

## ORIGINAL ARTICLES

## Effectiveness of Teaching Program on Knowledge Regarding First Aid and Basic Life Support among School Teachers

Amira Nahedh Wasfi Azzam<sup>1</sup>, Sally Zaki Tawfiq Al Gaga<sup>2</sup>,  
Aisha Rabei Saeed Rabei<sup>3</sup>, Soney M. Varghese<sup>4</sup>

**How to cite this article:**

Amira Nahedh Wasfi Azzam, et al. Effectiveness of Teaching Program on Knowledge Regarding First Aid and Basic Life Support Among School Teachers. Community Pub Health Nurs. 2025; 10(1): 21-28.

**ABSTRACT**

**Background of the study:** First aid is a life saving measure which prevent minor injuries from becoming majore injuries. Based on health and safety regulations.

**Objectives:** were to assess the the level of knowledge on first aid and basic life support of schools' teachers. And to evaluate the effectiveness of structured teaching program on firstaid and basic life support among schools' teachers.

**Materials and Methods:** A quantitative approach with one group pretest and posttest survey design was used to determine the efficiency of first aid and basic life support training on knowledge among teachers. Data was obtained from the school teachers who fulfilled the inclusion criteria using the pretest and posttest. Sample participation was voluntary, complying with the consent procedure, ensuring confidentiality and anonymity. A total of 60 valid responses were obtained. Descriptive statistics were utilized to analyze the frequency and percentage distribution of sociodemographic variables of the trained school teachers.

**Major findings of the study:** Sixty school teachers were studied of which 47 (78.33%) were females, and 13 (21.66%) males, 07 (11.66%) of them were aged between 21 - 30 years, 33 (55%) between 31 - 40 years, and 20 (33.33%) between 41 and above. 60% of the teachers were UAE citizens and 40% were non-UAE citizens. In regard to previous training on first aid and BLS, it was found that 35 (58%) had attended similar training previously, and 25 (42%) had never attended any training on first aid and BLS. In the pretest, 11 (18.3%) teachers got below average mark (less than 9 out of 15), 29 (48.3%) teachers got average mark (between 9-11 out of 15), and 20 (33.3%) teachers had got aboveaverage mark (12 and above out of 15). While in the posttest, the results had improved as following: 0 (0%) teachers got below average mark (less than 9 out of 15), 1 (1.7%) teacher got average mark (between 9-11 out of 15), and 59 (98.3%) teachers had got above averagemark (12 and above out of 15). It was very clear that the level of knowledge about first aidand BLS had improved,

**AUTHOR'S AFFILIATION:**

<sup>1,2,3</sup>RNBSN Students, College of Nursing, Gulf Medical University, Ajman, UAE.

<sup>4</sup> Assistant Professor, College of Nursing, Gulf Medical University, Ajman, UAE.

**CORRESPONDING AUTHOR:**

Amira Nahedh Wasfi Azzam, RNBSN Students, College of Nursing, Gulf Medical University, Ajman, UAE.

E-mail: amira.azzam@ehs.gov.ae

➤ Received: 26-10-2024 ➤ Revised: 20-11-2024 ➤ Accepted: 04-12-2024



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since mean score in pretest was 10.9 (SD 2.31), then increased to 14.1 (SD 1.12) in posttest. Results show that there is a statistically significant change in the level of knowledge at [p value <0.001].

**Conclusion:** The study revealed the impact of teaching programs on knowledge regarding first aid and basic life support among School Teachers. Therefore, standard processes for first aid training and basic life support for all schoolteachers should be implemented and it was found effective the training session for the schoolteachers. Teaching and training regarding first aid measures will be helpful and effective in reducing the complication of accidents and injuries among school children.

This study supports the importance of conducting training sessions on first aid and basic life support for all teachers in primary schools.

