

Field work

For the routine work in out patient clinic , the researcher allocated three days each week ((Monday, Tuesday and Wednesday.), , from 10 AM – 2 PM, for collection of data from mothers at selected setting. The investigator were select cases according to inclusion criteria 3cases per 3 days per week for two months from febrauary 2020 to July 2020 mothers interviewing range from 30 to 45 minutes .

The assessment phase (pretest) was done for 70 mothers; it lasted two months to be fulfilled. The implementation phase of the program& posttest lasted for three months to be accomplished. Post test was done immediately after program implementation and last month follow up was done .

- 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.

Results

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 (x^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): reveals that 47.1% of mother their age ranged between 25 -<35 with the mean age was 32±6.86, while 54.3% of mothers was secondary& university education, 77.1% of them was house wife and shows that 40 % of scald children their age <3 years, with the mean age of child

ren 5 ±6.87, 62.9% of children was female, 54.3% of them at nursery

Table (2): shows that, 92.9% of studied children their incidence were less than one year, regarding the degree of burn 67.1% were in second degree. However, 8.6% of children were exposure to burn and other sibling to burn before. As regards place of burn (37.1% & 27.1%) of children had left arm & right arm respectively. 48.6% of children the burn caused by boiling water and boiling hot drinks.

Table (3): illustrates that, 88.6 % of studied mothers had poor knowledge about meaning of scalds burn regarding signs of scalds burn this table found that 57.1% of them had average knowledge about scalds burn.

Table (4): as regards mothers' practices about dressing care for children with scalds this table shows that 84.3 % of studied mothers had not done hand hygiene, regarding remove old dressing 35.7% of them had not done.

Table (5): as regards mothers' practices about home first aids among children with scalds burn this table shows that 82.9% of studied mothers had not done about cooling scalds with running water compared to 22.9% , regarding given analgesic 54.3% of them had not done . Concerning remove clothes gently 61.4% of mothers had not done. Regarding go to doctor this table. shows that 61.4% of them had not done.

Table (6): as regards children regarding psychological anxiety level relating to their burn this table shows that 61.4 % of studied children had sometimes eating disturbance, regarding increase child nervousness 80% of them had sometimes .

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

Mothers' characteristics	No	%
Age/years		
16-<25	13	18.6
25 -<35	33	47.1
35-<40	24	34.3
Mean ±SD 32±6.86		
Level of Education		
Not read and write	11	15.7
Preparatory education	21	30.0
Secondary & University	38	54.3
Social condition		
Married	**70**	**100**
Occupation		
Working	16	22.9
Housewife	54	77.1
Family number		
3-4	54	77.2
5-6	15	21.4
7->8	1	1.4
Residence		
Rural	32	45.7
Urban	38	54.3
Income/ month		
500-1000	4	5.7
>1000	66	94.3
Age/years for child		
<3	28	40.0
3<6	17	24.3
6<9	11	15.7
9-12	14	20.0
Mean ±SD 5 ±6.87		
Gender for child		
Male	26	37.1
Female	44	62.9
Educational level for child		
Nursery	38	54.3
Preparatory	32	45.7
Ranking for child		
First	6	8.6
Second	24	34.3
Third	26	37.1
4 and more.	14	20.0

Table (2): Distribution of child according to their history (n= 70)

Items	No	%
Incidence		
<1 year	65	92.9
>1 year	5	7.1
Degree of burn		
First degree	23	32.9
Second degree	47	67.1
Exposure of the child to burn before	6	8.6
Exposure of other sibling to burn before	6	8.6
Place of burn*		
Head and neck	13	18.6
Right arm	26	37.1
Left arm	17	24.3
Right leg	15	21.4
Left leg	19	27.1
Back area	15	21.4
Chest and abdomen	14	20.0
Genital area	4	5.7
Causes of Burn		
Boiling water	34	48.6
Boiling oil	14	20.0
Boiling hot drinks	19	27.1
Electricity devices	3	4.3
Signs of Burn*		
Red and inflammation of site	69	98.6
Bubbles	54	77.1
Grab the skin	54	77.1
Swelling occurs	31	44.3
Complications happen	36	51.4
If yes: child suffering from other diseases (n=36)	6	16.6
Follow-up for Physician	40	57.1
Possibility the child movement		
Easy movement	28	40.0
No movement	1	1.4
Moderate movement	34	48.6
Moves into difficulty	7	10.0

N.B. *items not mutually exclusive

Table (3): Distribution of mothers according to their knowledge about scalds burn (N=70).

