IOSR Journal of Nursing and Health Science (IOSR-JNHS)
e-ISSN: 2320–1959.p- ISSN: 2320–1940 Volume 9, Issue 6 Ser. VII (Nov. – Dec. 2020), PP 16-32
www.iosrjournals.org

Education program for new and experienced mothers around childhood accidents safety and emergency intervention

Asst. Prof/ HOWAIDA MOAWAD AHMED ALY
Assistant Professor of Pediatric Nursing, Banha University, Egypt.

Abstract:
Background: *Accidents are one of the leading causes of injury and mortality in children, however, most of these accidents are preventable.*

Purpose: *To evaluate knowledge and safety-related behaviors gathered from new and experienced mothers which relate to different types of children's accidents at the starting point of the program. Implementation of the program to increase the study group's expertise regarding emergency interventions that can be used to deal with accidents that children often have. Comparative analysis of the knowledge gathered between new and experienced mother's, inclusive of safety behaviors and emergency intervention knowledge at the start of the educational program to discover correlations between the two groups of mothers. This will help to uncover any sociodemographic connections or trends between the mothers through their background, safety behavior, and knowledge on emergency intervention.*

Methods: *This study used a quasi-experimental design and was implemented in the children's outpatient clinic in the specialized children's hospital in Banha city, Egypt. The tool I: Part 1: Gathering sociodemographic knowledge from both new and experienced mothers. Part 2: Interviews to assess the gathered knowledge of the mothers. Tool II: A questionnaire given to each mother to determine their level of understanding and knowledge of safety behaviors. Tool III: An emergency intervention checklist is given to the mothers to educate on what can be done when juvenile accidents occur.*

Results: Over two-thirds of the mothers reported living on low incomes, in pastoral areas with children who had suffered previous accidents. There was a significant advancement in the new mothers compared to the experienced mothers after taking part in the program about their knowledge and performance. There were also significant improvements to the experienced mothers' safety behaviors after participating in the program. Statistically significant correlations were found between mothers' knowledge, safety behavior, emergency intervention, with their age, education level, job, and birth order at P<0.000.

Conclusion: *Juvenile accidents continue to be a major issue, jeopardizing the lives of many children. 71% of the children from the study participants were susceptible to various potential accidents. The most common of these included choking, falling, and fractures. The educational program has created a tangible improvement in the new and experienced mother's safety behaviors and knowledge on emergency interventions for different common juvenile accidents. Egypt can now use the knowledge from this study to reduce their levels of child mortality and accidents, whether this is by preventative measures or further education on emergency interventions.*

Keywords:*program, mothers, safety, childhood accidents.*

Date of Submission: 14-12-2020 Date of acceptance: 26-12-2020

I. Introduction:

A recent report between the World Health Organization and UNICEF concerning childhood injury prevention in Egypt has shown that more than 2,000 children die from preventable accidents daily in the country. The most common accidents reported included road traffic injuries, burns, falls, poisoning and drowning. The aim of the report is to find solutions to stop these preventable accidents from happening by the promotion of evidence-based injury-preventing interventions and a plea for sustained investment from all relevant sectors **(WHO, 2020).**

The World Health Organization (WHO) defines an accident as being the result of an acute, often unanticipated exposure to physical agents including excessive heat, electricity, mechanical systems, chemicals and ionizing radiation, which, when interacting with the body in amounts, forces or proportions that surpass human tolerance, can cause grievous bodily harm or death. The WHO estimates over 630,000 minors under the age of 15 lost their lives to accidents **(WHO, 2020).** Juvenile accidents have long been considered a global issue on the grounds of being the number one cause of mortality in multiple countries.

There are thousands of children living with varying degrees of disability, which is one of the factors that can lead to higher morbidity rates in juvenile accidents **(Cevik, et al., 2017).** As reported in **(Hyderet, al., 2009).**1, over 875,000 children under 18 pass away annually around the globe as a result of an accident. The majority are attributed to lower and middle-income countries, where accidents are the cause of 13% of the total morbidity statistics among children under 15 years of age.

Educating mothers on emergency interventions and how to save their children in case of potential accidents in order to prevent unnecessary deaths will thereby reduce complications arising from accidents, as well as childhood morbidity in general. The training of new and experienced mothers is crucial because most accidents occur at home **(Bánfai, et al.,2015;Carlsson,et al., 2016).** Mothers are generally reported to be the main caregiver responsible for ensuring a secure environment for children and safeguarding them from risks.Therefore, the implementation of an educational program is very important in order in ensuringchildren's safety by helping prevent accidents in and outside the home environment **(Alrimawi,et al., (2019).**

Significance of the study:

The World Health Organization shared statistics for Egypt on the causes of juvenile death in children under the age of five years; cause by injury accounted for 5.9% of total deaths, while newborn deaths caused by injury accounted for 1.1% (WHO, 2020). Another study conducted in Egypt **(Halawa,et al., 2015),** showed these fatalities were markedly higher amongst male children than their female counterparts.

The five leading causes of juvenile injuries were fractures, wounds, burns, swallowing of foreign bodies, and accidental ingestion of poison, especially in pastoral areas, whereas the highest risk areas for children to potentially obtain an injury were identified as in their own home and surrounding areas. These injuries are a major encumbranceto Egypt's health care system. It is clear that the implementation of nationwide preventive programs designed to educate mothers on how to reduce the prevalence of childhood injuries and teach intervention techniques in case of an accident or emergency is extremely important.

Aim of the study:

To evaluate knowledge and safety-related behaviors gathered from new and experienced mothers which relate to different types of children's accidents at the starting point of the program.

Implementation of the program to increase the study group's expertise in regard to emergency interventions that can be used to deal with accidents that children often have.

Comparative analysis of the knowledge gathered between new and experiencedmother's, inclusive of safety behaviors and emergency intervention knowledge at the start of the educational program in order to discover correlations between thetwo groups of mothers. This will help to uncover any sociodemographic connections or trends between the mothers through their knowledge, safety behavior and skills on emergency intervention.

II. Methods:

- Research type: Quasi-experimental design andthe study was implemented at the children's out-patient clinic in the specialized children's hospital based in Banha city, Egypt.

- Sample selection:

The sample group was selected by the simple random technique and contained 250 new mothers who have an only child in any childhood stage and 250 experiencedmotherswho have several children of different ages between birth to adolescence.

- Research hypothesis:

- The implementation of education program will allow progress for the new and experiencedmothers through sharing knowledge, safety behaviors and possible interventions for different types of accidents that often occur in children.
- There will be significant statistical differences between the achievements made by the new mothers in comparison to the experienced mothers at the beginning and at the proficiency point within the program.

- Tools: ***In this study, three measuring instruments were used:***

Tool I: A structured interview was developed by the researchers to collect data about:

Part 1*:* Sociodemographic details of the new and experienced mothers such as age, level of education, marital status, childbirth order, employment and income, address, history of previous accidents and the types of accident their child was exposed to.

Part 2: The interviewing of participants in order to compare knowledge of both groups of mothers, both at the beginning and then at the proficiency point ofthe program. This knowledge further defines the type of

unforeseen accident, its location relative to the home, predisposing factors and home modification as a means to support disability and study prognosis.

Scoring system:

All of the mothers' answers were assessed to ascertain the level of their knowledge, both at the beginning and at the proficiency point on completion of the program with the following results:

I. The mothers who answered less than 50% of the questions were deemed to have insufficient knowledge.
II. The mothers who answered between 50% to 85% were considered to have sufficient knowledge.
III. The mothers who were able to answer more than 85% of questions were deemed to have outstanding knowledge.

Tool II:

Participant mothers completed questionnaires to determine their levels of knowledge and understanding around safety behavior in regard to protecting their children from possible accidents in different age ranges at both the start and end of the program.

Scoring system:

All of the participant mothers' behaviors were evaluated in regard to their ability and possibility to adopt new safety behaviors to protect children from potential accidents and grouped as follows:

I. Mothers who scored over 50% were considered to have dependable behavior.
II. Mothers who scored less than 50% were deemed to have risky behavior.

Tool III:

Anemergency intervention skillschecklistwas given during the educational program to the mothers to advise on how to deal with a variety of common accidents such as burns, poisoning, choking,wounds, bleeding, and fractures, as well as cardiopulmonary resuscitation. This knowledge was also evaluated at the beginning and end of the program to monitor the mothers' performances and thereby assess the quality of the education program.

