Effect of Educational Program on Nursery School Teachers' Knowledge and Practices Related to Selected First Aid on Children

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Abstract

Background: Children spend most of their time in school, where they are susceptible to a range of minor injuries that might affect their health now and in the future. Aim: To evaluate the effect of educational program on nursery school teachers' knowledge and practices related to selected first aid on children at Sohag city. Research design: A pre/post quasi-experimental research design was used in this study. Sample: A convenient sample of 43 nursery school teachers, from governmental nursery schools. Setting: The selected nursery schools represented all geographic areas of Sohag city. Tools: Data collection was gathered by following :(Tool I):It consisted of two parts: Part (1): Socio- demographic data on teachers such as age, marital status, qualifications, years of experience and previous training courses. Part (2): Nursery school teachers' knowledge about first aid. (Tool II) An observational checklist: It was designed by the researcher to evaluate first-aid measures around wounds, suffocation, convulsions, choking, poisoning, fractures, burning, epistaxis and fainting...etc. Results: Show that total practices was 19.046±5.4943 at pre-program and increased to be 50.7442±5.9884 post-program, total knowledge was 16.3% at pre-program and increased to be 81.4% postprogram. Conclusion: The current study concluded that there was an increase in the mean scores of teachers' knowledge and practices after implementation of the program about first aid. Recommendation The : study suggested that the first aid research be widely implemented for the teachers of nursery schools throughout Sohag City.

Keywords: Educational Program, First aid, Knowledge and Practices, Nursery School, Teachers.

Introduction

The school is a setting where a variety of activities are created, including instruction, recess, play, and socialization, making it a good location for accidents to occur. In addition to being educators, teachers also serve as mentors and role models for their pupils. A classroom or school is a dynamic environment where accidents and medical problems can happen at any time (Özkal, 2020).

Children's small bodies, limited airways, and more sensitive skin layer, along with certain of their behavioral and developmental traits and a lack of understanding of the dangers of some environmental hazards, put them at risk for harm. Early childhood education Teachers must be well-prepared to handle any serious child injury or incident in a timely manner because they are the first line of defense and are in charge of their safety, which complements the responsibility of parents(**Abdul-Lateef, 2022**).

Teachers are frequently asked to handle emergencies in schools. They are the only grownups capable of making judgments and acting appropriately in any circumstance. This demonstrates how crucial it is for educators to have first aid training. In order to guarantee a speedy recovery with the least amount of discomfort and disruption to students and the school, nursery schools must determine when a child has to be sent to a medical facility and take the right action (Hosapatna et al., 2019).

When a victim experiences an unexpected accident or illness, first aid is an instant intervention; the earlier the response, the lower the morbidity and fatality rate. It usually consists of a set of basic lifesaving methods that teachers have been trained in using very little equipment. Emergency situations can occur anywhere and at any time, including on the street, at home, or even at school, kindergarten, or nursery. Young children are particularly vulnerable to unintentional injuries or unexpected illnesses because they spend the majority of their days in these settings, which are the best places to look after them when their parents are not there (Abdul-Lateef, 2022).

Significance of the study

In Egypt, there are little researches about first aid knowledge and practices among nursery schools teachers. Also, the researcher observed that teachers had poor knowledge and unfavorable practices in dealing with accidents and injuries in nursery school. So, the application of a program for nursery school teachers is highly required to improve knowledge

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and practices of teachers related to selected first aid on children (Neama et al., 2017).

Aim of the study

The purpose of this study is to evaluate the effect of educational program on nursery school teachers' knowledge and practices related to selected first aid on children at Sohag city through:

- Assess nursery school teachers' knowledge and practices related to selected first aid on children.
- Evaluate the effect of educational program on nursery school teachers' knowledge and practices related to selected first aid on children after program implementation.

Research hypothesis

• There was improvement in nursery school teachers' knowledge and practices after implementation of the educational program regarding first aid techniques.

Subjects and Method

The study will be portrayed under the four main designs as following:

I- Technical design.

