

Capacity Building of Females Governmental Secondary School Teachers in Abha City For Crises Management & First Aid

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Abstract

Background: A crisis is a temporary emotional condition wherein one's usual coping mechanisms have failed in the face of a perceived challenge or threat. First aid is the assessments and interventions that can be performed by a bystander immediately with minimal or no medical equipments. High school students and teachers lack knowledge regarding the appropriate first aid action to be taken for injuries and common illnesses. Various incorrect practices and myths associated with illnesses and injuries have been reported among students and their teachers. Capacity building is one of the WHO Strategies for improving disaster preparedness for school students and teachers. The aim of this study is to develop the capacity building of female governmental secondary school teachers on how to deal with crises management and first aid. **Design:** A Quasi experimental Design was used; one group pretest–Post Test Design. **Setting:** A stratified random sample was used to select secondary schools in Abha. **Subjects:** A random sample of 100 secondary school teachers was chosen from the selected setting in Abha. **Instrumentation:** Two structured formats were used to collect data pertinent to the study. The first was a pre/post interviewing questionnaire, and the second was a pre/post observational checklist. **Results:** 1. the studied sample had higher mean score at post test in relation to knowledge of first aid items. (2. The studied sample had higher satisfactory level of clinical mean score at post test in relation to clinical first aid items and also in relation to mean total clinical score. The studied sample had satisfactory and higher mean score at post test in relation to crisis management items and also in relation to mean total knowledge score. **Conclusion:** The health education and training program were succeeded to improve the knowledge and skills of school teachers in first aid and dealing with wounds, , burns, shock, bleeding, CPR and fractures and dealing with crisis management. This improvement was proved statistically. **Recommendations:** Nurses should highlight the need for disaster safety education; it is evident that disaster has significant impact on school students. The implementation of the health education and training program designed by researchers in similar settings to improve the knowledge and skills of school teachers in first aid and dealing with wounds, burns, shock, bleeding, CPR and fractures and dealing with crisis management.

Keywords: Capacity Building, Crises Management, First Aid

1. Introduction

Capacity building is one of the WHO Strategies for improving disaster preparedness for school students and teachers. School authorities should collaborate with such agencies to raise awareness among the school teachers and students and every teacher must undergo such training. School is an important institution for imparting students' health. School health services are commonly neglected due to lack of awareness and education about common ailments and first aid care (Bhatia, et al., 2011). The teachers have the responsibility to keep an eye on their students. They should make sure that they are comfortable and secured within the premises of their school (Sosada, 2011).

Every year 150,000 people die in situations where first aid could have given them a chance to live. Even so, fewer than one in 10 people have been trained in first aid (Khan, et al., 2011).

A crisis is a temporary emotional condition wherein one's usual coping mechanisms have failed in the face of a perceived challenge or threat. Events that might precipitate a crisis in schools include the suicide of a student or staff, sudden or accidental death, a critically injured student or staff, a violent incident and natural disasters. In a school faced with a crisis, its students, teachers, management personnel and parents especially those who are closely related to the precipitating incident usually become disturbed. (Educational Psychology Service Section, 2005).

The School Crisis Management Team is the most important tool for crisis intervention in the school. It comprises

a group of staff of the school who knows the school community, the students and each other well enough to make the necessary decisions when a crisis occurs. The School Crisis Management Team serves to manage the effects of a crisis and to help the school restore its normal functioning. The School Crisis Management Team coordinates the various resources to deal with the unusual situations (Educational Psychology Service Section, 2005).

First aid is treatment for the purpose of preserving life and minimizing the consequences of injury and illness until help from a medical practitioner or nurse is obtained with minimal or no medical equipments (Khan, et al, 2011 & Markenson, et al., 2010). High school teachers lack knowledge regarding the appropriate first aid action to be taken for injuries and common illnesses.

Basic life supports (BLS), including maintaining the safety of the scene where the accident occurs, opening airway, providing mouth-to-mouth ventilation, and external chest compression, represent the most crucial steps in first aid. Cases, in which circulation is arrested for more than five minutes, can result in irreversible brain damage or even death. Therefore, in general, life-saving BLS procedures should immediately be applied by non-professionals who happen to be nearby at the time of the incident (International Liaison Committee on Resuscitation, 2005).

