

# The Influence of Training Program on Knowledge and Practices of Preparatory Schools' Children Related to the Selected First Aid

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**Abstract** The study was aimed to determine knowledge and practices of preparatory schools' children related to the selected first aid. Otherwise to evaluate influence of training program on knowledge and practices of preparatory school children related to the selected first aid. **Design:** One study group as served pre/ post-test used a quasi-experimental design. **Settings:** The study was carried out at preparatory schools at Banha City were selected four schools named May 15, Modern Pioneers, Atyrab New, National Guard, which were selected by systematic random way. **Subjects:** Multistage random sample was utilized to select four preparatory schools and the recruited children which composed of 160 children. **Tools:** Two tools for data collection were used; first tool an interview questionnaire sheet which included socio-demographic characteristics for children's knowledge related to the selected first aid. Second tool was consisted of observation checklist to observe practices for children's pre and immediately post training program. **Results:** The study implied that the training program was having a positive effect; on improving preparatory schools' children knowledge level and practices level related to the selected first aid post the training program was implemented. **Recommendations:** Periodically training programs for preparatory schools' children as a whole related to the selected first aid for initial treatment of injuries and emergence situations must be done and the educational curriculum the knowledge and practices regarding to first aid could be inserted.

**Keywords:** preparatory school, children, first aid

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## 1. Introduction

Childhood that is the school period have considered primarily from the vulnerable groups to injuries and illness. Almost, one comes across simple injury at sometimes, can have many accidents can occurring in any type of fractures, bleeding, fainting or even asphyxia. So that first aid was very important as taking a child to a medical management [1].

School have many behavioral characteristics as less awareness of risks and more physical developments and school children have narrower airways from there characteristics, small body mass were exposed to several types of risks and carry a higher dangerous. Commonly, have small bruises but at the same times, they may have a considerable injuries as bleeding, fractures, fainting, so that, first aid is importance as medical management [2]. Injuries at childhood are occurring as normal events daily and the most of previous injuries could be managed by nonprofessional people [3]. First aid is usually applied by a nonprofessional person to the injured child until final appropriate management can be carried out. Many self-limited health problems or simple injuries cannot need treatment after implementing the first aid [4].

Injuries at childhood period are from the most common health problems especially in between school children globally, so that can cause considerable lifelong health problem or can leading to death. Therefore, first aid is the most important in that injury [5]. In Egypt, according to the Ministry of Health were recorded in the year 2016, 696,000 and more than injured cases. Approximately 40% of these injuries occurred in between less than twenty years of age [6].

School is very important establishment for learning's health. Health services at school almost neglected due to minimize of awareness regarding to common health problems and first aid managements [7]. The student's teachers had the authority to good observe their students. Teachers must make sure the students are secured inside their school building [8].

First aid is defined as the aiding manages and initial management delivered for any health problems or injury [9]. First aid is not supported only for the simple injuries or many health problems, but as well with other primary management including psychosocial support for children undergoing emotional trauma from exposing and seeing as injury [10]. It is a set of trained procedures and practices given before regular medical managements can be attained.

According to [11], training for first aid is very important ability for building component of hospital care

as prior in societies. In some communities as Egypt, increasing the importance of this program at the schools, but we have a little alertness toward the child knowledge and practices or maximum level of practical methods for these people.

Appropriate way for secure and promote the school health is a health education. School are had broad minded and are more acceptable of any modifications in concepts and acceptable to any changes in their lifestyles [12]. Otherwise schools as a place are the extreme appropriate where good training for first aid to accomplish. So, some researches had confirmed that training basic first aid could be mandatory in the most schools [13].

### 1.1. Significance of the Problem

The schools were risky for many accident events and considerably injuries. Training of first aid is effective to decreased morbidity and mortality rate from these injuries, which represent considerable the biggest health problem. Globally, 895,000 schools' children under eighteen years die from accidental injuries annual [14]. By World Health Report, the authority of illness from minor injuries had increased from about 16% at 2000 to 20% at 2001 and predicted to more increasing to about 30% at 2021 [15]. Therefore, training for first aid very important for nurses and gain their attention.