- **II-** Operational design.
- **III-** Administration design.
- **IV-** Statistical design.

Technical design

The technical design includes research design, setting, subject and tools of data collection.

Research design

The investigation was conducted using a quasiexperimental design.

Research settings

The study was conducted at the government nursery school teachers **includes:**

(Taha Husain School /Mohamed Farid Kindergarten School / Al-molhaka School / Al-Shuhadaa Primary School /Al - Rashid kindergarten School / Abdullah Wahaby kindergarten School / Al-Sadat kindergarten School)

Subjects

Convenient sample of all nursery school teachers(43), who were working at the previously mentioned settings .

Tools of data collection

Data collection was gathered by using the following tools:

(Tool I): A structured Interviewing Questionnaire Sheet: The researcher created it to evaluate nursery school teachers' knowledge instructors' understanding of specific child first aid techniques based on a review of scientific literature. It was composed of two sections and was written in Arabic to collect data:

Part (1): Socio- demographic data on teachers, such as: age, marital status, qualifications, years of experience and previous training courses about first aid.

Part (2): Nursery school teachers' knowledge about first aid which, includes the Meaning of first aid, consisting of : first aid kits and first aid measures around wounds, Suffocation, convulsion, choking, poisoning, fracture, burning, tooth injury, epistaxis and fainting...etc.

The total knowledge scores will be classified as: The correct answer was given (1) scores; the incorrect answer was given (0).

- ✤ Unsatisfactory if the result was 60%.
- ✤ Satisfactory if the result was 60% or more

Tool (II) An observational checklist: It was designed by the researcher to evaluate first-aid measures around wounds, suffocation, convulsions, choking, poisoning, fractures, burning, epistaxis and fainting...etc.

The total level of nursery school teachers' practices will be categorized as: A score (1) was given if the action was done completely, and a score (0) was given if the action was not done.

- Inadequate practice (0 > 60%).
- Adequate practice ($\geq 60\%$).

Operational design

Operational design was included: preparatory phase, content validity, reliability, and pilot study.

Preparatory phase

The researcher evaluated the current and international related literature utilizing books, periodicals, journals, magazines, and the internet in order to gain a better understanding of the subject and the tool design process.

Pilot study

After developing the tools, a pilot study was conducted on 10% (6) of the teachers in Sohag City nursery schools. A pilot study was conducted to test clarity, and visibility as well as to determine the time required for filling the data sheets.

According to the results of the pilot, the needed modifications, omissions, and/or additions for some items were done

Validity

Five panel experts in pediatric nursing evaluated the study's tools to assess their content validity. The tools were modified in accordance with the panel's assessment of the items' order, appropriateness, and sentence clarity.

Reliability

Internal consistency of reliability of the tools was tested statistically using Cronbach's alpha and it was 0.88 for knowledge questionnaire and 0.92 for practices observation checklist.

Administrative design

Formal approval was obtained via an official letter issued by the Dean of the Faculty of Nursing at Sohag University. The letter was addressed to the directors of the mentioned settings, explaining the study's purpose and expected outcomes to facilitate data collection for the research.

Ethical considerations

- The research proposal was approved by the Ethical Committee in the Faculty of Nursing at Sohag University.
- An official permission was obtained through an issued letter from the government of nursery school teachers in Sohag City.
- A written consent form was taken from nursery school teachers included in the study.
- The objective of the study was explained to the nursery school teachers at the beginning before starting the study.
- The researcher informed the nursery school teachers were that the study was voluntary; they were given a right to refuse to participate and had the right to withdraw from the study at any time without giving any reason.
- They assured that their information was confidential and was used for research purposes only.

Field work

Data were collected through six months from beginning of May 2024 to the end of October 2024.

Educational program

Assessment phase

Firstly, according to the number of nursery school teachers accessible during the morning (9) am to (12) pm, the researcher was present at the aforementioned location to gather data using the aforementioned instruments. Prior to data collection, the researcher conducted interviews with the nursery

school teachers, explaining the purpose of the study and obtaining their oral consent to participate.