Students and teachers spend most of their time within a school environment, which is therefore the most likely setting of incidents (e.g., asthma attacks, epileptic seizures, sports injuries, etc.) that may require first aid procedures (Olympia, Wan, Avner, 2005). Given that schools may not have any trained healthcare providers on-site, it will be teachers who provide first aid to students. Teachers should therefore be trained in first aid procedures and be able to put them into practice. Teachers should be able to convey basic, accurate, and current first aid knowledge to their students and others in society. Therefore, teachers not only need to receive first aid training (FAT) during their professional development, but should also update their knowledge and skills in the light of recent first aid guidelines (Goel and Singh, 2008).

Factors like lack of knowledge, skills, confidence and competence of teachers regarding first aid of common injuries has motivated the investigator to undertake the Evaluative study to develop educational material to make the school teachers acquire and update the knowledge with the help of planned teaching programme (PTP) and to be competent in the first aid of common injuries occurring in secondary students.

2. Significance of the study:

Due to the high rate of accidents and injuries of school age and a lack of knowledge of society, including teachers on how to manage these cases leads to high mortality and complications resulting from delayed arrival of emergency medical service. Also there happened to be a recurrence of such crises in more than one city in the Kingdom such as Jeddah and Abha in the College of Education was unfortunate.

3. Research objective

The current study was designed to develop the capacity building and skills of female governmental secondary school teachers on how to deal with crises management and first aid.

4. Hypothesis

1. The post-test knowledge scores on first aid among secondary school teachers will be higher than the pre-test knowledge scores.
2. The post-test practice scores on first aid among secondary school teachers will be higher than the pre-test practice scores.
3. The post-test knowledge scores on crisis management of selected conditions among school teachers will be higher than the pre-test knowledge scores.

5. Methodology

Subjects and Method

Research Design – A Quasi experimental design was used; one group Pretest – Post Test Design

Setting:

A stratified random sample was used to select secondary schools in Abha.

Subjects:

A random sample of 100 secondary school teachers was chosen from the selected settings in Abha.

Inclusion Criteria:

1. Teachers working in secondary school
2. Teachers willing to participate in study.

Exclusion Criteria:-

1. Secondary school teachers who are in leave at the time of study.

2. Teachers who had previous training programs about CPR and first aid.

Instrumentation:

Two structured format were used to collect data pertinent to the study.

The first was a pre/post interviewing questionnaire, and the second was a pre/post observational checklist.

(1) A pre/post interviewing questionnaire:

It was designed to test teachers' level of knowledge about first aid items and crisis management and covered the following:

(a) Sociodemographic data: Age, level of education, experience.

(b) Knowledge items regarding first aid and crisis management.

Scoring of knowledge test:

a. For first aid items:

Each right answer was given an assigned score and a zero was given for incorrect ones. The maximum score was 124, the score of less than (74.4) was considered unsatisfactory as (60% of the total score=74.4).

b. For crisis management items:

The maximum score was 30, the score of less than (18) was considered unsatisfactory as (60% of the total score=18)

(2) A pre/post observational checklist: It was used to observe teachers' performance of first aid items (wound, bleeding, fracture, diabetes, shock, burn, CPR, convulsion, Poison, and Asphyxia) and how to evacuate students during crisis (during fire putting on).

Scoring of Observational Checklist:

For first aid practice: Each statement was assigned a score of one (1) if the action done correctly and zero (0) if it was not done, therefore, the maximum possible score was 105. The score of less than (63) was unsatisfactory as (60% of the total score=63).

1- For evacuation of students during crisis (during fire putting on).

The maximum possible score was 10. The score of less than (6) was unsatisfactory as (60% of the total score=6)

Method

Written approval:-

The investigator obtained prior permission from respective authority to conduct the study. The purpose of the study was discussed to the director and the teachers to gain their cooperation.

Tools development:-

The two tools were developed by the researcher after extensive review of literature. All tools were tested for their content validity by five academic experts in the field of Medical Surgical Nursing. Modifications were done to ascertain their relevance and completeness.

Reliability

Reliability analysis was used to determine the extent to which the items in the questionnaire are stable, and related to each other. A test-re-test reliability was done to assess the consistency of the tool to measure items reliability. The questionnaire was given to 10 teachers and the answers were analyzed. The same questionnaire was given to the same group after 2 weeks and the answers were analyzed and computed to the results of the first test. The reliability was computed. It was 0.79

Protection of human rights:-

Participant's agreement to participate in this study was obtained after explanation of the purpose of the study. Each teacher was reassured that any information obtained would be confidential and only will be used for the study purpose. Oral consent was taken from each nurse to participate in the study.

Pilot study

It was examined on a group of 10 teachers in order to test the clarity and the applicability of the tools. Necessary modifications were done. Then they were excluded from the sample.