Scoring system:

Mothers in the group were trained in emergency intervention skills they could use in case of an accident. Each mother had their own card where their performance was monitored and corrected as follows:

I. Mothers with high performance who completed every component of the program got a score of two.
II. Mothers who did not manage to complete all components scored one.
III. Mothers who answered or performed inappropriately scored zero.

The participants' scores were then grouped together from all the skills tested and categorized as follows:

- If total score from all skills was over 70%, the mother was classed as having excellent performance.
- If total score from all skills was between 50-70%, the mother was classed as having standard performance.
- Mothers with a total score from all skills of under 50% were deemed to have weak performance.

Tools' validity and reliability:

Before the program, the tools were tested in regard to content validity by a panel of two pediatric nursing experts. Modifications were made following their advice on the clarity of sentence structure and appropriacy of content. The Cronbach alpha test 0.65 was then used to statistically test reliability of the tools.

Pilot study:

A pilot study was carried out with 5% of the originally planned sample population to confirm clarity was adequate and to establish the practicalityof the study inclusive of the sample.

Ethical Consideration:

Ethical approval was obtained from the specialized children's hospital ethics committee for quasi-experimental (12-5-2019) Moreover, Participants gave their consent to be included in the study by oral consent and via forms that they completed. Individual names were replaced with codes to preserve participant confidentiality. All mothers were informed that they were free to withdraw from the study at any point, no questions asked.

Field work and study procedure:
Preparatory phase

Preparation for this program included gaining approval to conduct the study, before preparing equipment to be used in the practical sessions. The study was introduced to participants through an explanation of objectives, importance and the real-life benefits to participants in order to further motivate the mothers.

Mothers who took part in the study were rewarded with a copy of the awareness information booklet as a guide they can consult from home when necessary and commendations were given to the children of the mothers who displayed superior performance.

After completing the pre-program evaluation, the mothers were divided into two groups; 10 new mothers and 10 experienced mothers in each. This was done by the researcher in order to easily compare performance between them.

Implementation phase*:*

The educational program was performed over a three-month period from June to the end of August 2019, four days every week. Days were divided into hourly sessions, two of which were dedicated to theory and three to practice. Theoretical sessions included 10 minutes on defining unplanned accidents, whether at home or outside. Also explored were different types of childhood accidents, predisposing factors, home modifications to control safety, disabilities and prognosis. Participants then filled a questionnaire about their safety-related behavior in protecting children from possible accidents in varying age ranges.

The three practical sessions consisted of fifty-minute long sessions on emergency intervention techniques when dealing with the most common juvenile accidents.

Session Procedure

Both session types started with a run-through of the main points of the topic at hand. Simple terms were used in explaining the issues and potential solutions in a way the mothers could easily understand and learn from.

Various teaching techniques were employed in these sessions, including the use of brainstorming, lectures and group discussion. A wide range of learning media were also supplied and used, such as leaflets, videos, presentations and posters.

An open dialogue was welcomed during the sessions in order to gain valuable feedback from the mothers about the various procedures demonstrated. In order to accelerate the learning curve of participants, explanatory videos were used and hard copies handed out to each mother for future use.

Emergency interventions were presented by the researcher on potential accidents in children, such as the safe rescue and care needed in the most common accidents such as burns and lacerations within all juvenile age ranges.

Practical skills are applied on training dolls, real-life objects and the showcasing of equipment that should be available in every home in order to manage emergency interventions for juvenile accidents in an effective, safe manner. After the researcher demonstrates each skill, the mothers copy and receive feedback on their technique.

The researcher used a stepladder to gain a bird's eye view of the room and have better interactions with the mothers. This way, it was possible to quickly note and respond to any questions and to support the practical procedure and learning of the participants, thereby raising the chance of a positive outcome in minimizing childhood accidents.

Evaluation phase

The evaluation of this study was conducted by using a process of comparison of knowledge gathered from two proficiency testing points – one prior and one following the program's completion. This way, it was possible to explore the difference and thereby efficiency of the program by comparison of knowledge.

STATISTICAL ANALYSIS

Knowledge analysis in this study was done by SPSS 24.0 (Statistical Package for the Social Sciences). Qualitative knowledge was transformed into numbers and percentages and paired T-tests were conducted for comparison in results. The Chi-square test evaluated the relationships in the variables between categories.

III. Results:

Table 1: Socio-demographic characteristics of new and experienced mothers (N=500).

Variable	New N (%)	Experienced N (%)
Mother's age		
20-28	20-28	200(80)
29-36	29-36	30(12)
37-42	37-42	20(8)
Mean and SD	25 ±4.12	30 ±5.02
Highest education level		
Primary	6(2.4)	4 (1.6)
Preparatory	15(6)	34(13.6)
Secondary	20(8)	54(21.6)
University	209(83.6)	158(63.2)
Marital status		
Married	190(76)	210(84)
Divorced	32(12.8)	17(6.8)
Widow	28(11.2)	23(9.2)
Working status		
Employed	111(44.4)	203(81.2)
Unemployed	139(55.6)	47(18.8)
Birth order		
First	214(85.6)	0
Second	0	182(72.8)
Third	0	38 (15.2)
Alone	36(14.4)	30(12)
Income		
Sufficient	75(30)	90(36)
Insufficient	175(70)	160(64)
Residence		
Pastoral	155(95)	185(74)
Urban	95 (38)	65 (26)

Table 1: Presents participants' socio-demographic data. Over two thirds of new mothers (80%) were aged between 20-28 years, while more than half of experienced mothers (54.4%) were aged between 29-36 years. Over two thirds of new mothers (83.6%) and (63.2%) of experienced mothers had been university educated. In regard to marital status, over two thirds of new (76%) and experienced mothers (84%) were married. It is shown that (55.6%) of new mothers were unemployed and (81.2%) of experienced mothers were employed. In relation to birth order, knowledge showed (85.6%) of new mothers had one child, whilst (72.8%) of experienced mothers had a second child. Over two thirds of all participant mothers reportedinsufficient income and resided in pastoral areas.

Figure 1: Frequency and percent distribution of the new and experienced mothers related to previous accidents of their children N= (500)

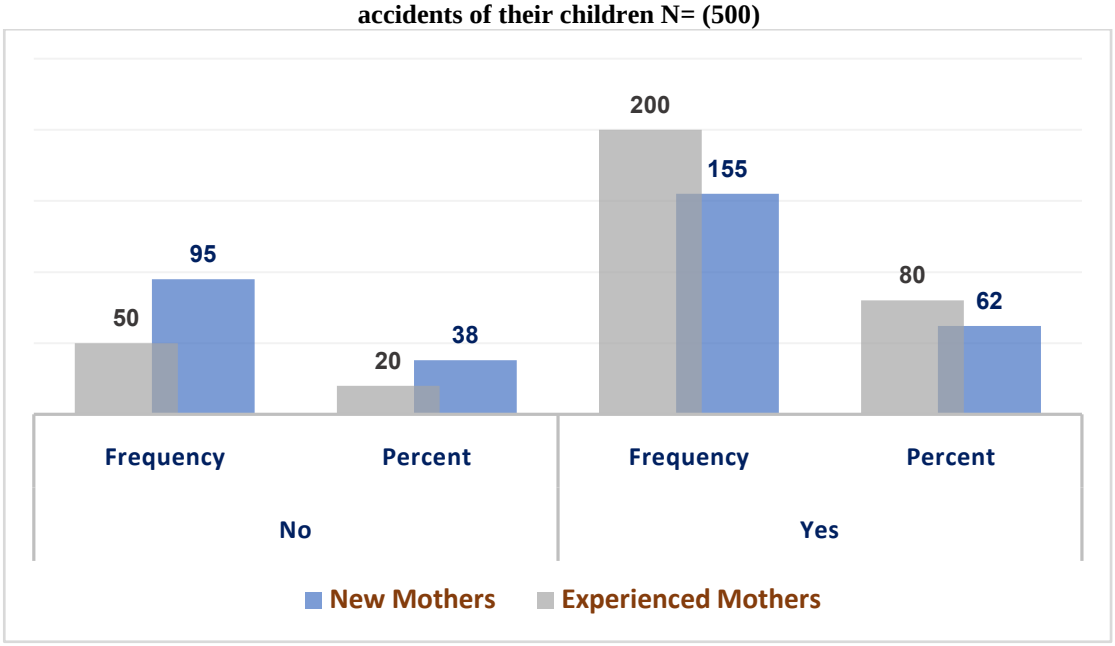

Figure 1: Illustrates that (62%) of the new mothers and (80%) of the experienced mothers' children had previously suffered accidents.