Implementation phase

- The researcher conducted interviews with the nursery school teachers to assessment knowledge and practice about their first aid. All teachers were given the questionnaire sheet based on the number of instances available (pre-test for tool I and II), and the researcher was present at all times when they filled it out. Filling the questionnaire took a time from 20-30 minutes.
- The training sessions' schedule and methodology were planned to accommodate the teachers' schedules at each nursery school. Each group received roughly (sixteen) hours of program implementation, including (30) minutes hour for orientation, (30) minutes for the pretest, and (fifteen) for program sessions.
- The program was implemented for each group with five hours of theoretical contents and ten hours of practice. There were twelve sessions for each group, lasting between one to two hours for each, and two sessions per day were given.
- The nursery school teachers were split up into three groups, each group contained from 6 to 8 teachers according to number of teachers in each school. The teachers were interviewed twice a week from 9 am to 12 pm to cover all the first aid information.
- Lectures, discussions, posters, pamphlets, easyto-understand movies, and photographs were the teaching methods were employed during the program sessions.
- To aid in their education and training, first aid operations were carried out on the doll using actual first aid tools and materials.
- A booklet was given to all teachers involved in the study as a guide for them.

Evaluation phase

The post-test was implemented after six months later to evaluate the program's effects on the teachers' first aid knowledge and skills.

Statistical analysis

Data entry was done using compatible personal computer SPSS-26. The content of each tool was analyzed, categorized and then coded. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables and means and standard deviations for quantitative variables. Quantitative continuous data were compared by using a student t-test in case of comparisons between the mean scores of the two studied groups. Qualitative studied variables were compared using Chi-square test. Statistical significance used at P value <0.05.

Results

Table (1): Shows that 69.8% of the studied teacherswere age 25 to less than 35 , 67.4% were married ,60.5% had pre-school children, 44.2% hadlicense,51.2% had 5 to 10 years of experience,79.1% of them didn't attended any training coursesrelated to first aid for children and 20.9 % attendedone course for less than one week.

Figure (1): Demonstrates that 16.3% of kindergarten had satisfactory knowledge levels regarding first aid at pre-program and increased to 81.4% post-program.

Table (2): Shows that the mean score of total practices was 19.046 ± 5.4943 at pre-program and increased to be 50.7442 ± 5 . post-program, and there

was a statistically significant difference between preand post-program practices regarding first aid dimensions among kindergarten teachers at (p=0.000).

Figure (2): Demonstrates that 16.3% of kindergarten teachers had adequate practices levels regarding first aids at pre-program and increased to be 74.4% post-program

Table (3): Shows there was statistically significant relation between the studied kindergarten teachers' knowledge and practices at pre-program and post-program with academic qualifications, years of experience and attended any training courses related to first aid for children at (P<0.05)

Table (4) Reveals that there was statistically significant correlation between the studied kindergarten teachers' knowledge and practices among pre-and post-program at (P=0.00).

Results

Table (1): Distribution	of demographic data	of the studied kinderga	rten teachers (n=43).
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Items	No	%
Age in years:-		
20 to less than 25	7	16.3
25 to less than 35	30	69.8
35 and More	6	14.0
Mean±SD	34.861	±6.8362
Marital status:-		
Single	8	18.6
Married	29	67.4
Divorced	6	14.0
Do you have pre-school children:-		
Yes	26	60.5
No	17	39.5
Academic qualifications:-		
Bachelor's	8	18.6
License	19	44.2
Diploma	12	27.9
Master's /PHD	4	9.3
Years of experience:-		
Less than 5 years	15	34.9
5 to 10 years	22	51.2
More than 10 years	6	13.9
Training courses:-		
Have you ever attended any training courses rela	ted to first aid for children:	-
Yes	9	20.9
No	34	79.1
If the answer is yes, how many courses are there?		
One	9	20.9
C- Duration of course:-		
Less than one week	9	20.9