Study Period:

Data collection started from 1st of January 2013 and ended 1st of July 2013

Procedure for data collection:

A structured interview was utilized in order to fill out the study tools. This technique provided a high response rate and allowed the researcher to offer a protection against ambiguous or confusing questions. The participant observation technique was used in order to fill out the observational checklist.

Steps of data collection:

Step I : selection of subjects by using Probability Simple Random Sampling.

Step II : Investigator introduced herself to the subjects and notified about her aim, objectives and steps of the study and obtained a written consent.

- Step III** : conducted pre-test by using structured knowledge questionnaire.
Step IV : administered planned teaching programme.
Step V : conducted post-test for the teachers who had been exposed to planned teaching programme by using same structured knowledge questionnaire.

For the theoretical part

Each teacher in the studied group was scheduled for teaching sessions; each session lasted 20 – 30 minutes. Teachers received verbal instructions supplemented by written materials that included pictures as an illustrative guide for more clarification. These instructions were about first aid items and crisis management. The number of sessions varied according to their level of understanding (at a range of 3-4 sessions).

The researcher frequently ensured the acquisition of the provided knowledge through discussion, pictures, and posters.

Post test was carried out nearly after planned teaching programme given.

For the practical part

- First observation was done by the researcher using the pre/post observational checklist. Each teacher in the studied group was scheduled for practical sessions; each session lasted 20–30 minutes. Teachers received demonstrations supplemented by pictures as an illustrative guide for more clarification to teachers. The practical techniques were about first aid items (wound, bleeding, fracture, diabetes, shock, burn, CPR, convulsion, Poison, and Asphyxia) and how to evacuate students during crisis (during fire putting on).
- Repeating of demonstrations was carried out until the teachers mastered the skills. Pictures and posters were utilized to illustrate the techniques.
- Number of sessions varied according to the teacher's ability to master the given practice at a range of 4-5 sessions.
- Last observation was carried out by the researcher immediately nearly after completion of the sessions.

6. Statistical analysis

Results were statistically analyzed using statistical software package(SPSS). The following tests for significance were used: Means and Standard Deviation as well as percentage, frequency, Chi- Square tests, Correlation Coefficient, F- ratio and t-test for comparison of means. Probability level of 0.05 was adopted as the level of significance for testing hypothesis.

7. Results

Table (1) it is clear that the studied sample was aged more than 35 years, and more than two thirds had worked more than 10 years and (78%) are married. There are no statistical significance differences in relation to the above mentioned variables except for experience.

Figure1. Distribution of Teacher Qualification; the majority of the sample holding bachelor in education (87%).

Table (2)This table shows that the studied sample had satisfactory and higher mean score at post test in relation to first aid items and also in relation to mean total knowledge score, and there is very high statistical significance difference between pre and post test.

Figure (2): This figure shows percentage distribution of total knowledge score regarding first aid among the study group post intervention, as the majority of the sample had satisfactory knowledge post intervention.

Table (3) shows that the studied sample had higher satisfactory level of clinical mean score at post test in relation to clinical first aid items and also in relation to mean total clinical score, and there is very high statistical significance difference in relation to the above mentioned variables between pre and post test.

Table (4) This table shows that the studied sample had satisfactory and higher mean score at post test in relation to crisis management and also in relation to mean total knowledge score, and there is very high statistical significance difference in relation to the above mentioned variables between pre and post test.

Table (5) This table shows that the studied sample had satisfactory and higher mean score at post test in relation to evacuation of students during fire putting on with high statistical significance differences between pre and post test.

Table (6) This table shows that a positive correlation was found between age, experience, knowledge, and practices regarding first aid and crisis management. As well, knowledge and practices regarding first aid were positively correlated.

Table (1) Distribution Of Socio-Demographic Characteristics Of The Studied Sample

Items	No	%	Test
Age:			
30-	42	42	X ² = 0.357 n.s
35-	58	58	
Mean ± SD	41.33	±10.47	
Marital status:			
Married	78	78.0	X ² =0.693 n.s
Single	22	22.0	
Experience:			
Less Than One Year	13	13	X ² = 4.57*
2-5 Years	12	12	
6-10years	10	10	
More Than 10 Years	65	65	
Mean ± SD	9.08	±4.923	