Figure 2: Frequency distribution displaying types of previous accidents of new N= (155) and experienced mothers' children N= (200)

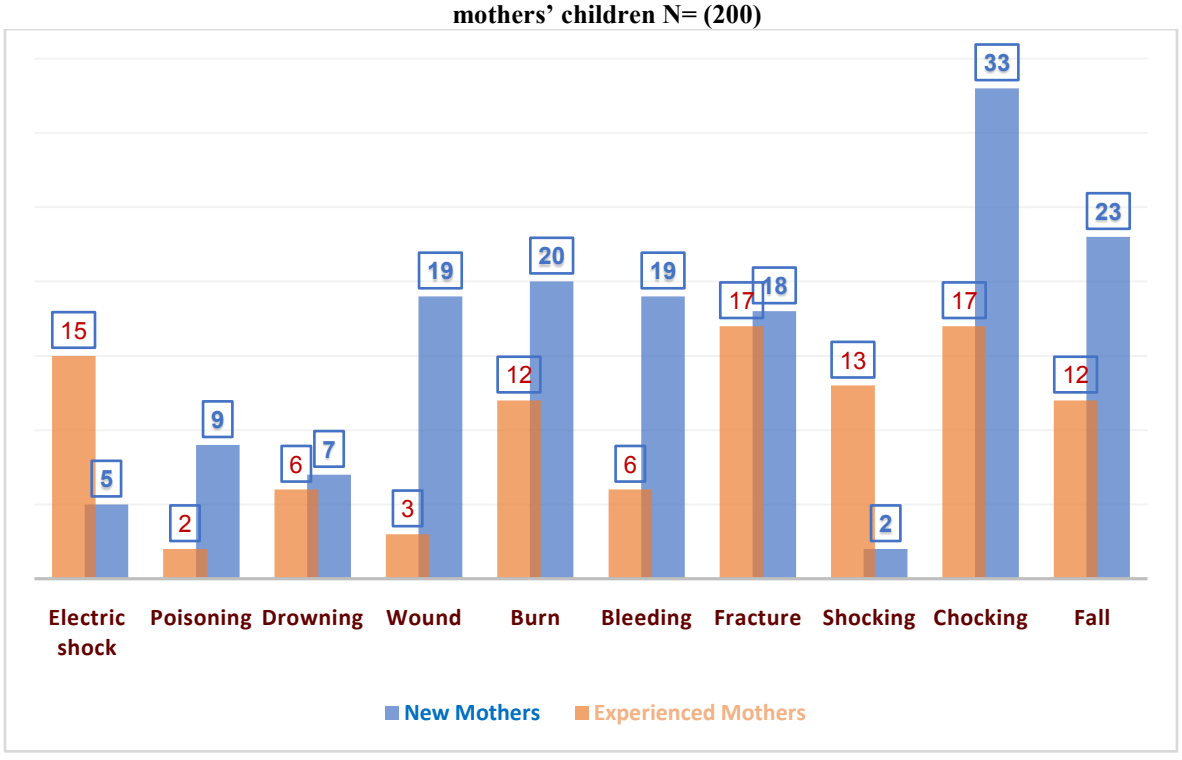

Figure 2: Shows the different types of accident that the children of the two groups of mothers had suffered in the past. New mothers reported that 33 children had choked, while 23 had suffered a fall, whilst the experienced mothers reported 17 children had suffered fractures and a further 17 experienced choking in the past.

Table 2: Distribution of the new and experienced mothers' knowledge at beginning and proficiency point of the education program N= (500)

Knowledge	beginning point				proficiency point				P-Value
	Know		Unknow		Know		Unknow		
	F	%	F	%	F	%	F	%	
Definition of unplanned accidents	155	31	345	69	488	97.6	12	2.4	<0.05
Types of childhood accidents									
• Physical	34	6.8	466	93.2	498	99.6	2	0.4	<0.01
• Psychological	66	13.2	434	86.8	455	91	45	9	<0.05
Predisposing factors									
• Distraction and poor supervision	20	4	480	96	470	94	30	6	<0.05
• Changes to the child's usual routine or being rushed	34	6.8	466	93.2	489	97.8	11	2.2	<0.05
• Poor and/or overcrowded housing	36	7.2	464	92.8	477	95.4	23	4.6	<0.05
• Being in unfamiliar surroundings	66	13.2	434	86.8	488	97.6	12	2.4	<0.05
Control by homemodification									
• Active supervision	67	13.4	433	86.6	497	99.4	3	0.6	<0.01
• Reducing risk of accidents at home	56	11.2	444	88.8	494	98.8	6	1.2	<0.01
• Maintaining safety procedures at home	78	15.6	322	84.4	487	97.4	13	2.6	<0.05
• Keeping things out of children’s reach	23	4.6	477	95.4	493	98.6	7	1.4	<0.01
• Teaching child to be cautious in potentially harmful situations.	91	18.2	409	81.8	486	97.2	14	2.8	<0.05
Disabilities									
• Physical and/or cognitive limitations due to neurotrauma	56	11.2	444	88.8	476	95.2	24	4.8	<0.05
• Paralysis due to spinal cord trauma	45	9	455	91	494	98.8	6	1.2	<0.01
• Partial or complete amputation of limb(s)	25	5	475	95	493	98.6	7	1.4	<0.01
• Physical limb deformation resulting in mobility impairment	78	15.6	422	84.4	492	98.4	8	1.6	<0.01
• Psychological trauma	90	18	410	82	495	99	5	1	<0.01
• Sensory disability such as blindness or deafness	22	4.4	478	95.6	488	97.6	12	2.4	<0.05
Prognosis									
• No significant	56	11.2	444	88.8	478	95.6	22	4.4	<0.01
• Short-term	34	6.8	466	93.2	488	97.6	12	2.4	<0.05
• Long-term	76	15.2	424	84.8	469	93.8	31	6.2	<0.05
• Permanent	54	10.8	446	89.2	466	93.2	34	6.8	<0.05
• Convalescence	34	6.8	466	93.2	485	97	15	3	<0.05

Table 2: Showed that there was a statistically significant difference between the beginning and proficiency point scores in all participants’ results. The biggest notable difference was seen in the mothers’ definition of

unplanned accidents, understanding of physical types accidents, active supervision, psychological trauma as a disability and short-term prognosis.

Figure 3: The total knowledge distribution of the new and experienced mothers at the beginning and proficiency point of the education program.