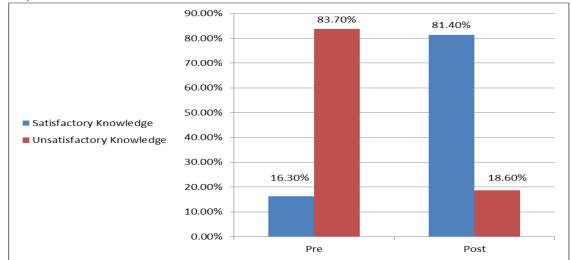
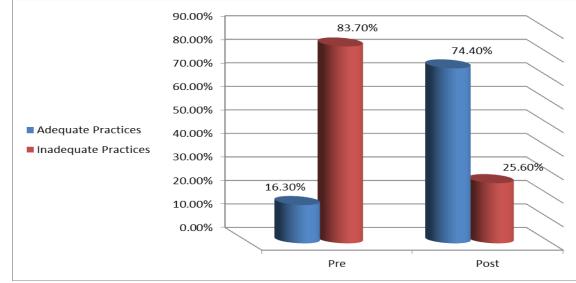


Figure (1): Distribution of the studied kindergarten teachers knowledge regarding first aids (n=43).

Table (2): Comparison between the pre and post- program practices regarding first aids dimensions among kindergarten teachers (n=43).

Dimensions	Mean ± SD	Mean ± SD	t-test	P-value
wounds	2.209±1.036	6.488±1.182	16.420	0.000**
suffocation	1.860±1.166	5.302±.9888	14.583	0.000**
convulsions	2.023±1.422	5.488±1.202	10.447	0.000**
choking	1.279±.8259	3.51±.9604	11.054	0.000**
poisoning	1.767±1.2879	4.441±1.2593	9.557	0.000**
fracture	1.6512±1.2447	4.697±1.07987	9.495	0.000**
burning	1.976±1.451	4.814±1.49417	-9.477	0.000**
epistaxis	2.302±1.1402	4.558±1.389	9.578	0.000**
fainting	1.837±1.326	5.651±1.3781	11.868	0.000**
Tooth Injuries	2.139±1.4402	5.790±1.612	8.903	0.000**
Total practices	19.046±5.4943	50.7442±5.9884	20.675	0.000**

Figure (2): Distribution of the studied kindergarten teachers' practices regarding first aid(n=43).



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· · · · · ·	Relation Detw		ied kindergarte	ii ieacher	s' characteristic	s and stud	iy variables (n=	=43)
Items	Pre			Post				
	Knowled	ge	Practices		Knowledge		Practices	
Age in years:-								
20 to less than 25	11.28±5.498	.460 .634	30.571±2.760		19.428±4.076	.269 .766	53.428±2.82	.834 .442
25 to less than 35	10.10±.3457		28.70±2.9844	5.711 .421	19.266±6.180		50.233±6.75	
35 and More	8.33±.4082		25.166±2.786		17.50±2.949		50.166±3.92	
Marital status:-								
Single	7.333±2.33	2.01	31.33±1.366	3.75	12.33±7.366	9.67 .612	54.16±2.316	15.04 .620
Married	9.482±4.067	.146	28.37±3.437	.432	19.27±4.199		52.24±4.954	
Divorced	14.125±1.95		26.87±2.10		23.25±3.575		42.75±4.55	
	Do you have pre-school children:-							
Yes	9.88±3.20	4.14 .441	20.26±4.686	1.243	29.153±2.852	1.554 .416	50.50±6.64	3.154 .376
No	10.29±5.276		17.17±6.22	.218	27.529±3.62		51.11±4.998	
Academic qu	alifications:-							
Bachelor's	8.25±4.097		28.00±3.25		14.125±5.93	9.672 .000**	52.00±4.750	11.04 .000**
License	8.94±2.7380	7.207 .002*	29.15±3.07	3.155	20.05±5.67		50.68±6.11	
Diploma	13.00±3.717		27.91±3.396	.034*	20.41±3.342		48.25±6.426	
Master's /PHD	10.00±6.97		28.25±4.272		20.00±5.163		56.00±2.82	
Years of ex	perience:-							
Less than 5	7.25±4.677		27.30±3.95		15.125±5.5		49.02±4.650	
years		3.632		.561		5.235		.913
5 to 10 years	8.84±2.5380	.003*	28.15±3.27	.002*	19.05±5.67	.021*	51.68±6.71	.024*
More than 10 years	14.06±3.817		27.92±3.436		20.35±3.346		52.25±6.435	
Have you ever attended any training courses related to first aid for children: -								
Yes	13.28±5.428	1.423	28.30±3.55	2.632	29.153±2.852	9.154	50.53±6.63	4.112
No	10.10±.3447	.002*	26.15±3.17	.0023*	25.529±3.62	.043*	45.11±4.918	.006*
		1		1			1	