(*) Statistically significant at p<0.05

Figure 1. Distribution Of Teacher Qualification

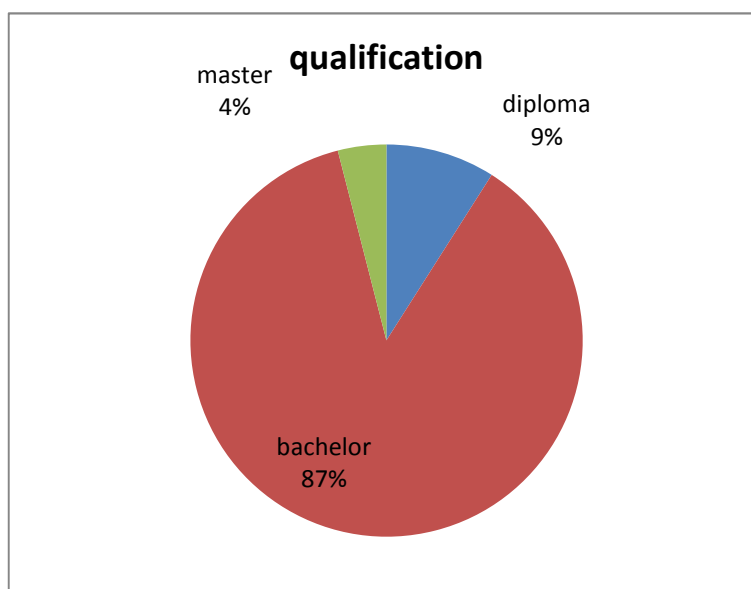


Table (2) Mean Knowledge Score of Studied Sample Pre and Post Intervention

Knowledge Score	pre (N=100)		post (N=100)		t-p value
	Mean	±SD	Mean	±SD	
General Information About First Aid	1.430	1.6345	7.27	+1.7	16.3***
Wound	2.890	2.0592	5.720	1.3786	11.42***
Bleeding	2.060	1.6194	6.220	1.5214	18.72***
Fracture	2.060	2.1547	7.200	2.0400	17.32***
Diabetes	5.650	6.3538	18.450	6.2915	14.31***
Shock	.230	.8147	10.730	3.3600	21.69***
Burn	2.590	2.5940	6.230	1.4829	12.18***
CPR	.460	1.4662	7.580	2.0259	16.47***
Convulsion	.390	1.0434	7.130	1.9314	21.59***
Poison	.550	1.0859	6.380	1.2774	16.87***
Asphyxia	.450	1.0480	6.020	2.3825	13.71***
Total Knowledge Score	18.760	15.457	79.6	34.428	11.69***

The score of less than (74.4) was considered Unsatisfactory as (60% of the total score=74.4).

Figure (2): Percentage Distribution Of Total Knowledge Score Regarding First Aid Among The Study Group Post Intervention.