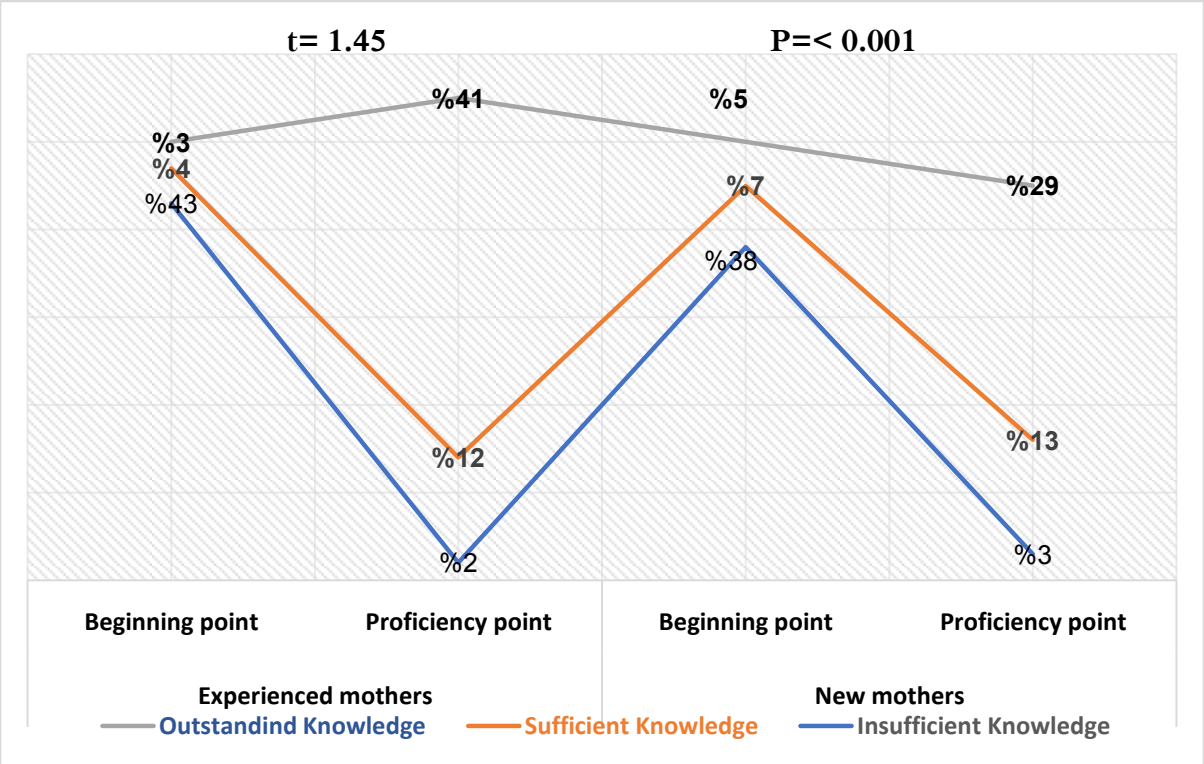

Figure 3: Shows a clear improvement in the amount of "sufficient" and "outstanding" results recorded in both groups. A high percentage in new mothers in comparison with the experienced mothers at the proficiency point of the education program $P<0.001$.

Table 3: Total disseminationof the mother's safety behavior in relation to possible accidents in different age groups after implementation of the education program N= (500).

Safety Behavior	Very useful		Useful		Not useful	
Do you think it is necessary that…	**N**	**%**	**N**	**N**	**%**	**N**
Newborn and infant stage						
- Baby should be put to sleep face-up.	295	59	183	36.6	22	4.4
- Side rails should be fitted to cribs or beds.	209	41.8	282	56.4	9	1.8
- Don't use mobiles or small toys.	300	61	185	37	15	3
- Do not leave a baby unattendedat home or in a car, alone in bed, with young siblings or pets.	321	64.2	172	34.4	7	1.4
- Avoid shaking or jiggling baby's head.	365	73	123	24.6	12	2.4
- Do not use jewelry.	322	64.4	156	31.2	22	4.4
- Do not use hot liquids or smoke cigarettes to avoid burns	318	63.6	178	35.6	4	0,8
-Avoid dry fruits and semisolid food due toincreased risk of choking and aspiration.	304	60.8	189	37.8	7	1.4
-Sunscreen should be used from six months.	290	58	201	40.2	9	1.8
- Limited screen time (iPads, TV, etc.).	359	71.8	134	26.8	7	1.4
- Immunizations to prevent infectious diseases.	372	74.4	122	24.4	6	1.2
- Use a walker when the child is learning to walk.	387	77.4	108	21.6	5	1
Toddler and preschool stage						
-Storing pan handles out of reach.	371	74.2	126	25.2	3	0.6
-Putting candles, hot food, lighters or matches, etc. out of children's reach.	394	78.8	104	20.8	2	0.4
-Covering outlets with plastic shields.	359	71.8	139	27.8	2	0.4
-Assessing temperature of bath water.	361	72.2	134	26.8	5	1
-Storing cleaning products, drugs, sharp objects and anything toxic in upper cupboards out of reach.	297	59.4	200	40	3	0.6
-Shouldn't play alone on balconies, streets or places with water.	201	40.2	197	39.4	4	0.8
-Putting carpets on slippery floors.	447	89.4	50	10	3	0.6
- Do not rest children on tables, chairs or other furniture.	442	88.4	56	11.2	2	0.4
-Consistent adult supervision.	396	79.2	98	19.6	6	1.2
-Furniture safety fixings.	405	81	91	18.2	4	0.8
-Dispose of old medicines and check label before giving drugs	406	81.2	85	17	9	1.8
-Electrical outlet safety covers.	404	80.8	89	17.8	7	1.4
-Don't allow child to go shopping or to a neighbor alone.	393	78.6	99	19.8	8	1.6
School age and adolescent stage						
-Wear a helmet when riding a bicycle.	340	68	156	31.2	4	0.8
-Wear a seat belt.	336	67.2	158	31.6	6	1.2
-Do not let your child play in or near the streets	314	62.8	179	35.8	7	1.4
-Store the contact details of a poisoning help center	292	58.4	199	39.8	9	1.8
-Learn to swim	303	60.6	189	37.8	8	1.6
-Keep guns away from children	298	59.6	190	38	12	2.4

Table 3: Reveals that most mothers shared the perspective that safety behaviors are a useful and viable way to prevent juvenile accidents throughout the childhood years. During infancy, high numbers of children were recorded to use a walker whilst learning to walk. Toddler and pre-school phases showed putting carpets on slippery floors came top and during school and adolescent phases, we see highest numbers in children using helmets when riding their bike.

Figure 4: Distribution of the total new and experienced mothers' safety behavior at beginning and proficiency points of the education program.

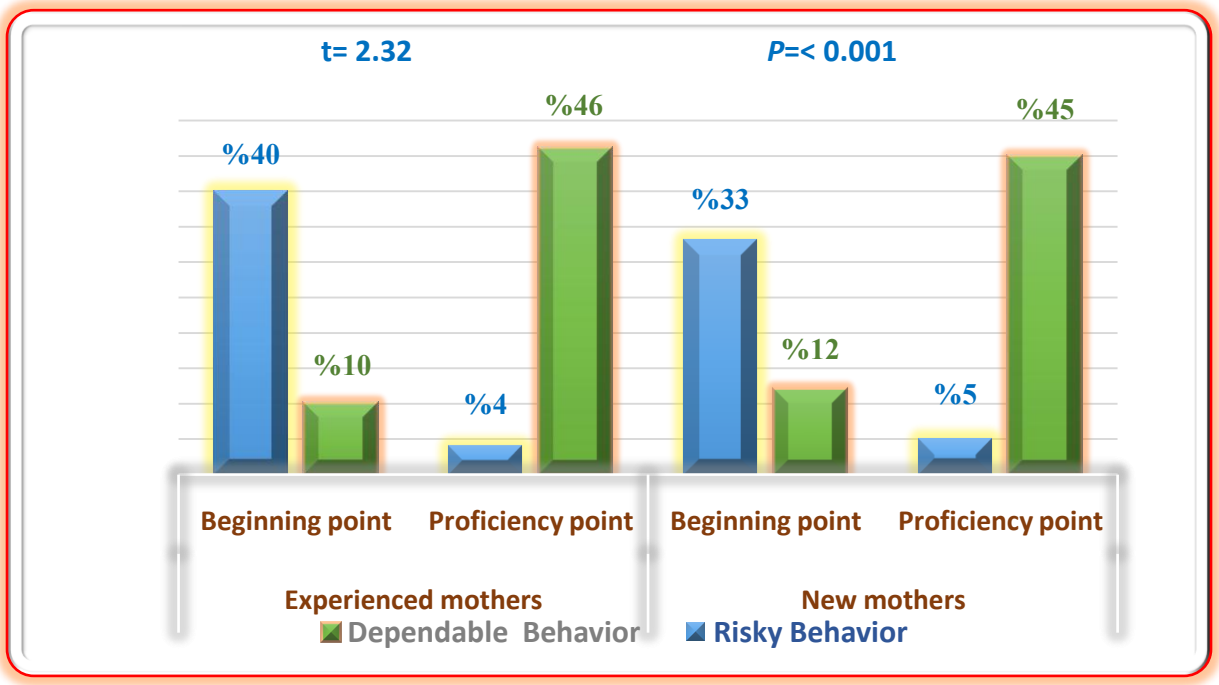

Figure 4: Shows a statistically significant improvement in the safe and dependable behavior of all participant mothers when comparing proficiency testing points within the education program $P<0.001$.