Table (3): Relation between studied kindergarten Teachers' characteristics and study variables (n=43)

* Statistically significant at p<0.05.

** Highly statistically significant at p<0.001

Table (4): Correlation between knowledge and practices among studied kindergarten teachers through pre- program and post - program phase (n=43).

Study variables	Time	Kn	owledge	Practices		
		r	р	r	р	
Knowledge	Pre	-	-	2.114	.001**	
Practices		2.114	.001**	-	-	
Knowledge	Post	-	-	1.533	.001**	
Practices		1.533	.001**	-	-	

* Statistically significant at p<0.05. ** Highly statistically significant at p<0.001

Discussion

Regarding the distribution of demographic data of the studied kindergarten teachers the current study showed that more than two thirds of the studied kindergarten teachers age 25 to less than 35 were married, and more

than half of them had pre-school children, less than half of them had licenses and more than half of them had 5 to 10 years of experience. The majority of them didn't attended any training courses related to first aid for children and more than one - fifth of them

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attended one course for less than one week. This may be attributed to Egyptian ministry of education criteria in hiring only licensed teachers. In addition to regular conduction of first aid training programs in nursery schools due to children begging at high risk for different types of injuries.

These findings were corroborated by the research conducted by **Abdul-Lateef**, (2022), which was titled "The effect of first aid training program for nursery and kindergarten school teachers in Mosul" and discovered that half of the teachers were married, half had five to ten years of experience, the majority of the sample was between the ages of twenty and twenty-five, the teachers' qualifications were primarily bachelor's degrees, and half of the teachers had not taken any first aid-related training courses. These findings differed from those of the study carried out by Mohamad et al., (2018).

It is titled "Effect of Accident Prevention Program on Nursery School Teachers' Knowledge and Practices" and shows that almost two-fifths of the teachers in the study were older than thirty. Every instructor held a Bachelor of Science degree, and over two-fifths of them took training courses. Of those who did, over half took at least one course.

Regarding the distribution of kindergarten teachers' first aid knowledge, the current study shows that less than one-fifth of them had adequate first aid knowledge prior to the program, and that this number rose to the majority after the program. The absence of required continuing education courses and a lack of interest in or coverage of first aid in the curriculum may be the causes of this lack of knowledge and practice.

These findings were comparable to those of the study conducted by Negm et al., (2022), titled "Effect of Structured Educational Package on Primary School Teachers' Knowledge and Practice Regarding First Aid Management among School Children" which observed that most of the studied primary school teachers had poor knowledge before structured educational package implementation compared to most of them after the structured educational package implementation had good knowledge. Additionally, these results were supported by Abdella, et al., (2015), which titled "Intervention Program for the Kindergarten Teachers about Pediatrics First Aids" and revealed that nearly two-thirds of studied teachers had poor knowledge at pre-program phase, which increased to nearly twofifth of them having high levels of knowledge.