Items	Knowledge	
	N	%
Meaning of scald burn		
Poor	62	88.6
Average	3	4.3
Good	5	7.1
Signs of scalds burn		
Poor	19	27.1
Average	40	57.1
Good	11	15.7
Causes of scalds burn		
Poor	40	57.1
Average	21	30
Good	9	12.9
Wrong home treatment		
Poor	52	74.3
Average	18	25.7
Good	0	0
Home care steps		
Poor	68	97.1
Average	2	2.9
Good	0	0
Complications peak pimples		
Poor	69	98.6
Average	1	1.4
Good	0	0
Request medical treatment		
Poor	70	100
Average	0	0
Good	0	0

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): Distribution of mothers according to their practices for children with scalds (N=70).

Items	Practice	
	N	%
Hand hygiene		
Not Done	59	84.3
Done	11	15.7
Remove old dressing		
Not Done	25	35.7
Done	45	64.3
Notice the site of wound for any secretion		
Not Done	60	85.7
Done	10	14.3
Avoid remove bubbles		
Not Done	60	85.7
Done	10	14.3
Rinse with solution		
Not Done	41	58.6
Done	29	41.4
Put ointment		
Not Done	40	57.1
Done	30	42.9
Put sterile dressing		
Not Done	18	25.7
Done	52	74.3
hand washing after the procedure		
Not Done	59	84.3
Done	11	15.7

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**

Table(5): Distribution of mothers according to their home first aids practices among children with scalds . (N=70).

Items	Mother practice	
	N	%
Coling with running water		
Not Done	58	82.9
Done	12	17.1
Give analgesic		
Not Done	38	54.3
Done	32	45.7
Remove clothes gently		
Not Done	43	61.4
Done	27	38.6
Go to doctor		
Not Done	43	61.4
Done	27	38.6

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

Table (6): Distribution of children regarding psychological anxiety level relating to their Burn pre implementation of Training Program (N=70)

Items	Anxiety level	
	N	%
Eating disturbance		
Never	2	2.9
Sometimes	43	61.4
Always	25	35.7
Increase child nervousness		
Never	12	17.1
Sometimes	56	80
Always	2	2.9
Difficulty in concentrating		
Never	17	24.3
Sometimes	39	55.7
Always	14	20
Irregular sleeping		
Never	1	1.4
Sometimes	58	82.9
Always	11	15.7
Isolation child does not participate at any social activities		
Never	21	30
Sometimes	8	11.4
Always	41	58.6
Panicking and nightmares during sleeping		
Never	18	25.7
Sometimes	13	18.6
Always	39	55.7
Constant fear from others		
Never	15	21.4
Sometimes	14	20
Always	41	58.6

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**

Discussion

The present study aims to evaluate care for children with scalds burn, the researcher design and implement program intervention based on assessment of mother's needs and evaluate the effect of program instruction on mothers' of children with scalds burn.

Demographic data for children:

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±6.87. This result study is consistence with **Omar et al., (2017)** 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)** attributed increasing motor skill with increasing ability to encounter hot liquids or solids. In addition, 62% of children were female. this study is consistence with **Li et al., (2017)** in titled "Epidemiology of pediatric burns" in southwest China from 2011 to 2015 who said 54% of children were boys, and the result done by **Marashi & Baatarjav (2017)** titled "**Pediatric burn injuries requiring hospitalization" in Fars**, **Southern Iran** who stated that 51% were males and the mean age of the children was 2.86±2.86years. Also**,** the current study shows that more than half of them at nursery. Moreover, more than one third of children were third ranking.