## 2. The Study Aim

- To determine knowledge level and practices for preparatory school children related to the selected first aid.
- Influence of training program on knowledge level and practices for preparatory school children related to the selected first aid.

## 3. Research Questions

- What are the children's knowledge level and practices related to the selected first aid among preparatory school's children?
- How the training program will influence on knowledge level and practices for preparatory school children related to the selected first aid?

## 4. Material and Methods

### 4.1. Research Design

A quasi-experimental design was utilized.

### 4.2. Settings

Preparatory schools number at Banha City is evaluated to be forty schools (20 schools in East city and 20 schools in West city). Selected by randomly method only one school from every ten schools to reach 4 schools (2 from East Banha city and 2 from West), the four schools which selected, named May 15, Modern Pioneers, Atyrab New,

National Guard, which were selected by systematic random way.

### 4.3. Sample

Second and third grad was selected and one class from each grad was selected randomly from each school. Sample served as their control (Single group study). After that all school in the selected classrooms were taken, total classes in the current study were 8 classes. Each one included from 25 to 30. The total sample number was 160 (both female & male), having the inclusion criteria: Their aged in between 13-15 years, male and female, the consent form was taken verbally from the children and their parents to the agreement for the participation in the present study. While the children having serious health problems and learning disabilities were excluded from the study.

### 4.4. Tools of the Study

Two tools were conducted for the data collection, designed and written in simple Arabic language in form by the researcher.

**Tool (I): An interview questionnaire sheet** for children that was to cover the following:

**Part (I): Socio-demographic characteristics** for age, child gender, educational grade level, parent's education, and parent's occupation.

**Part (II): Children's knowledge regarding first aid**, this part was used to assess knowledge regarding of selected first aid before and immediately after the program for the studied group. It was included 47 questions included definition of first aid, signs and symptoms and causes, first aid for fainting, bleeding, wound, fracture, simple burn, epistaxis and asphyxia. A total score for the questionnaire was ranging from (0-47) score where adequate at 60%. The correct answer was taken score one and for the incorrect answer was taken zero score. The total knowledge score interpreted as follows:

- Adequate knowledge were considering from 50 to 70%
- Inadequate knowledge less than 50%

**Tool (II):** It was observational checklist to observe children practices pre and immediately post implementing the program; it used to assess practices related to the selected first aid which: epistaxis, fractures, wound, bleeding, simple burns, fainting and asphyxia. It was filled in by the researcher. This checklist consisted of 41 points. The complete answer was taken score one and for the incomplete answer or not done was taken zero score. Total score interpreted as follows.

- Sufficient practices 60% or more than
- Insufficient practices were considering less than 40%.

#### 4.4.1. Validity and Reliability of the Study Tools

The study tools submitted through the reviewed from three experts in Pediatric Nursing and Statistics field to test the validity. Knowledge tool (Cronbach's alpha = 0.662) and practices tool (Cronbach's alpha = 0.922).

#### 4.4.2. The Training Program

This program aimed to promote the children's knowledge level and practices related to the selected first

aid. The researcher was developed the training program based on the relevant literature.

**I-Assessment Phase:** The researcher based on determine the knowledge level and practices related to the selected first aid by pretest that indicated unsatisfactory knowledge level and inadequate performance, after that the training program materials for education were prepared.

**II-Planning Phase:** This phase was begun by the configuration for implementation training program. The recruited sample divided into 16 groups by different numbers ranged in between 9 to 11, average 10 in each group according to the sample size in each school. Teaching place the program was established in the schools' libraries; according to the agreement which were taken from the students' teachers at the schools.

**III- Implementation Phase:** The researcher used various methods for teaching as: group discussion, small lecture, demonstration and role play and various types of visual media as power point presentation, simple videos and pamphlet related to the first aid arranged by the researcher and disseminate to the all participants after ended the program. The program had 4 sessions for 4 days for each group, each session was taken one hour the training program was conducted in three months: the first session consists of: background related to the first aid, definition, aim, content of bag and number for ambulance, bleeding, definition, causes, signs & symptoms and the first aid for bleeding & epistaxis. The second session consists of: definitions, signs & symptoms, causes and implementation of first aid for simple burn & wound. The third session included: definition, causes, signs & symptoms and implementation of first aid for fainting & asphyxia. The last session was content, definition signs & symptoms, causes, and implementation of first aid for simple fracture.