## KEYWORDS

• First aid • Basic Life Support • School Teachers • School Nurse

## INTRODUCTION

First aid can both save lives and stop minor injuries from getting worse. Employers are required by health and safety regulations to make sure that first aid facilities and equipment are sufficient and suitable for use in the workplace. Because they can lead to permanent disability or even death. School-related injuries are one of the most serious health issues facing the world today. To preserve their life and lessen the effects of injuries until medical help arrives, first aid and basic life support become equally necessary<sup>(1)</sup>.

Every year, at least 875,000 school children under the age of 18 die a More serious injuries have been documented at schools<sup>(2)</sup> than in areas of intermediate income. The burden of disease caused by injuries has increased, going from about 12% in 1990 to 15% in 2000, and is predicted to reach around 20% by 2020, according to the World Health Report<sup>(2)</sup>. The top cause of death for school-aged people worldwide is an injury that frequently happens in a school context<sup>(3)</sup>. The morbidity and mortality rate can be decreased by treating such emergencies and injuries promptly and appropriately<sup>(4)</sup>. First aid performed correctly can mean the difference between temporary and permanent disability, speedy recovery, and life or death<sup>(5)</sup>.

In addition, it has been strongly advised that cardiopulmonary resuscitation instruction be provided in academic settings such as round the world from accidents, and more than 95% of these deaths take place in nations with low and

a long-term plan for educating the public<sup>(6-7)</sup>. School kids frequently sustain wounds such cuts, sprains, fractures, burns, heatstroke, bug bites, choking, epileptic fits, and nasal bleeding in their daily lives. However, there are still many cases of improper injury management among them<sup>(8)</sup>. These findings suggest that educating teachers about potential risks and creating safe environments can help reduce the number of injuries.

Most school teachers and students need to be inspired to learn about first aid and basic life support, which are parts of the chain of survival for a person experiencing a life-threatening injury because they generally have poor knowledge about safe working conditions during injuries. First aid in schools is typically handled by the school nurse, but since she might be in a meeting or otherwise unavailable, school staff members need to be trained in basic life support and first aid. If not properly treated, minor injuries can worsen and become more serious. When a spine fracture is stabilized well until an ambulance arrives, simple interventions can sometimes prevent permanent disabilities. damage to the spinal cord that may result in the irreversible paralysis of the lower extremities. Additionally, some interventions can aid in saving the lives of students. For instance, in cases of choking, an abdominal thrust can assist in removing the foreign object obstructing the student's airway and save their lives. When a diabetic student goes into hypoglycemia coma, immediate first aid treatment with glucagon injections can

save their lives until they can get to the hospital for additional medical treatment.<sup>13</sup>

**METHODOLOGY**

A quantitative research approach with pre-test and post-test survey design was used to determine the efficiency of structured training program on knowledge about first aid and basic life support among primary school teachers. After getting ethical clearance from IRBat GMU (Ref. no. IRB/CON/STD/58/DEC/2022) and Ministry of Health and Prevention research ethical Board (MOHAP/DXB-REC/F.M.M/No.20/2023), the project work was initiated. Informed consent was obtained from the study sample prior to the study. Then data was obtained from the school teachers who fulfilled the inclusion criteria using the pretest and posttest questionnaires. Participation of the selected sample was voluntary. Confidentiality and anonymity were maintained and had the right to withdraw from the study at any given point. A total of 60 valid responses. The sample consisted of teachers from two governmental schools in Ajman (Aljurf School and Shaikha Bint Saeed School), who fulfilled the inclusion criteria. The study was conducted over a period of six months.

**Inclusion Criteria include:**

- Teachers who are available during the five working days at school (full-time).
- Teachers who were willing to participate in the study.
- Literate in Arabic and English Language.
- Any nationality.

**Exclusion Criteria include:**

- Teachers who are not willing and not available during Data Collection.

**There were a Pre and Post training questionnaire; It is consisted of two parts:**

**Part (1):** Socio-demographic characteristics of the trainee teacher, includes the following: age, gender, nationality, marital status, educational level, specialty, and residence.