As regards the characteristic of studied mothers revealed that less than half of their age

ranged between 25 -<32 with the mean age of mothers was 32±6.86, while more than half of mothers was secondary education, more than two third of mothers was housewife, majority of them was income>1000 (**table 2)**. This result supported by the study of **El-desouky (2018),** Home-related injuries among children: Knowledge, attitudes and practice about first aid among rural mothers Eastern Mediterranean health journal who study home-related injuries among children: knowledge, attitudes and practice about first aid among rural mothers who found that, about 50% of of the studied mothers were aged 25:< 35 years with mean age of 30.8 SD ±7.9 years (range 19–54 years) and the majority of those studied mothers did not work.

Also this finding is in agreement with **(Mohammed et al., 2018)** Supportive Strategies Regarding Accidents Prevention For Mothers Of Children Under Five Years, 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)** Determination Of Knowledge, Attitudes And Behaviors Regarding Factors Causing Home Accidents And Prevention In Mothers With A Child Aged 0-5 Years, Journal Of Education And Practice who study determination of knowledge, attitudes and behaviors regarding factors causing scalds burn 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) 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.

From the researchers' point of view these results are related to that, urban children are more prone to burns because they spend more time at home while their peers play in the yard. Also, most of studied sample of mothers are low socio economic class as more than half of them were housewives with majority of them had insufficient monthly income also, one quarter of them were divorced and widow so they hadn't any other source of income to improve their quality and safety level of house.

In relation to residence of the studied mothers it was found that more than half of them had residence in urban area. This finding is in agreement with **Ummuhan and Behice, (2018) 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)** 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. From the researchers point of view this results are related to that, most of studied sample of mothers are low socio economic class were income>1000, as more than half of them were housewives with majority of them had insufficient monthly income also, one quarter of them were divorced and widow so they hadn't any other source of income to improve their quality and safety level of house

In relation to children their incidence the current result showed that majority of them were less than one year, regarding the degree of burn more than two third were in second degree. However, minority of children were exposure to burn and other sibling to burn before. This trend is consistent with **(Drago 2019)** Kitchen scalds and thermal burns in children five years and younger. Peadiatrics findings and similarly suggests a role of increasing maturity and understanding in reducing the risk for burn injury. He attributed his reported decrease in scalds and contact burns among older toddlers and preschoolers to increased awareness of the

consequences of their actions as children develop intellectually. Greater severity of injury was clearly associated with scalds, as reflected in nearly 25% of cases being transferred or hospitalized, compared with 95% of thermal burn cases being treated and released. This finding is consistent with previous studies **(Katcher et al., 2017)** Burn injury from products in the home: Prevention and counselling **(Drago 2019)** and makes sense because scalds tend to affect larger body surface areas, with deeper tissue injury than do thermal burns.

As regards place of burn the current study showed that more than one third and more than one quarter of children had left arm & right arm respectively. Less than half of children the burn caused by boiling water and boiling hot drinks; Moreover, majority of them had Red and inflammation of site bubbles as a signs of scalds burn. More than half of children had complication after burn.There was a largely predictable relationship between the agent and mechanism, age of the child and anatomical distribution of the burn or scald. The toddler pull-down scald resulted in a scald to upper part of the body. Scalds were predominantly on the front of the body, asymmetrical and rarely affected head, buttocks, genitalia or back of the body. This finding is inconsistent with **(Banco, 2017)** "Burn injuries among children in an urban emergency department ". Pediatr Emerg Care which reported that there was an excess of injuries affecting 25% or more body surface associated with the pattern "reached up and pulled down pot from stove or other elevated surface". This because this pattern results in a cascade of hot liquid falling onto a standing child

In accordance to **(Li, et al., 2017)** mentioned in a study about Epidemiology of pediatric burns in Southwest China showed that Hot water and soup were the most common causative agents overall, accounting for 51% of children and the most common substances involved in the 3 scald patterns " reached up and pulled down pot from stove or other elevated surface; " grabbed, overturned, or spilled pot onto self "; and " collided with pot or with person holding pot ". Tea ranked third in frequency followed by food item and milk. Victims of scalds are able to reach a pot that contains the hot substance; therefore, it is appropriate when designing interventions to consider reach capability, especially of children 1 and 2 years of age19. The height of an average 1 – year – old is 74 – 76 cm (WHO growth charts)**.**