**IV- Evaluation Phase:** Immediately after the last session the researcher evaluate each group immediately by the posttest was used the same formats of the pretest to determine the knowledge level and practices related to the selected first aid.

## 5. Methods of Data Collection

### 5.1. Ethical Considerations

- Before the piloted as well as the study proposal was approved from Dean Faculty of Nursing, South Valley University.
- Before collecting data the researcher was obtained an official permission from directors of the pervious selected schools.
- Verbal agreement from the children and their parents to engaged in the study was taken
- Researcher was given complete clarification of the study and the study aim, the researcher was assured that the data was collected and information was confidential and was used only for the aim of the present study.
- No health hazards were presented.
- Participants were assured that all their data were highly confidential: anonymity was also assured

through assigning a number for each child instead of names to protect their privacy.

### 5.2. Pilot Study

The study was pilot- accomplished on 10% of the study sample (16), from the recruited sample for clarity, feasibility & relevance and times needed for applied the tools. In the study sample the pilot study sample were excluded.

### 5.3. Field of Work

At the initial session, the researcher introduced herself to the children and explained the aim of the current research. The researcher was done pretest before the implementation of the training program to determine the children's' knowledge level and practices related to the selected first aid , each session started by the clarification for the purpose of the next topic. At the end posttest was done to assess the obtained knowledge level and practices post the training program. The program was established in the period of three months, from the first of December 2017 up to the end of February 2018 related to the availability of free lectures in the course schedule for the students.

## 6. Statistical Analysis

Data was collected coded and tested by utilizing statistical package for social sciences version 21. Data were expressed as frequency and percentage, mean and standard deviation was calculated. Comparison between two periods and more had done by using Chi-square test ( $X^2$ ). Significance level was at  $p < 0.05$ .

## 7. Results

**Table 1. Socio-demographic characteristics of studied preparatory schools' children**

Variables	Items (No=160)	No	%
Age	13 < 14	73	45.63
	14 ≤ 15	87	54.38
Children gender	Male	97	60.63
	Female	63	39.38
Residence	Rural	97	60.63
	Urban area	63	39.38
Educational level	2 <sup>nd</sup>	86	53.75
	3 <sup>rd</sup>	74	46.25
Previous training program of first aid	Yes	23	14.38
	No	137	85.63
Child gender	Male	97	60.63
	Female	63	39.38
Mothers' educational level	Only read and write	14	8.75
	Secondary	42	26.25
	University graduate	104	65.00
Mothers job	Housewife	51	31.88
	Working	109	68.13

Table 1 imply that, about half of students were aged 14 ≤15 years, the majority of recruited sample from rural area and to gender; it was observed that more than half of students were male. In referral to students educational levels were around of them at 2<sup>nd</sup> and the rest of them were at 3<sup>rd</sup> degree. The previous experience regarding first aid training program were more than 85% haven't pervious experiences. In regarding mother's educational level more than half of them were university graduate and the rest of them were secondary school and can read and write respectively, 65%, 26.2% and 8.7% regarding educational level, where the majority of them were working.

Table 2 reveal that, 10.00, 16.25, 15.63, 18.13, 16.25, 11.88, 16.25 and 15.63% respectively had correct answer regarding first aid knowledge for introduction about selected first aid, definition, aim, content of bag and

number for ambulance, fracture, fainting, simple burn, wounds, epistaxis, bleeding and asphyxia in pre-program compared with 87.50, 88.75, 86.25, 90.00, 88.13, 88.75, 82.50, 87.50 and 87.42% in post- program, where p- level at 0.00. The table reflected, the preparatory schools' children had adequate knowledge after training program more than before, regarding of selected first aid.

Table 3 show that, 15.00, 18.75, 11.88, 12.50, 12.50, 12.50 and 12.50% respectively had complete done regarding of selected first aid practices for fracture, fainting, simple burn, wounds, epistaxis, bleeding and asphyxia in pre-program compared with 75.00, 95.63, 96.25, 79.38, 91.25, 89.38 and 93.13% in post- program, where p- level at 0.00. The table reflected, the preparatory schools' children had sufficiency practices after training program more than before, regarding of selected first aid.