**Part (2):** Knowledge questionnaire: the questions covered the common types of school accidents and injuries and their management as the following: general knowledge about first aid offractures, bleeding and choking and burn, fainting & epilepsy, poisons, diabetic coma, epistaxis, chocking and basic life support.

**Scoring system of these questionnaires:**

Total score of knowledge is (15) points:

- Below average, less than 9
- Average, 9 – 11
- Above average, 12 and above

**Data analysis and interpretation**

Analysis is organizing and synthesizing the data. Interpretation is bringing the data into the real meaning. This chapter deals with the analysis and interpretation of the collected data from the subjects to assess the Effectiveness of teaching program on knowledge regarding first aid and basic life support among School Teachers.

**Study findings are organized and presented under following sections:**

**Section A:** Demographic Characteristics of School Teachers.

**Section B:** Frequency and percentage distribution of level of knowledge regarding first aid and basic life support among School Teachers.

**Section C:** Effectiveness of structured teaching program on knowledge regarding firstaid and basic life support among School Teachers

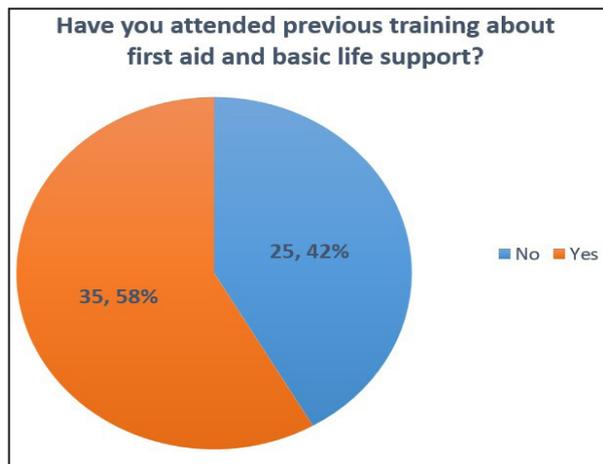
**Section A:** Demographic Characteristics of School Teachers

**Table 1:** Frequency and Percentage Distribution of Selected Demographic Variables of School Teachers

(n=60)		
Demographic variable	Frequency (f)	Percentage (%)
<b>Age (in years)</b>		
21 – 30	07	11.66
31 – 40	33	55.0
41 and above	20	33.33
<b>Gender</b>		
Male	13	21.66
Female	47	78.33
<b>Nationality</b>		
Local	36	60.0
Non local	24	40.0

Demographic variable	Frequency (f)	Percentage (%)
<b>Educational Status</b>		
Diploma	02	3.33
Bachelor	49	81.66
Master	09	15.00
<b>Marital Status</b>		
Single	13	21.66
Married	46	76.66
Other	01	1.66
<b>Specialty</b>		
Islamic & Arabic Subject	18	30.0
Science & Math Subject	20	33.33
Other	12	20.0
<b>Residence</b>		
Ajman	47	78.33
Sharjah	11	18.33
Other	02	3.33

Table 1 revealed that regarding age (55%) were in the age group of 31-40, (33%) were above 41 years. Regarding gender (21%) were male, (79%) were females. The data regarding educational status reveals that (81%) were having bachelors degree, and only (15%) were Masters. Data shows that around (70%) of the samples had previous training experience.



**Figure 1:** Frequency & Percentage Distribution of Previous training regarding first aid and basic life support

**Section B:** Frequency and percentage distribution of level of knowledge regarding first aid and basic life support among School Teachers

**Table 2:** Frequency and Percentage Distribution of pre-test level of knowledge regarding first aid and basic life support among School Teachers

Level of Knowledge	Pre-Test	
	Frequency (f)	Percentage (%)
Below Average (Less than 9)	11	18.3
Average (9-11)	29	48.3
Above Average (12 and above)	20	33.3

Table 2 shows that (18.3%) had below average, (48.3%) had average level of knowledge and (33.3%) had above average level of knowledge before training.

**Table 3:** Frequency and Percentage Distribution of post-test level of knowledge regarding first aid and basic life support among School Teachers.