Mothers' knowledge related to scalds burn :

As regards mothers' knowledge related to scalds burn **table (3):** 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 home care program compared to more than two third and approximately two third have good knowledge immediately post home care programe and follow up post three months. This is in agreement with the findings of **Yassin et al., (2018) 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 in Egypt** 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) 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 founded 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),** 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 an and need to health education program to raise their awareness.

This is also in agreement with a study conducted in China by **Zhao et al., (2019), An Investigation on knowledge-attitude-practice about injury and the related factors among school children's parents in Jinan, China which** concluded that parental knowledge on injury prevention and safety promotion was unsatisfactory. However, these findings are in disagreement with the findings of **Alimohammadi et al., (2018),** who conducted a study in Iran on 230 mothers and mentioned that 75% of participants had good knowledge on preventive measures. From the researchers point of view this results are related to that, lowering of educational level of mothers and also insufficient health education in some health services and lack of mothers' utilization for some health services which are available and accessible for them.

Regarding the wrong home treatment **(table3)** shows that less than three quarter of them had poor knowledge pre home care programme compared to more than half of the mothers had good knowledge post intervention. Concerning complications peak pimples majority of them had poor knowledge pre home care program compared to more than two third of studied mothers had good knowledge post intervention. Finally, all mothers had poor knowledge regarding request medical treatment at pre intervention compared to the majority of the mothers had good knowledge post intervention and post three months.

There was a highly statistically significant in all items at $p<0.01$. These results were in the same line with **Brink et al., (2019)** in a study entitled "Infant burns: a single institution retrospective review " who reported that, most of the burns in children occurred in the home and their mothers had unsatisfactory knowledge as regards the wrong home treatment in the pre-intervention phase. While, there was a significant improvement of the studied mothers' knowledge post intervention when compared with that before intervention.

From the researcher point of view, poor knowledge level of the studied mothers in pre-educational intervention might be due to lack of opportunity for attending programs, training courses and guideline booklet availability regarding scalds burn. On the other hand, the majority of the studied mothers had good knowledge level post-educational intervention. This could be attributed to the program content which was developed based on mothers' needs regarding care of scalds burn children. The positive change in the total score of nurses' knowledge indicates that the educational intervention was effective in improving mothers' knowledge in relation to scalds burn in children.

Regarding distribution of studied mothers in relation to their knowledge about about home first aids **(table5),** the present study demonstrated that, mothers' knowledge improved significantly regarding knowledge of first aids for children with scalds burn at home post-educational program intervention and follow up when compared with pre-educational program intervention results. This finding agreed with the study done by This result was contrast with **(Cetinkaya & Gamze, 2021)** who study entitled **"The effect of the training on parents' knowledge level regarding first aid in pediatric burn" in Turkey** and reported that half of the parents (50%) had first aid knowledge, mothers or child care providers have insufficient knowledge about first aid. On other hands in previous studies, it was reported that the majority of mothers have first aid knowledge.

Regarding the important of first aids the current study found that the majority of mothers had poor knowledge at pre intervention compared to more than half of the mothers had good knowledge post intervention and post three months. These results were supported by **El Seifi et al., (2018)** who study entitled "**Effect of community-based intervention on knowledge, attitude, and self-efficacy toward home injuries among Egyptian rural mothers having preschool children"** reported that, the training provided in the emergency unit is effective to increasing the first aid knowledge of parents in burn cases. Also, found that mothers' knowledge scores first aid increased

significantly after training. In the study of **Ozturk et al., (2017) Home accidents and mothers measurements in preschool children**. **Anatol J Clin** who reported that there was no statistically significant difference between the first aid knowledge levels of the mothers participating in first aid training.