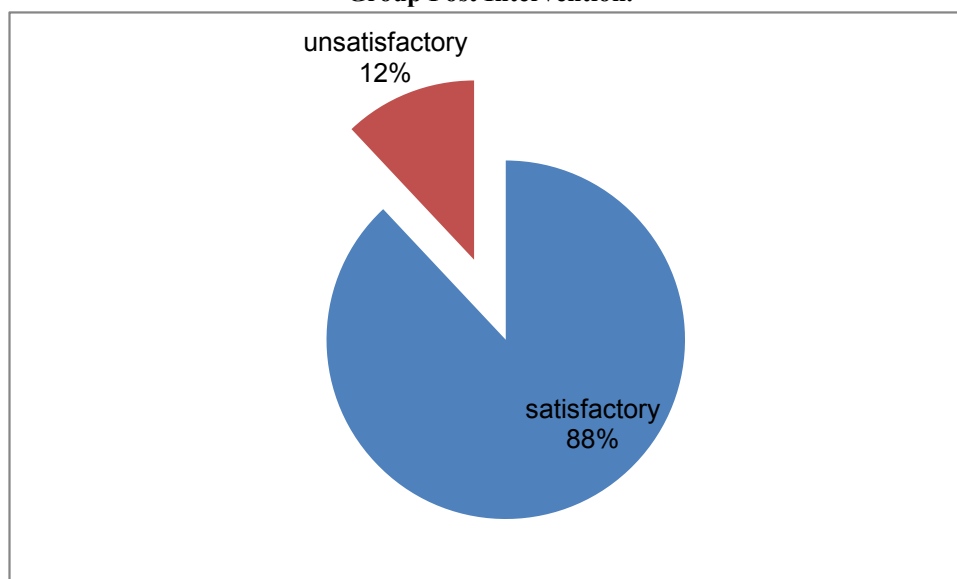


Table (3) Means Of Clinical Score Of Studied Sample Pre And Post Intervention

Clinical Score	Pre (N=100)		Post (N=100)		t-p value
	Mean	±SD	Mean	±SD	
General Information About First Aid	1.430	1.6345	7.27	+1.7	16.3***
Wound	2.890	2.0592	5.720	1.3786	11.42***
Bleeding	2.060	1.6194	6.220	1.5214	18.72***
Fracture	2.060	2.1547	7.200	2.0400	17.32***
Diabetes	5.650	6.3538	18.450	6.2915	14.31***
Shock	.230	.8147	10.730	3.3600	21.69***
Burn	2.590	2.5940	6.230	1.4829	12.18***
CPR	.460	1.4662	7.580	2.0259	16.47***
Convulsion	.390	1.0434	7.130	1.9314	21.59***
Poison	.550	1.0859	6.380	1.2774	16.87***
Asphyxia	.450	1.0480	6.020	2.3825	13.71***
Total Knowledge Score	18.760	15.457	79.6	34.428	11.69***

The score of less than (63) was unsatisfactory as (60% of the total score=63).

Table (4) Knowledge Score Of Studied Sample Pre And Post Intervention Regarding Crisis Management

Knowledge Score	Pre (N=100)		Post (N=100)		T-P Value
	Mean	±SD	Mean	±SD	
General Information About Crisis Management	1.20	1.03	6.25	1.43	15.00***
Dealing With Specific Types Of Crises: Review Of General Procedures In The Case Of Accidental Death	.50	.82	3.50	1.53	16.00***
Review Of General Procedures In Case Of Natural Disaster	1.40	1.3	4.80	1.2	13.10***
Review Of General Procedures In The Case Of A Suicide	.51	.73	4.10	.60	16.00***
Review Of General Procedures In The Case Of Bus Accident With Injuries	.76	1.4	4.70	2.08	14.98***
Total Knowledge Score	4.70	2.08	24.70	3.9	20.08***

The score of less than (18) was considered unsatisfactory as (60% of the total score=18).

Table (5) Means Clinical Score Of Studied Sample Pre And Post Intervention Regarding Evacuation Of Students During Fire Putting On.

Clinical Score	Pre (N=100)		Post (N=100)		T-P Value
	Mean	±SD	Mean	±SD	
Total Clinical Score	1.40	1.3	9.00	10.1576	13.23***

The score of less than (6) was unsatisfactory as (60% of the total score=6).

Table (6) Correlation Matrix Related To Age, Knowledge, And Practices And Experience Regarding First Aid And Crisis Management.

	Age	Knowledge Score Of First Aid	Knowledge Score Of Crisis Management	Practices Score Of First Aid.	Experience
Age	1.00				
Knowledge Score Of First Aid	.60*	1.00			
Knowledge Score Of Crisis Management	.62*	.02	1.00		
Practices Score Of First Aid	.80**	.60*	.03	1.00	
Experience	.50*	.80**	.70**	.60*	1.00

8. Discussion

Everybody in the community may face emergency cases that need first aid applications. The person who is supposed to save the life and to practice first aid application is the person who nearest to the victim. It is thought that training all the community including teachers, students, and drivers as well as health care professionals on first aid is very beneficial.

The findings of the current study revealed that the majority of the sample holding bachelor in education (87%), and was aged more than 35 years, and more than two thirds had worked more than 10 years and (78%) are married.

This study illustrated that the studied sample had lower mean score at pre test than post test in relation to first aid items and also in relation to mean of total knowledge score however, the studied sample had satisfactory and higher mean score at post test in relation to first aid items (wound, bleeding, fracture, diabetes, shock, burn, CPR, convulsion, poison and asphyxia) and also in relation to mean of total knowledge score, and there is very high statistical significance difference in relation to the previously mentioned variables between pre and post test. This results was in line with Ali et al., (2011) who reported that "public school teachers represent a potentially effective first-response component during disasters and isolated emergencies in the school environment, and most of teachers were deficient in both training and knowledge of basic life support modalities, these results can be explained by, Lack of effective, formal emergency care knowledge, and Lack of training programs in order to prepare teachers to face like these situations. Also this goes in line with A-Jundi et al., (2005) who found a great lack of knowledge and awareness among school health teachers regarding the management of trauma in Jordan at pre intervention while at post intervention, the studied sample had satisfactory knowledge in relation to first aid of trauma. Gagliardi et al, (2001) reported significant deficiencies among teachers for recognition and appropriate treatment of students' emergencies involving basic life support and treatment of profuse bleeding at pre intervention while at post intervention, students' knowledge was satisfactory. Bildik et al., (2011) concluded that First aid knowledge among students at the faculty of education was considered to be insufficient. First Aid should be a standard component of educational programs at all teacher training schools and should also be updated at regular intervals throughout their careers, as part of teachers' continuous professional development (First hypothesis was supported).