Table 4: Total dissemination of the mother's emergency interventions around burn, wound, bleeding and shock at starting point and proficient of the community education program (N=500).

Emergency intervention for burns	beginning point			proficiency point			P-Value
	Not done	Incorrect	Well done	Not done	Incorrect	Well done	
Take the child to safety.	201	199	100	3	12	485	<0.01
Cut clothes to remove themcarefully not to cause more pain/injury.	155	230	115	5	6	489	<0.01
Remove clothing from burned areas, unless it's stuck to the skin.	224	201	75	8	17	475	<0.01
Run cool (not cold) water on the burn until pain eases.	312	109	79	9	5	486	<0.01
Lightly apply gauze bandage or a clean, soft cloth or towel.	355	114	31	12	11	477	<0.05
Giveanalgesic to a child if they are awake such as ibuprofen or acetaminophen to control pain.	170	312	18	23	17	460	<0.05
Refrain from using ointments, creams, or other treatments on the burn as these can make it worse.	226	219	55	12	12	476	<0.05
Do not pop any blisters that form.	300	148	52	11	15	474	<0.05
Keep burned limbs raised.	259	207	34	7	9	484	<0.05
Seek Emergency helpin case of: large burn area, infections, if the face, hands, feet, joints, or genitals were burnt by fire, electrical shock, or chemicals.	288	156	56	8	6	486	<0.01
Emergency interventions for wounds, bleeding and shock							
Protective gloves should be worn.	318	112	70	0	25	475	<0.05
Remove clothing from the affected area.	324	99	77	4	12	484	<0.01
Rinse wound with water and apply pressure using a sterile gauze or a bandage.	389	11	100	3	22	475	<0.05
Clean wound with antiseptic solution in one direction.	423	67	10	5	11	484	<0.01
Press directly on the wound of the child with sterile gauze	387	89	24	7	14	479	<0.05
Raise the wound above heart level to reduce the amount of blood flow to the wound.	398	90	12	3	13	484	<0.01
If there's a foreign object in the wound, don't remove it. Instead, tap either side of the object to push the edges together.	299	89	112	6	13	481	<0.01
If the child is in shock, keep the child laid down and elevate their feet.	204	174	122	8	5	487	<0.01
Attempt to keep the head lower than heart level to promote circulation to the brain.	396	100	4	9	16	475	<0.01
Keep the child warm, whether with clothes or a blanket	329	123	48	6	3	489	<0.01
Seek emergency help if: cut is deep, displays persistent oozing/bleeding, if caused by an animal or human bite. Serious burns, electrical injuries, or puncture wounds.	231	256	13	1	12	487	<0.01

Table 4: Shows a statistically significant difference between the start and end proficiency point of all participants in regard to all types of emergency interventions. The highest proportion noted at the proficiency point was in the removal of clothes in case of burns and keeping the child warm with a blanket or clothing.

Table 5: Total dissemination of the mother's emergency interventionregarding choking and fracture at beginning and end proficiency point of the education program (N=500).

Emergency interventions for chocking	beginning point			proficiency point			P-Value
	Not done	Incorrect	Well done	Not done	Incorrect	Well done	
Ask child 'Are you choking?'	204	180	116	5	45	450	<0.05
If children can breathe, speak, or cough encourages them to cough and remove any obvious obstruction from their mouth.	456	40	4	7	65	428	<0.05
If not coughing, give five blows to the back	278	150	72	4	34	462	<0.05
Supporting the child's upper body with one hand. With the heel of your other hand give five sharp back blows between the child's shoulder blades.	321	112	67	7	12	481	<0.01
After each blow to the back, inspect his mouth for any apparent blockage.	345	23	132	4	7	489	<0.01
Do not wipe the mouth as this may push the object down the throat.	412	52	36	2	2	496	<0.01
Squeeze it out. If back blows fail to clear the obstruction, apply five abdominal thrusts.	410	76	14	7	3	490	<0.01
Stand behind the child putting your arms around the child's waist.	489	6	5	3	6	491	<0.01
Put one of your hands in a tight grip between the navel and down own their chests	432	60	8	2	1	497	<0.01
Using your other hand, grasp and pull your fist in and up sharply up to five times.	456	38	6	3	3	494	<0.01
Check their mouth again after each batch.	413	79	8	5	4	491	<0.01
Emergency interventions for fractures							
Repeat five strokes on the back and five abdominal strokes until help arrives, re-examining the mouth each time.	420	78	2	3	34	463	<0.05
Emergency interventions for fractures	430	65	5	5	12	483	<0.01
Remove clothing from the injured area.	461	29	10	4	56	440	<0.05
Apply a cloth-wrapped ice pack.	482	5	13	7	23	470	<0.05
Keep the injured limb in the same position you find it.	451	37	12	6	16	478	<0.05
If you have a simple splint, put it on the fractured part	471	4	25	8	18	474	<0.05
A splint holds the bone still. This helps protect it until the child is seen by the doctor.	412	16	72	9	37	454	<0.05
To make a splint, you can use a small board, stiff cardboard, or folded up newspapers.	423	65	12	4	29	467	<0.05
Secure splint with an elastic bandage or tape.	456	10	34	2	30	468	<0.05

Table 5: Proveda statistically significant change at the final proficiency point in the program for all participants in regard to knowledge on all types of emergency interventions for choking and fractures. The highest proportion of improvement noted here were the checking of the child's airways after every intervention and in applying a cloth-wrapped ice pack.

Table 6: Total dissemination of the mothers'emergency intervention knowledgearound cardiopulmonary resuscitation at start and proficiency points of the education program (N=500).

Emergency interventions for cardiopulmonary resuscitation	beginning point			proficiency point			P-Value
	Not done	Incorrect	Well done	Not done	Incorrect	Well done	
Assess the safety of the scene and ask the child if they are okay after tapping them.	201	211	88	4	8	488	<0.01
Flick the bottom of infants' feet to get a response.	234	231	35	7	14	479	<0.05
Seek emergency assistance.	216	232	52	9	17	474	<0.05
Lying child on back, Open the airway, with head tilt chin left and the head back slightly.	351	143	6	4	18	478	<0.05
Assess whether the child is breathing and by listening and watching carefully, for no more than 10 seconds, for signs of breathing.	241	231	28	6	19	475	<0.05
If the child is not breathing, give two rescue breaths Deliver 2 rescue breaths if the child or infant isn't breathing.	252	221	27	8	32	460	<0.05
Lift the chin, tilt the head and pinch the nose of the child shut. Then seal over the mouth with your mouth and breathe twice.	326	131	3	5	22	473	<0.05
Seal the mouth and nose of infants with your mouth then blow in for the chest to rise. Give two rescue breaths.	236	213	51	7	12	481	<0.01
Give CPR should the child or baby not respond to the rescue breaths.	325	123	52	9	15	476	<0.05
Kneel next to the child or infant.	345	123	32	2	16	482	<0.01
Push hard and fast.	235	224	41	4	17	479	<0.05
Put the heel of one hand on the center of the child chest, then put the heel of the other hand on top of the first hand, and lace your fingers together. Deliver thirteen chest compressions by two inches deep.	213	225	62	3	19	478	<0.05
In infants, use two fingers at 1.5 inches deep instead of the heel of the hand.	254	152	94	2	18	480	<0.01
Deliver two rescue breaths.	271	226	3	1	17	482	<0.01
Continue taking these steps until signs of life are seen, such as breath, or until an emergency service arrives.	291	167	42	5	21	474	<0.05

Table 6: Established a statistically significant difference in the knowledge level of all participants between program start and end proficiency point for all types of emergency intervention regarding cardiopulmonary resuscitation. The highest proportional increase was noted at the end proficiency point was in checking environment safety and tapping the child on the shoulder shouting "Are you OK?".

Table 7: Total dissemination of the mothers'emergency interventions around poisoning at start point and end proficiency point of the education program (N=500).