Anxiety level according to scalds burn at home:

As regards the children' psychological anxiety level in relation to their scalds burn **(table 6),** it was noticed, there was a highly statistical significant between children' psychological anxiety pre and post program intervention. Also, there was statistical significant difference as regards their psychological anxiety pre and follow up of program intervention ($p<0.01$). This finding was supported by that more than two third of studied children had sometimes eating disturbance at pre intervention compared to nothing of them had always disturbed eating in post intervention and minority of them had always at follow up, regarding increase child nervousness majority of them had sometimes at pre intervention compared to also nothing of the children had always increase the nervousness at post intervention.

In addition, more than half of children had sometimes complained from difficulty in concentrating at pre intervention compared to nothing of children months. the present study is consistence with **Cabulon, et al., (2016)** titled in **"Quality of life of individuals treated in an outpatient burn treatment center**: application of the BSHS-R who stated that a negative impact on the children's quality of life was revealed for the domains simple functional ability, affect, body image and interpersonal relationships and study done by **Bakker, et al., (2018)** titled **in psychological consequences of pediatric burn from a child and family perspective**: a review of the empirical literature who stated that child anxiety, traumatic stress reactions and behavioral problems were considerably prevalent in the first months after the burn, some children experience long-term psychological problems such as anxiety, depression and difficult with social functioning. From investigator point of view may be the most of children were highly psychologically impacted by scalds burn, children impacted negatively from burn and child became suffering from, fears, nightmares and significantly depending on crying as method to declaring his needs and mothers..

Conclusion

Based on the results of the current study, and the research question the following can be concluded more than two third of studied mothers had poor knowledge. ($p< 0.001$). More than two third of studied mothers had in adequate level of practices regarding to scalds burn.

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 patients clinic at general hospitals.

- Increase the care giver knowledge& practicesabout scalds burn accidents prevention and how to provide first aid for children from scalds burn 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

- Increase the mothers practices about scalds burn including dressing care and how to avoid scalds burn at home

- 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 i n all health services to improve mothers' performance about the care children with burn.

References

Abass, S. (2019): Mothers' knowledge of domestic accident prevention involving children in Baghdad city. QMJ 2019; 2:50–56.

Abdel-Hamid and El-Nail, (2006): Diagnosis and rating of anxiety. Br. J. psychiatry, 3(special issue), 76-79

Al-Qahtani FA, Alanazi MA, Alanazi MK, Alshalhoub KS, Alfarhood AA & Ahmed SM. (2019): Knowledge and practices related to burn first aid among Majmaah community, Saudi Arabia. J Family Med Prim Care, 8(2):594-8.

Ashwill, D. & Droske, S. (2016): Nursing care of children with burn; principles and practices. 2nd ed., Philadelphia W.B. Saunders, pp 834-863.

Avsar, U., Halici, Z., Akpinar, E., Yayla, M., Avsar, U., Harun, U., Harun, U., Hasan Tarik, A., Bayraktutan, Z. (2019): The Effects of Argan Oil in Second-degree Burn Wound Healing in Rats. Ostomy Wound Manage; 62(3):6-34.

Babul S, Olsen L, Janssen P, McIntee P, Raina P. (2017): A randomized trial to assess the effectiveness of an infant home safety programme. Int J Inj Contr Saf Promot 2017;14:109–17.

Bachier, M., Hammond, S.E., Williams, R., Jancelewicz, T., Feliz, A. (2019): Pediatric scalds: do cooking-related burns have a higher injury burden? J Surg Res.; l99(l):230-6. doi: l0.l0l6/j.jss.2015 .05.0l6. doi: l0.l0l6/j.burns. 2018.l2.006. Epub 2019 Feb l2.

Burns. www.who.int. Accessed 5/l/2016. Drago, D.A. (2019): Kitchen scalds and thermal burns in children five years and younger. Pediatrics; ll5(l):l0-6. doi: l0.l542/peds.2004-0249.

Cabulon, et al., (2016) titled in "Quality of life of individuals treated in an outpatient burn treatment center.