Regarding crisis management knowledge, the current study revealed that the studied sample had satisfactory and higher mean score at post- test in relation to crisis management items and also in relation to mean of total knowledge score, and there is very high statistical significance difference between pre and post- test. This result was supported with Ali et al., (2011) who reported that their study sample had higher mean score at post- test in relation to crisis management and also in relation to mean of total knowledge score, with very high statistical significance differences in relation to the crisis management between pre and post-test (Third hypothesis was supported).

Considering the first aid practice score, the current study shows that the studied sample had higher satisfactory level of clinical mean score at post - test in relation to clinical first aid items (wound, bleeding, fracture, diabetes,

shock, burn, CPR, convulsion, poison and asphyxia) and also in relation to mean of total clinical score, and there is very high statistical significance difference in relation to the mentioned variables between pre and post test. This result was consistent with Campbell et al., (2001); Eisenburger and Safar (1999), who found in their studies of two different groups including high school students who were given a first aid program, the results showed that the studied group had higher performance than the other group had. It was determined that they had higher mean of first aid knowledge related to mouth to mouth artificial breathing and cardiac compression practices. These results recommends that increasing first aid knowledge level increases the probability of practicing first aid applications more appropriately. Similarly, Bayraktar et al., (2009) discussed that " drivers' lack of skills on first aid but the training course increased first aid skill and knowledge level of the drivers and the method of practical education was effective. The method that we followed during the training course was to give special emphasis to practice by participants. This is because the manual practice is the most advisable to be taught through clinical skills whereas, lecturing is suitable for cognitive knowledge only and not sufficient alone to improve psychomotor skills." and also, they recommended that the drivers participating to first aid should practice the first aid applications and attend future first aid courses periodically. In addition, it can be suggested that first aid training programs should be evaluated in terms of the incidence of bystander first aid practices and patient's outcomes." (second hypothesis was supported).

The current study revealed that a positive correlation was found between age, knowledge, experience and practices regarding first aid and crisis management. As well, knowledge, and practices regarding first aid were positively correlated. In the light of these results, Abd El-Aty et al., (2005) reported in their study that " because of the positive relation between mother's age and their knowledge regarding causes of home accidents the study recorded that (16.6%) of mothers aged 45-55 years were had higher percentage of complete answer." Also, mothers' experience had effect on mothers' practice in different types of home accidents. They also concluded that there is needed for educational programs for parents, especially mothers with young children, about home accidents and how to manage them." This goes in line with Adly, (2000) who found that majority of mothers lacked knowledge about accident prevention and safety measures. Sorour, (2000) found that the majority of studied mothers gave incomplete responses regarding epilepsy before his educational program and significant improvement was recorded after it.

The finding of the current study reflects that a significant improvement after the program implementation. The educational program was successful in upgrading knowledge of teachers in emergency situations as burns, fracture, bleeding, wound, diabetes, CPR, and asphyxia and dealing with crisis management. All these findings make us think that spreading first aid training courses to all the community benefits very much.

9. Conclusion

- The current survey revealed a general lack of information among school teachers regarding disaster management.
- The current survey revealed that majority of the schools has been given low priority to disaster education. No disaster plan was available in schools.
- The health education and training program designed by researchers succeeded to improve the knowledge and skills of school teachers in first aid and dealing with wounds, , burns, shock, bleeding, CPR and fractures. And also, dealing with crisis management and evacuation of students during fire. This improvement was proved statistically

10. Recommendations

- Nurses should highlight the need for disaster safety education; it is evident that disaster has a significant impact on school children.
- School authorities, should take initiative and sensitize the school community (School nurse, students, teaching and non teaching staff, management staff and parents) regarding disaster preparedness and management. Therefore, it is strongly recommended that each school must prepare their own disaster management plan. Also all the important telephone numbers should display at prominent places of the school for emergency medical services.
- Teachers should take initiative to improve their knowledge and practices by using booklet, posters, brochures, charts etc. The school authority should provide such material to the teachers.
- The implementation of the health education and training program designed by researchers in similar settings to improve the knowledge and skills of school teachers in first aid and dealing with wounds, burns, shock, bleeding, CPR and fractures and dealing with crisis management.

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