Emergency interventions for poisoning	beginning point			proficiency point			P-Value
	Not done	Incorrect	Well done	Not done	Incorrect	Well done	
Poison that is swallowed							
Take the poison from the child.	213	222	65	11	70	399	<0.05
Should the substance remain in the child's mouth, make them Spit it out or remove it.	241	236	23	13	95	392	<0.05
Retain whatever has been in the child's mouth for the emergency services.	251	193	56	12	103	385	<0.05
Do not force the child to be sick.	256	210	34	9	113	378	<0.05
Poison on the skin							
Should the child spill a chemical on their clothing, remove them if they are contaminated.	311	166	23	12	91	397	<0.05
lukewarm (not hot) water to rinse the skin	351	104	45	14	37	449	<0.01
If the area shows signs of burning or irritation, continue rinsing for at least 15 minutes, regardless of the protests of the child.	321	156	23	16	86	398	<0.05
Refrain from putting ointments, creams, or grease on the affected area.	391	75	34	17	46	437	<0.01
Poison in the eyes							
Flush the eye of the child by holding the eyelid open and pouring a small, steady stream of lukewarm (not hot) water into the inner corner, close to the nose.	255	191	54	18	102	380	<0.05
Allow the water to run over the eye to the opposite corner to flush the eye well.	243	234	23	19	82	399	<0.05
Help from another adult may be required in terms of holding your child while you rinse the eye.	321	145	34	22	66	412	<0.01
Wrap your child tightly in a towel and hold them under one arm. Keep flushing the eye for 15 minutes.	345	120	35	12	78	410	<0.01
eye drops, or ointment does not use if only instructed by the poison center.	365	70	65	32	57	411	<0.01
Poison inhalation							
Should your child breathe in fumes or gases, get him or her out into fresh air right away.	342	135	23	15	82	403	<0.01
Phone Poison Control.	256	210	34	12	80	408	<0.01

Table 7: Established a statistically significant difference between the beginning and end proficiency points of all participants in all types of emergency intervention regarding poisoning, with the most notable improvement being in not applying ointments, creams or grease on a chemical burn.

Figure 5: Total dissemination of the new and experienced mothers regarding emergency interventions at beginning and end proficiency points of the education program.

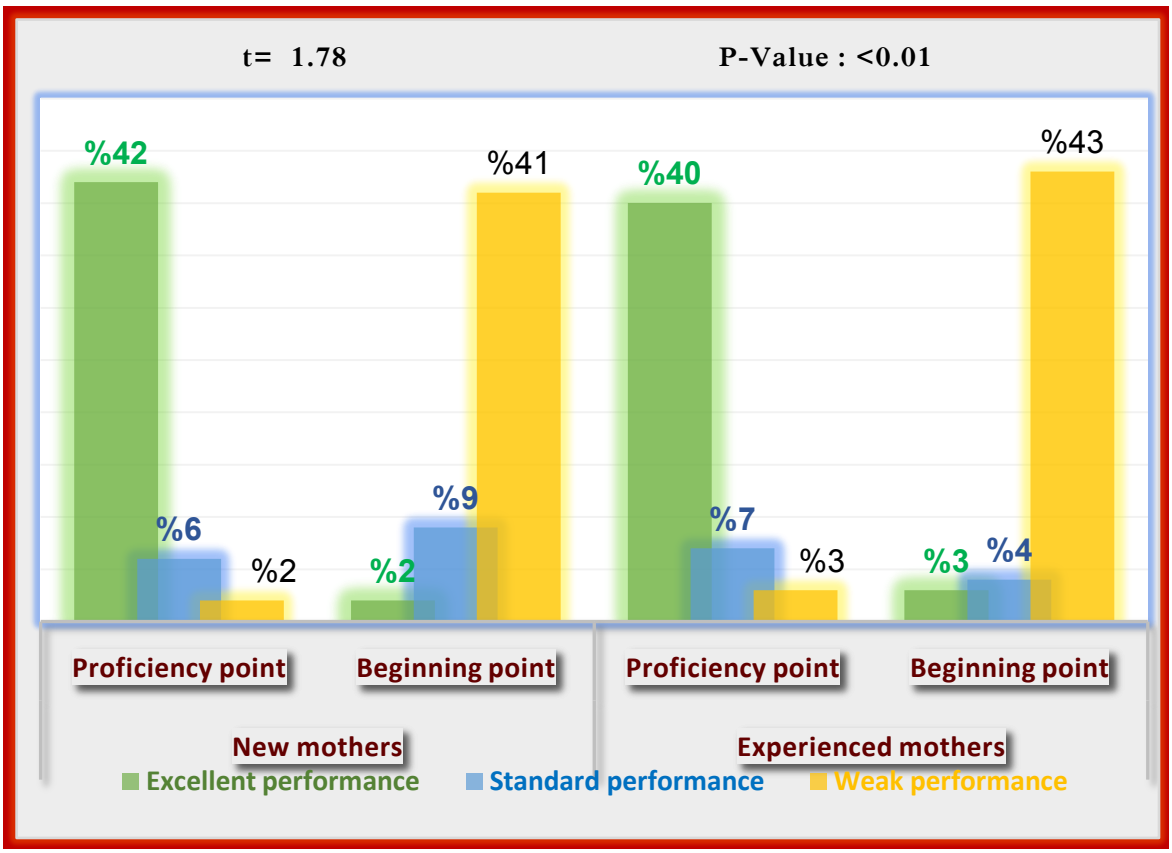

Figure 5: Supports the earlier statistically significant difference between all participant mothers' performances between the beginning and end proficiency points of the education program $P<0.01$. A large improvement in "excellent" performance was recorded in both groups of mothers following completion of the program.

Table 8: The relation between the mothers' socio-demographic characteristics and their knowledge, safety behavior and emergency intervention at end proficiency point of the education program.

Socio-demographic characteristics	Knowledge N (%)				Safety Behavior N (%)			Emergency Intervention N (%)			
	Out standing	Sufficient	Insufficient	X2(P-value)	Secure	Risky	X2(P-value)	Excellent	Standard	Weak	X2(P-value)
Age											
20-28	179(35.8)	81(16.2)	10(2)	7.45(<0.000)	250(50	20(4)	8.56(<0 .000)	215(43)	40(8)	15(3)	3.01(<0.000)
29-36	121(24,2)	35(7)	10(2)		154(30.8)	12(2.4)		141(28.2)	18(3.6)	7(1.4)	
37-42	50(10)	9(1.8)	5(1)		51(10.2)	13(2.6)		54(10.8)	7(1.4)	3(0.6)	
Education levels											
Primary	3(0.6)	3(0.6)	4(0.8)	9.01(<0.000)	8(1.6)	2(0.4)	9.21(<0 .000)	5(1)	3(0.6)	2(0.4)	9.22(<0.000)
Preparatory	29(5.8)	14(2.8)	6(1.2)		46(9.2)	3(0.6)		40(8)	6(1.2)	3(0.6)	
Secondary	63(12.6)	3(0.6)	8(1.6)		62(12.4)	12(2.4)		60(12)	8(1.6)	6(1.2)	
University	255(51)	105(21)	7(1.4)		339(67.8)	28(5.6)		305(61)	48(9.6)	14(2.8)	
Marital status											
Married	288(57.6)	103(20.6)	10(2)	23.01(>0.104)	358(71.6)	42(8.4)	18.12(> 0.103)	322(80.5)	55(11)	23(4.6)	20.23(>0.263)
Divorced	21(4.2)	17(3.4)	11(2.2)		46(9.2)	3(0.6)		45(9)	3(0.6)	1(0.2)	
Widow	41(8.2)	5(1)	4(0.8)		50(10)	1(0.2)		48(9.6)	2(0.4)	1(0.2)	
Job											
Employed	178(36.6)	113(22.6)	23(4.6)	5.19(<0.000)	281(56.2)	33(6.6)	4.90(<0 .000)	247(49.4)	53(10.6)	14(2.8)	11.01(<0.000)
Unemployed	172(34.4)	12(2.4)	2(0.4)		174(34.8)	12(2.4)		163(32.6)	12(2.4)	11(2.2)	
Birth order											
First	139(27.8)	66(13.2)	9(4.2)	6.17(<0.000)	187(37.4)	27(5.4)	5.09(<0 .000)	162(32.4)	33(6.6)	19(3.8)	10.01(<0.000)
Second	145(29)	29(5.8)	8(1.6)		174(34.8)	8(1.6)		154(30.8)	25(5)	3(0.6)	
Third	19(3.8)	14(2.8)	5(1)		35(7)	3(0.6)		35(7)	2(0.4)	1(0.2)	
Alone	47(9.4)	16(3.2)	3(0.6)		59(11.8)	7(1.4)		59(11.8)	5(1)	2(0.4)	
Income											
Suitable	138(27.6)	23(4.6)	4(0.8)	6.15(<0.000)	153(30.6)	12(2.4)	8.12(<0 .000)	157(31.4)	2(0.4)	6(1.2)	9.01(<0.000)
Too little	212(42.4)	102(20.4)	21(4.2)		302(60.4)	33(6.6)		253(50.6)	63(12.6)	19(3.8)	
Residence											
Rural	152(30.4)	7(1.4)	1(0.2)	21.11(>0.102)	149(29.8)	11(2.4)	19.26(> 0.107)	137(27.4)	10(2)	13(2.6)	21.12(>0.353)
Urban	198(39.6)	118(23.6)	24(4.8)		306(61.2)	34(6.8)		273(54.6)	55(11)	12(2.4)	

Table 8: Showed a statistically significant correlation between a mother's knowledge, safety behavior and emergency interventions in relation to their age, education level, job and birth order at P<0.000.