According to comparison between the pre-program and post-program practices regarding first aids dimensions among kindergarten teachers the current study showed that the mean score of total practices was 19.046±5.4943 at pre-program and increased to be 50.7442±5.9884 post-program, and there was a statistically significant difference between pre-

program and post-program practices regarding first aids dimensions among kindergarten teachers at (p=0.000). This may be reflects the program effectiveness in improving teachers firs aid practices. These results were supported by Mohamad et al., (2018). who revealed that the mean score of teachers practice was 9.98± 2.891 at pre-program phase and increased to be 44.20±4.701 post-program and there was a statistically significant difference between preprogram and post- program practices regarding first aids dimensions among kindergarten teachers at (p=0.001). Additionally, these results were supported by Abdella et al., (2015), who revealed that the total practice was improved in post intervention compared to pre intervention as cleared by mean and SD of 17.4 \pm 6.6 and 9.2 \pm 5.1 respectively.

Regarding distribution, the studied kindergarten teachers' practices regarding first aid, the current study demonstrated that less than one fifth of kindergarten teachers had adequate practice levels regarding first aid at pre-program and increased to be nearly three quarters post-program. This may be attributed to the effectiveness of the training program. In addition to the simplicity of presenting knowledge supported by photos and handouts.

These results agreed with Negm et al., (2022), who observed that most of them had unsatisfactory first aid practices before the structured educational package, while most of them had satisfactory first aid practices after the package. This effect on the improvement of the primary school teachers' practices was highly statistically significant (P=0.000). Furthermore, these findings were consistent with Mohamad et al., (2018), who found that there was an observed improvement in the percentage in the total mean scores of practice after implementation of the program with statistically significant differences at (p-value 0.0001) between pretest and immediate posttest.

As regards the relation between studied kindergarten teachers' characteristics and study variables the current study showed there was a statistically significant relation between the studied kindergarten teachers' knowledge and practices at pre and post program with academic qualifications, years of experience and attended any training courses related to first aid for children at (P<0.05). This may be due to the effectiveness of attending training programs in introducing information which improves and shapes teachers first aid knowledge and practice.

These results were supported by the study carried out by **Abu-Elenen & Elkazaz**, (2015), which was titled "Training Program for the Kindergarten Teachers about Pediatrics First Aids" and showed that there was a statistically significant association with teachers' first aid practice and years of experience, in addition to, a statistically significant association with teachers' firs aid knowledge and their years of experiences and

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attending programs about first aid. These results were different from **Ghyadh & Al-Jourani**, (2021), who conducted a study titled "Study of relationship between Primary Schools Teachers' Knowledge and their socio demographic characteristics about First Aids in Al-Najaf City" and discovered no statistically significant correlation between the educational background and years of service of the kindergarten teachers and their knowledge and practices before and after the program.

Regarding the correlation between knowledge and practices among studied kindergarten teachers through pre and post program phase the current study revealed that there was a statistically significant correlation between the studied kindergarten teachers knowledge and practices among pre- program and post- program phases (P=0.00). This may be due to the fact that knowledge is the prerequisite teachers' them more likely to engage or participate in its practice.

These results were similar to the study performed by **Negm et al.**, (2022), who revealed that there was a positive correlation (P=0.005) between primary school teachers ' knowledge and their practice scores post-structured educational package implementation regarding first aid management. Moreover, these results were in the same line with Abu-Elenen & Elkazaz, (2015) who showed that the knowledge and practice of first aid among teachers had a positive association coefficient.

Conclusion

The present study's results led to the following conclusions:

The current study showed that there were statistically significant differences between pre-education programs and post-education programs among kindergarten teachers regarding knowledge of the most common children's accidents at (p=0.000).

Recommendations

The following suggestions were made in light of the findings of the current investigation:

- 1. Teachers in nursery schools at all private and governmental levels should be the target of health promotion initiatives that address accident types, accident prevention, and first aid management.
- 2. Schools should have a link with health institutions for immediate referral in case there is injury to the students.

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