Level of Knowledge	Post-test	
	Frequency (f)	Percentage (%)
Below Average (Less than 9)	0	0
Average (9-11)	1	1.7
Above Average (12 and above)	59	98.3

Table 3 data shows that 98.3% of the trained school teachers had an adequate level of knowledge and only 1.7% had moderate level of knowledge. None of the trained school teachers had poor knowledge regarding first aid and basic life support after teaching and training sessions.

**Section C:** Effectiveness of structured teaching program on knowledge regarding first aid and basic life support among School Teachers

**Table 4** Effectiveness of structured teaching program on knowledge regarding first aid and basic life support among School Teachers

Level of Knowledge	Pre-Test		Post Test		Paired t Test
	Mean	SD	Mean	SD	
Score	10.9	2.31	14.1	1.12	<0.001

Table 4.4 results shows that there is a statistically significant change in the level of knowledge after training session at p value <0.001

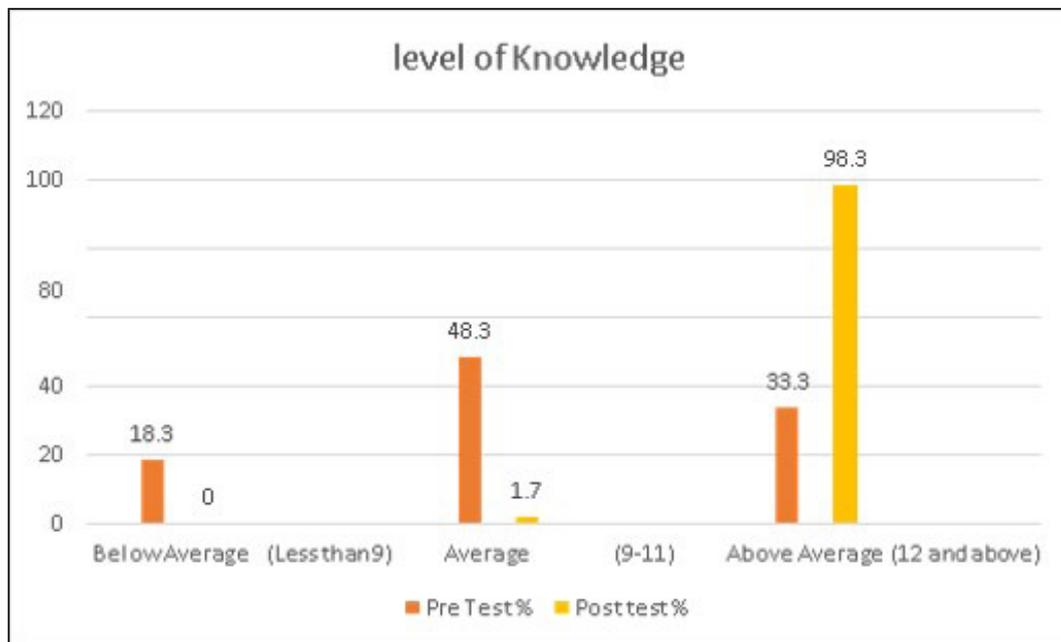


Figure 2: Frequency & Percentage Distribution of Scores in Pre-test & post-test regarding first aid and basic life support

## DISCUSSION

### Objective 1: To assess the the level of knowledge on first aid and basic life support of schools' teachers

nowledge on first aid and basic life support, the results indicated that in the pretest, 11 (18.3%) teachers got below average mark (less than 9 out of 15), 29 (48.3%) teachers got average mark (between 9-11 out of 15), and 20 (33.3%) teachers had got above average mark (12 and above out of 15). It means that about half of the trained teachers were having moderate level of information about first aid and basic life support.