Table 9: The correlation between the mother's knowledge, safety behaviors and emergency intervention at end proficiency point of the education program

Variables	knowledge	Safety behavior	Emergency intervention
Knowledge	-------	0.421(<0.05**)	0.762(<0.01**)
Safety behavior		------	0.461(<0.01**)
Emergency intervention			------

Correlation is significant

Table 9: Confirms a positive correlation was found between knowledge and safety behavior, knowledge and emergency intervention, as well as safety behavior and emergency intervention scores by using Pearson's correlation test.

IV. Discussion:

When looking at sociodemographic characteristics, over two-thirds of new mothers were aged between 20-28 years, whilst more than half of experienced mothers were aged between 29-36 years. More than two-thirds of all participant mothers had achieved a university education. Concerning marital status, over two-thirds of all participants were married. We can see more than half of the new mothers were unemployed, whilst over three-quarters of experienced mothers were employed.

This study focused on the participation of two hundred and thirty mothers **(Younesian, et al., 2016)**, the mean age of the participants was 29.4 ± 5.2 years, with 97% of the mothers being married. Thirty percent of the group had finished high school education, whilst half of them were homemakers. Thirteen percent of the study group worked outside the home for at least 8 hours daily.

Moreover, this study was also repeated by **(Akturk&Erci., 2016)**, who found the mean age was 30.11 ± 5.8 years among mothers in that participant group. Results of **(Ahmed, et al., 2015)**, study established that most of the participants were not working and were mostly educated to primary or secondary levels. Similarly, the study performed by **(Elhalik et al., 2018)**, found that participants had a higher education level (93.4%). According to **(Ala'a et al., 2018)**, the age of 40% of participants ranged between 31-40 years old, whereas 31.5% ranged between 20-30 years of age. The study by **(Abubakar et al., 2018)**, ascertained a mean age of participants as being 29.6 ± 9.7 years. Nearly 64.6% of this group reported having a formal education, out of which 27% reported completing up to tertiary education.

The current study established that the past accidents of the participant's children varied, with new mothers reporting 33 choking incidences and 23 falls, whilst experienced mothers reported that 17 children had had a fracture and a further 17 choking incidents. This supports the study by (18) who found that the prevalence of choking in infants younger than 2 was 19%. Also **(Ahmed., 2016)** calculated the rate of home accidents involving burns and falls among children under five was 13.3%. While **(Sackitey., 2018)**, discovered that burns (66.7%) and lacerations (63.3%) were reported as the most common childhood injuries amongst the respondents. However, **(Abubakar., 2018)**, reported poisoning as the most commonly reported domestic accident (34.4%) followed by falls (17.5%) in second place.

This current study showed a statistically significant positive difference between the self-reporting of the participants at the start and the end proficiency point in the program for all participants. Great improvements can be seen especially in the areas of defining unplanned accidents, knowledge of types of physical accidents, active supervision and psychological trauma, disability, and short-term prognosis.

The study carried out by **(Silva, et al., 2016)**, reported that after the program intervention, there was a significant difference in the self-answered questions ($p<0.05$), especially in questions relating to knowledge on fall prevention, drowning ($p=<0.000$), and intoxication ($p<0.001$).

This study also showed a clear improvement insufficient and outstanding knowledge changes recorded in both new and experienced mothers at the proficiency point in the program $P<0.001$. These findings support the study performed by **(Kumari & Sharma., 2018)**, who reported a significant difference between the results of the pre-and post-test knowledge scores of participants.

In the experimental group, all participants were found to have a good level of knowledge. Likewise, **(Carlsson, et al., 2016)**, the study showed the program intervention had a positive effect on mothers' awareness of the dangers for children in the home environment. **(Megahed, et al., 2016)**, also reported a significant

improvement in participants' knowledge relating to household accidents after the program's intervention. Furthermore, another study carried out by **(Lafta, et al., 2014)**, found that older mothers and those who have several children often have higher knowledge levels than younger mothers. A group of mothers who had experienced accidents with their children previously also showed higher knowledge levels.

We can see that this study revealed a clear improvement in the safety behavior of all participants at the end proficiency point in the education program. These results lie in accordance with those of **(EbadiFardazar, et al., 2016)**, who reported a statistically significant difference between the mean scores of all types of preventative techniques and behaviors in the home regarding accidents with children under 5 years old before and after the program's intervention ($P<0.05$). **(Sackitey., 2018)**, the study discovered that participants showed a positive interest in the prevention of juvenile injury in the home also affected improvement rates. In **(Akturk, &Erci., 2016)**, study results, it was reported that potentially dangerous behaviors were more common amongst the mothers of children who had previously experienced an accident at home ($p<0.05$). The researcher believes that the response of new and old mothers to preventive behavior to prevent accidents of children of different ages group had a positive effect after implementing the program, especially for mothers to their children who had previously had accidents.

The difference in knowledge between the two groups of mothers at the end of this study showed a high percentage of improvement could be seen in both groups at the end proficiency point of the education program, which also corresponds to **(Megahed, et al., 2016),** the study which showed significant post-study improvement in mothers' practices with safeguarding against juvenile accidents.

Positive correlations were found between gathered knowledge and safety behavior, knowledge and emergency intervention knowledge, as well as safety behavior and emergency intervention scores after running Pearson's correlation test. The study led by **(Khodaveisi, et al., 2020),** stated that after the intervention program there were significant differences among the two groups of participants concerning contextual knowledge and preventive practices related to accidents at home ($p <0.001$).

A statistically significant association was also found between participants' sociodemographic knowledge, safety behavior and emergency intervention knowledge relative to age, education, job and birth order at $P<0.000$. These results support**(Akturk&Erci., 2016),**findings which discovered a significant correlation between experiencing a home accident, mother's age, education level, number of children, family size, and total family income ($p<0.05$).

The study undertaken by **(Sackitey., 2018),** reported that except for the education level and marital status of the mother, all other demographic markers showed an insignificant relationship in regard to the prevention of juvenile accidents. Whereas **(Megahed,et al., 2016),**established a statistically significant higher proportion of "satisfactory" level knowledge among highly educated participants as well as those with moderate or high socioeconomic levels.

Another significant positive correlation was found between the mothers' procedures, knowledge and attitudes regarding their learning and socioeconomic level when related to accidents in the home. The study conducted by **(Santagati,et al., 2016),**corresponds, finding roughly 70% of respondents were attentive in their safeguarding measures in order to prevent childhood injuries and that this knowledge seemed to be more notable in older parents and those with a higher education.

The researcher's opinion supports that demographic factors, especially family size and family income, are among the factors that have had an impact on the occurrence of accidents for children, while the high level of education and awareness of mothers, whether they are new or old, has a positive impact on learning methods of dealing with accidents for children and adopting preventive behavior to prevent accidents significantly.

The author opinion that Egypt can use the results of this study to further reduce their annual child mortality and injury rates by creating more programs like this to help prevent the occurrence of childhood injury and by teaching emergency interventions for the most common juvenile accidents.

V. Conclusion:

- Juvenile accidents remain a large problem and continue to jeopardize the lives of children. 71% of the children reported by the participant mothers were exposed to various types of accidents. The most common of these were reported to be choking, fractures and falls.
- The educational program in the study has made a clear and tangible improvement in all of the participants' knowledge, safety behavior and emergency intervention understanding of varying potential childhood accidents.
- A statistical significance was found between the achievement level of both groups of mothers after participating in the education program in regard to their sociodemographic characteristics.