**Table 2. Distribution of preparatory schools' children according to their knowledge as regards first aid pre and post program**

Variables	Pre- program (No=160)				Post- program (No=160)				X <sup>2</sup>	P
	Correct answer		Incorrect answer		Correct answer		Incorrect answer			
	No	%	No	%	No	%	No	%		
Introduction about first aid, definition, aim, content of bag and number for ambulance	16	10.00	144	90.00	140	87.50	20	12.50	124.44**	0.00
Fracture	26	16.25	134	83.75	142	88.75	18	11.25	3.95**	0.00
Fainting	25	15.63	135	84.38	138	86.25	22	13.75	4.72**	0.00
Simple burn	29	18.13	131	81.88	144	90.00	16	10.00	68.51**	0.00
Wounds	26	16.25	134	83.75	141	88.13	19	11.88	111.11**	0.00
Epistaxis	19	11.88	141	88.13	142	88.75	18	11.25	150.54**	0.00
Bleeding	26	16.25	134	83.75	132	82.50	28	17.50	34.37**	0.00
Asphyxia	25	15.63	135	84.38	140	87.50	20	12.50	20.48**	0.00
Total knowledge score	192	15.00	1088	85.00	1119	87.42	161	12.58	44.49**	0.00

\*\* Significant at the 0.01 level

**Table 3. Distribution of preparatory schools' children according to their practices as regards first aid pre and post program**

Variables	Pre- program (No=160)				Post- program (No=160)				X <sup>2</sup>	P
	Complete done		Incomplete done		Complete done		Incomplete done			
	No	%	No	%	No	%	No	%		
First aid of fracture	24	15.00	136	85.00	120	75.00	40	25.00	4.09**	0.00
First aid of fainting	30	18.75	130	81.25	153	95.63	7	4.38	31.72**	0.00
First aid of simple burn	19	11.88	141	88.13	154	96.25	6	3.75	46.26**	0.00
First aid of wounds	20	12.50	140	87.50	127	79.38	33	20.63	78.14**	0.00
First aid of epistaxis	20	12.50	140	87.50	146	91.25	14	8.75	107.32**	0.00
First aid of bleeding	20	12.50	140	87.50	143	89.38	17	10.63	133.65**	0.00
First aid of asphyxia	20	12.50	140	87.50	149	93.13	11	6.88	82.54**	0.00
Total practices score	143	13.66	967	86.34	992	88.57	128	11.43	58.25**	0.00

\*\* Significant at the 0.01 level

**Table 4. Comparison between of preparatory schools' children according to their knowledge level and practices as regards first aid pre and post program**

knowledge	Pre- program (No=160)				Post- program (No=160)				X <sup>2</sup>	P
	Adequate knowledge		Inadequate knowledge		Adequate knowledge		Inadequate knowledge			
	No	%	No	%	No	%	No	%		
Practices	16	10.00	144	90.00	140	87.5	20	12.5	80.99	0.00
Sufficiency	30	18.80	130	81.2	136	85.0	24	15.0		
Insufficiency										

\*\* Significant at the 0.01 level

Table 4 shows that 10.00% had adequacy knowledge of previous first aid and that the rest of them were inadequacy knowledge before to the program. On the other hand, 87.5% of the studied sample had sufficient knowledge of the first aid selected, while the rest of the studied sample had insufficient knowledge after the program. In reference to the practices of the selected first aid, 18.8% had sufficient practices and the rest were insufficient before the program. While 85.0% were sufficient and the rest of them were insufficient post-program. Finally, the table reflects the fact that the training program has had a positive impact on preparatory schools' children.

**Table 5. Relation between of preparatory schools' children according to their knowledge and practices as regards first aid pre and post program**

Items	Pre- program (No =160)		Post – program (No =160)	
	<i>r</i>	<i>P</i>	<i>r</i>	<i>P</i>
Students' knowledge				
Students' practices	0.172	0.03*	0.905	0.00**

Table 5 revealed positive highly statistical significant correlation at ( $P < 0.01$ ) was established between the total knowledge scores for preparatory schools' children and the total practices scores in pre and post program. That was give reflecting, that the training educational program regarding the selected first aid, had strong positive effect on preparatory schools' children.