The study findings were supported by Ali E. Mansour (2019) et.al conducted a quantitative observational cross-sectional study among the primary schools at Unaizah city, Qassim region, Saudi Arabia. A total of 315 subjects participated in the study. The study results revealed that the majority of the research participants were aged between 26 years and 50 years, 291 (93.9%), with only 2.6% being aged 50 years or more. Three-quarters of the participants did know what to do after a pupil faints, while 47.7% of the teachers did know what to do in the event bleeding. As a

conclusion for that study, it was found that Knowledge and education of what to do in an emergency that requires first aid appears to be not a problem in the primary schools surrounding Unaizah city, Qassim region, Saudi Arabia. However, the present study still warrants practical training for the teachers on first aid procedures.<sup>26</sup>

Furthermore, an institution-based cross-sectional study was conducted by Workneh, B.S., Mekonen, E.G. & Ali, M.S. from January 01 to 20, 2021 on the Determinants of knowledge, attitude, and practice towards first aid among kindergarten and elementary school teachers in Gondar city, Northwest Ethiopia. A simple random sampling technique was employed to recruit 346 participants. A structured pretested self-administered questionnaire was used to collect data. Only 41.1% of the teachers had good knowledge of first aid. Nearly two-thirds (64.8%) of the teachers had a favorable attitude towards first aid. The majority (85.8%) of the teachers who faced a child in need of first aid in their school gave first aid. Less than half and nearly two-thirds of the teachers had good knowledge and a favorable attitude towards first aid. Results shows that 33.3% had good knowledge and only 48.3% had moderate level

of knowledge and 18.3 % had below average level of knowledge.

**Objective 2: To evaluate the effectiveness of the structured teaching program on first aid and basic life support among schools' teachers**

Among the Sixty schoolteachers, it was found that 35 (58%) had attended similar training previously, and 25 (42%) had never attended any training on first aid and BLS. In the pretest, 11 (18.3%) teachers got below average mark (less than 9 out of 15), 29 (48.3%) teachers got average mark (between 9-11 out of 15), and 20 (33.3%) teachers had got above average mark (12 and above out of 15). While in the posttest, the results had improved as following: 0 (0%) teachers got below average mark (less than 9 out of 15), 1 (1.7%) teacher got average mark (between 9-11 out of 15), and 59 (98.3%) teachers had got above average mark (12 and above out of 15). It was very clear that their level of knowledge about first aid and BLS had improved, since the mean score in pretest was 10.9 (SD 2.31), then increased to 14.1 (SD 1.12) in posttest. Results show that there is a statistically significant change in the level of knowledge at [p value <0.001].

Aim of the study was to identify the effectiveness of structured teaching program (STP) in improvement of knowledge of primary school teachers on first aid management so that they can extensively use it at school premises to save children at any untoward circumstances. Pre experimental one group pre & posttest design was used with 60 sample. There was a mean difference (15.4) between mean pretest knowledge scores (12.3 with SD 2.80) and mean posttest knowledge scores (27.7 with SD 2.10). Significant difference was calculated using paired t test. Obtained t value is 36.11 which was higher than the table value of 3.66 (at P 3.66) There was an association found between pretest knowledge scores and variables such as age of sample and source of information used to get knowledge on first aid management. To conclusion it is important that every stakeholder must be aware of handling common emergencies during any epidemic or in any emergency situations to keep health environment around us.<sup>34</sup>

Quasi-experimental study with one group pre/post test research design was used. Multistage random sample used to select the five preparatory schools and the participated teachers which included 150 teachers. A

structured self-administered questionnaire included two tools: Tool I: Part I: Demographic data. Part II: assessment of knowledge about first aid and Tool II included observational checklist about first aid. The findings of the study revealed that Mean  $\pm$  SD of teachers' age were  $38.78 \pm 8.83$ , 26.7% of the teacher attended training program about first aid, there was statistical significant differences between total score of teachers' knowledge (p-value = .000) in pre and immediate post-test. There were statistical significant differences between the performance level of preparatory schools teachers (p-value = .000\*). The study concluded that: there was improvement of teachers' knowledge and practices regarding first aid after implementation of the training program. The study recommended that: Continuous educational and training programs for teachers and public as a whole about first aid.<sup>35</sup>

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