VI. Recommendations and further research:

- Recurring emergency intervention training programs to be conducted in Banha city healthcare centers for children's caregivers to reduce childhood mortality and accident morbidity.
- Creation and roll-out of health education programs for parents, with a special focus on new parents, in regard to preventing juvenile accidents.
- Increasing public awareness of juvenile accidents through the use of mass and social media.
- Conducting more extensive qualitative studies to extract important informative knowledgeabout incidents among mothers to know the current need for preventative safety behavior measures.
- These findings should be considered to establish appropriate educational interventions to lower the occurrence of accidents in the home, especially among preschool aged children.
- Consistently scheduled emergency intervention training programs should be conducted at healthcare centers in and around Banha city for parents to further help lower the early mortality rates in childhood accidents.
- These findings call for urgent attention and active measures to be put in place to prevent further juvenile accidents.This could be placed in the school curriculathereby raising awareness amongst children themselves, thereby empowering them to make safer choices.
- Establish a variety of educational awareness programs for newlywed parents to aid them in helping their children in terms of physical and psychological care.

VII. REFERENCES:

[1]. Abubakar, S., Ahmed, A., Farouk, Z., Gadanya, M., &Jimoh, M. L. (2018). Prevalence and pattern of unintentional domestic accidents and trauma amongst children attending public hospitals in Kano, Nigeria. *Sahel Medical Journal*, *21*(1), 6.DOI: 10.4103/1118-8561.232787.

[2]. Ahmed, W. A. M. (2016). Home accidents and associated factors among children less than five years old in Sudan: a descriptive study. *Gulf medical journal*, *5*(1), 10-15.

[3]. Ahmed, W. A. M., Abdalla, S. M., Mohamed, E. Y., Osman, O. B., &Alnsairat, H. N. N. (2015). Home Accidents Rate Among Under-Five Children and Predisposing Factors in Khartoum. *International Journal of Preventive Medicine Research*, *1*(5), 267-269.

[4]. Akturk, Ü., &Erci, B. (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*, *7*(18), 142-153.

[5]. Alrimawi, I., Watson, M. C., Hall, C., &Saifan, A. R. (2019). Preventing Unintentional Injuries to Children Under 5 in Their Homes: Palestinian Mothers' Perspectives. *Sage open*, *9*(1), 2158244018824483.https://doi.org/10.1177/2158244018824483

[6]. Ala'a, A. S., Sabor, S., &Aldubai, S. A. (2018). Knowledge and practice of first aid among parents attending primary health care centers in Madinah City, Saudi Arabia, A cross sectional study. *Journal of family medicine and primary care*, *7*(2), 380.doi: 10.4103/jfmpc.jfmpc_64_18.

[7]. Bánfai, B., Deutsch, K., Pék, E., Radnai, B., &Betlehem, J. (2015). Accident prevention and first aid knowledge among preschool children's parents. *Kontakt*, *17*(1), e42-e47.https://doi.org/10.1016/j.kontakt.2015.01.001

[8]. Carlsson, A., Dykes, A. K., Jansson, A., &Bramhagen, A. C. (2016). Mothers' awareness towards child injuries and injury prevention at home: an intervention study. *BMC research notes*, *9*(1), 223.https://doi.org/10.1186/s13104-016-2031-5

[9]. Cevik, C., Selcuk, K. T., Kaya, C., &Bayırlı, R. B. (2017). Prevalence of home accidents among 0-6-year old children mothers' levels of displaying precaution-taking behaviors.https://doi.org/10,24896 / jrmds. 20175416.

[10]. EbadiFardazar, F., Mansori, K., Solhi, M., Hashemi, S. S., Ayubi, E., KhosraviShadmani, F., &Khazaei, S. (2016). A cross-sectional study for determinations of prevention behaviors of domestic accidents in mothers with children less than 5-year. *International Journal of Pediatrics*, *4*(5), 1679-1685.

[11]. EbadiFardazar, F., Solhi, M., Mansori, K., Mansouri Hanis, S., & Hashemi, S. S. (2016). Assessment the effect of educational intervention on preventive behaviors of home accidents in mothers with children less than 5-year based on Protection Motivation Theory (PMT). *International Journal of Pediatrics*, *4*(7), 2051-2059.doi: 10.22038/ijp.2016.6751

[12]. Elhalik, M., El-Atawi, K., & Mahfouz, R. (2018). Assessment of mother's knowledge on importance and need for Child Car Safety Seat in UAE. *Journal Pediatric Neonatal Care*, *8*(5), 226-230.DOI: 10.15406/jpnc.2018.08.00346

[13]. Halawa, E. F., Barakat, A., Rizk, H. I. I., & Moawad, E. M. I. (2015). Epidemiology of non-fatal injuries among Egyptian children: a community-based cross-sectional survey. *BMC public health*, *15*(1), 1248.https://doi.org/10.1186/s12889-015-2613-5.

[14]. Hyder, A. A., Sugerman, D. E., Puvanachandra, P., Razzak, J., El-Sayed, H., Isaza, A., ... &Peden, M. (2009). Global childhood unintentional injury surveillance in four cities in developing countries: a pilot study. Bulletin of the World Health Organization, 87, 345-352.

[15]. Kumari, P., & Sharma, S. (2018). Knowledge of Mothers about the Risk of Domestic Accident among Toddlers: Effectiveness of Strategy for Teaching about Home Safety. *Research & Reviews: Journal of Medicine*, *7*(3), 1-7.

[16]. Lafta, R. K., Al-Shatari, S. A., &Abass, S. (2014). Mothers' knowledge of domestic accident prevention involving children in Baghdad City. *Qatar medical journal*, *2013*(2), 17.

[17]. Megahed, M. A., Khalil, N. A., Ibrahem, R. A., & El Disoki, R. S. (2016). Knowledge, attitude and practice of rural mothers towards home injuries among children under 5 years of age in Menouf District-Menoufia Governorate, Egypt. *Menoufia Medical Journal*, *29*(4), 1033.DOI: 10.4103/1110-2098.202506

[18]. Mojadam, M., &Khafaie, M. A. (2018). A Survey on the Prevalence of Choking in Children under Two Years Old and Awareness of Mothers Referring to Health Centers in Ahvaz City. *Journal of Disaster and Emergency Research*, *1*(2), 85-91.

[19]. Morrongiello, B. A., Klemencic, N., & Corbett, M. (2008). Interactions between child behavior patterns and parent supervision: implications for children's risk of unintentional injury. *Child development*, *79*(3), 627-638.https://doi.org/10.1111/j.1467-8624.2008.01147.x

[20]. Khodaveisi, M., Amini, R., Kalvandi, N., &Tapak, L. (2020). Effect of Education on Preventive Home Accident Practices by Mothers with Toddlers: Using the Theory of Planned Behavior, 22 January 2020, PREPRINT (Version 1) available at Research Square [https://doi.org/10.21203/rs.2.21578/v1+]

[21]. Sackitey, G. L. (2018). Knowledge, attitude and perception on prevention of home accidents among mothers who came to the pediatrics Department of the Korle-Bu Teaching Hospital. Journal Health Education Research Dev, 6(242), 2.

[22]. Santagati, G., Vezzosi, L., &Angelillo, I. F. (2016). Unintentional injuries in children up to six years of age and related parental knowledge, attitudes, and behaviors in Italy. The Journal of pediatrics, 177, 267-272.https://doi.org/10.1016/j.jpeds.2016.06.083.

[23]. Silva, E. C. S., de Fátima Fernandes, M. N., Sá, M. C. N., de Souza, L. M., de Araújo Gordon, A. S., de Jesus Costa, A. C. P., ... & do Amaral Gubert, F. (2016). The effect of educational intervention regarding the knowledge of mothers on prevention of accidents in childhood. The open nursing journal, 10, 113.doi: 10.2174/1874434601610010113.

[24]. World health organization: 2020

[25]. Younesian, S., Mahfoozpour, S., Shad, E. G., Kariman, H., &Hatamabadi, H. R. (2016). Unintentional home injury prevention in preschool children; a study of contributing factors. Emergency, 4(2), 72.