Carlsson, A. Bramhagen, A. Jansson, A. Dykes. A. (2018): Precautions taken by mothers to prevent burn and scald injuries to young children at home: An intervention study Article in Scandinavian Journal of Public Health, 2018; 39: 471–478 ·

Clifton, L., Chong, L. & Stewart, K. (2019): Identification of factors that predict outpatient utilisation of a plastic dressing clinic A retrospective review of 287 paediatric burn cases. Burns, 41, 469-475.

Fabio J. Pencle, Hassam Zulfiqar and Muhammad Waseem (2019): First Degree Burns; 45(3):659-670.

GadAllah, M. (2019): Patterns of Burns among Children up to Five Years Old in El-Minya – Egypt. Journal of Medical and Pharmaceutical Sciences Issue (2), Volume (3) June 2019 ISSN: 2522-333X

Ghorbel I, Bouaziz F, Loukil K, Moalla S, Gassara M, Ennouri K. (2019): Epidemiological profile of burns in children in central and southern Tunisia: a 67-case series. Arch Pediatr 2019;26 (3):158–60. https://doi.org/10.1016/j. arcped.2019. 02.007. Epub 2019 Feb 28.

Hess, et al., (2000): Clinical manual pediatric nursing 5th ed., Mosby, Boston New York Philadelphia pp. 343-350 and Wong, et al., (2015): maternal child nursing care 6th ed., Mosby company, new york Philadelphia pp. 1883-1897.

Kawalec, A. & Pawlas, K. (2020): Home environment and burns in children in Poland. Department of Hygiene, ul. J. Mikulicza-Radeckiego 7, (50) 167–175 Wrocław, Poland. https://doi.org/10.1016/j.burnso.2020.05.006 2468-9122/_ 2020 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license http://creativecommons.org/licenses/by-nc-nd/4.0/.

Khalil, M. Mohamed, A, N. Ibrahem, A. Megahed, 1, El Disoki, Q. (2018): Knowledge, attitude and practice of rural mothers towards home injuries among children under 5 years of age In Menouf District-Menoufia Governorate, Egypt Year: 2018 | Volume: 29 | Issue: 4 | Page: 1033-1039

Mohammed Ar, Mohammed Ns, Byoumi Mh.(2017): Supportive Strategies Regarding Accidents Prevention For Mothers Of Children Under Five Years Old. Jbah 2013; 3:1-11.

Omar et al., (2017): "Knowledge, attitude, and belief regarding burn first aid among caregivers attending pediatric emergency "in Tehran Iran.

Rachel Warby, Christopher V. and Maan (2019): Burns Classification. Genesys RMC, Grand Blanc US Army.

Rangaraju, L.P., Kunapuli, G., Every, D., Ayala, O.D., Ganapathy, P. and Mahadevan-Jansen, A (2018): Classification of burn injury using Raman spectroscopy and optical coherence tomography: An ex-vivo study on porcine skin. Indian J Plast Surg.; 45(2): 364–373

Simon, P. and Baron, R. (2018): "Age as a risk factor for burn injury requiring hospitalization during early childhood" Arch Pediatr Adolesc Med, 148:394 – 397: (2018).

Sobhy D. (2017): Impact of health promotion educational program for mothers about accident prevention and first aid for preschool children at Benha City [Unpublished Doctor Thesis]. Egypt: Department Of Public Health Nursing, Faculty of Nursing, Benha University; 2017.

Ümmühan Aktürk* Behice Erci,(2018): Determination Of Knowledge, Attitudes And Behaviors Regarding Factors Causing Home Accidents And Prevention In Mothers With A Child Aged 0-5 Years, Journal Of Education And Practice, Vol.7, No.18, 2018

Waled A. M. A.,(2018): Home accidents and associated factors among children lless than five years old In Sudan: A Descriptive Study, GMJ. December 2018: Volume 5(1).

Yassin Ai, El-Sabely Aa, Zaher Sa. (2018): Mother's education and her knowledge about home accident prevention among Preschool Children In Rural Area In Sharqia Governorate. Jnhs 2014; 3:32-40.