## 8. Discussion

Preparatory school consider as the main target for the largest population in Egypt and globally. Injuries are the most cause which increasing morbidity and mortality rate in childhood period for decreasing the level of awareness & lack of previous experience. In some of communities in the world & in Egypt health services in the school are predominantly neglected [16]. This is leading to decreased in knowledge and practices related to first-aid care. However rapid applications of first aid practices immediately after bleeding, fracture or injury may decrease the risk that can result from it. Training program for has the potential effectiveness to reach to proper improvement in health, knowledge & practices between children at preparatory schools', related to the selected first aid.

The current study aimed to determine the influence of training program related to the selected first aid for children knowledge and practices at the preparatory schools'.

Related to the socio-demographic characteristics of the preparatory schools' children; current study reflect that around half of students were age group in between  $14 \leq 15$  years from rural area, this agreement with [17] who represented that about half of the students were in the aged more than 14 years, from rural area. Related to gender of the studied children, it was reported that more than three-quarters of students were male; this result agreed with [17] who observed that 60.5% of the children were males. Related to children previous experience, it was reported that were more than 85% haven't pervious

experiences; this results not agreed with [18] who observed 74.3% from the students were trained at previously regarding to the selected first aid.

In referral to study in Egypt community for [19] who reflect the effectiveness of the instructional program on the knowledge graduated preparatory regarding the selected injury and emergencies situations for preparatory school children and their first-aid intervention reflect that most of the children had inadequate knowledge level and practices. That was agree with the current study were the training program had strongly positive effect on preparatory school's children.

Furthermore, [20] was agree with the present study where showed that, there was lack of knowledge regarding to first aid between children in the preparatory stage preprogram applications, while their results reflected, the knowledge level was significantly higher between them post program applications. Moreover [21] were reflected that the study sample as a whole, had lack knowledge and poor performances preprogram implementations. While post-program implementations, statistically significant difference was observed in the knowledge level and practice.

Likewise, [22] were reflected in their research to evaluate the effect of self- instructional approach for knowledge related the first aid between preparatory school children in Ernakulam city; there shown that 98% of preparatory schools were lack of knowledge in the pre-program, post dissemination the approach; 75.30% of the children were good knowledge level related to the first aid. Furthermore, [23] who shown that, around 75% of the children at the preparatory schools were inadequate knowledge related to the selected first aid. These results as the same were the results of the current study which reflected, the major of preparatory school's children had lack of knowledge level before the training program implementations.

However, these findings were not agreed with [24] who had study to determine the knowledge and performances of first aid between children at preparatory schools in India and imply that there was lack of knowledge level regarding of first aid was shown between 15% and 85% for preparatory school's children respectively. Furthermore, the current study reflected a highly statistically significant among preparatory school's children practices before & after the training program ( $P$  level at 0.00).

[25] Who carried out the knowledge level and performances after training program implementation for preparatory school's children, were highly significant with comparing the knowledge level and practice after training program implementation of preparatory school's children regarding to the selected first aid intervention of simple injury as bleeding, wounds, fainting, asphyxia, etc.

These findings were as the same with [16] who carried out the effectiveness of educational program related to basic life support for handling the risk of injury between preparatory school's students and reflected that were significant progression in the knowledge level among preparatory school's children post training program.

Hence research question (Q2) was answered that there have a significant relation among knowledge level and practices related to the selected first aid.

## 9. Conclusion

Preparatory schools' children had promoting of knowledge level and practices related to the selected first aid after implementing the training program at Banha City.

## 10. Recommendations

- Periodically training programs for preparatory schools' children as a whole related to the selected first aid for initial treatment of injuries and emergence situations must be done.
- We must have large numbers of researches toward first aid at different grad levels among school's children.
- At the educational curriculum the knowledge and practices regarding to first aid could be inserted

## Conflicts of Interest

There is no conflict of interest. The author declares that.

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