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Abstract:

Students are exposed to various types of injuries at schools that need first aid. School-teachers are often the first individuals to witness and handle these injuries. Consequently, first aid competencies should be attained by school-teachers to save students' life. This study was aimed to evaluate the effects of first aid educational intervention on students-teachers knowledge and attitudes in the Lebanese university, faculty of education. This study was conducted on a convenient sample of 50 students-teachers. Data were obtained via questionnaire used as pre/post-test, and a survey distributed to students-teachers to test their knowledge and attitudes. Concerning their first aid knowledge, the mean of the grades in pre-test was (14.32+ 4.58) and it was improved after the educational intervention to (21.84+2.44) in the post-test. Regarding their attitudes, all the students, before and after the educational intervention, had positive attitudes towards first aid. Also, the majority of them (90%) were very satisfied at the end of the intervention. A significant improvement in students' knowledge after first aid educational intervention was seen. Moreover, students had positive feedback about the first aid educational intervention. It is recommended that first aid course be integrated in the curriculum of the faculty of education at Lebanese university.

Key words:

First aid, Knowledge, Attitudes, students-teachers, Health education.

Introduction:

Injuries resulting from car accidents, disasters, falls, and violence kill more than five million people worldwide annually and cause harm to millions more. These injuries account for 9% of global mortality. Cardiac arrest remains a substantial public health problem and is considered as one of the leading causes of death in many parts of the world (Lloyd-Jones, 2010). In Lebanon, the mortality rate was 5.4/1000 in 2010; cardiac arrests were the most frequent causes of death (Kanaan, 2010). In 2014, car accidents caused 14516 Injuries, and killed 229 victims (YASA, 2016). However, these huge numbers of mortalities are often lowered by performing first aid and cardiopulmonary resuscitation (CPR) interventions (Lateef, 2001).

Moreover, all humans encounter many injuries during their life time which are due to many factors. Furthermore, studies show that about 25% of these childhood injuries happen in school or are school related (LASSA, 2010). School children are at risk for injuries in classrooms, gyms, playgrounds and playing fields (Allen, 2012). Most injuries are minor and can be treated without medical attention such as bruises, minor fractures, sprains, and strain. However, schools are not immune from the threat of fatal injury or death of school-age children. Furthermore, schools in Lebanon have many safety problems, and students have many health diseases and are at risk to be exposed to many health injuries (GSHS, 2005).

Thus, knowledge of first aid, when properly applied, can bridge the gap between temporary or permanent injury, rapid recovery, or long-term disability. Moreover, rapid first aid interventions can minimize these injuries and prevent death of students. Many studies have shown that early bystander first aid and CPR are very important factors for victims' survival (Graesner, 2008; Bohm, 2007).

First aid is the treatment of any injury or sudden illness before professional medical help can be provided. The aim is to prevent the condition getting worse, ensuring fast recovery and preserving the precious human life (Masih, 2014). Furthermore, first aid is an educational course in fundamental emergency treatment for both the general public and healthcare providers. It provides a wide variety of healthcare professionals and public the ability to recognize different life-threatening emergencies, and provide first aid interventions in a safe, timely and effective manner. This includes recognizing the most

common emergencies such as fractures; dislocations; sprains; shock; burns; wounds; amputations; poisoning; animal bites; cardiac arrests; choking; and other emergencies, its causes, signs and symptoms, complications, and its correct first aid or management. This includes applying splints and bandages, controlling bleeding, applying dressing, and performing CPR and abdominal thrust. Moreover, many important and basic principles of management are taught including providing safety, calling for help, assessing victim, as well as positioning and transferring the victim (Berg, 2010).

Children spend most of the time in school under the direct supervision of teachers. They are also exposed to various types of epidemiological factors in the school, which influence their present and future state of health (Masih, 2014). Hence, first aid should be known by school teachers to meet the urgent needs of these school children during minor injuries. Teacher is the key person in school who attend such type of victims and always in a position to save the life (Gupta, 2004). Trained teachers play an important role not only as providers of first aid to children at school but also as mentors encouraging pupils to acquire their own first aid competencies (IFRC, 2015). Many countries have laws that make first aid training compulsory for teachers in schools (Law, 2012; IFRC, 2015; El Consejo, 2015). However, Lebanese law does not mandate first aid training for schoolteachers (MEHE, 2016).

Furthermore, Lebanese schools do not have highly educated healthcare providers (school nurses, doctors, social workers) to maintain students' health and to provide first aid when needed. Teachers (health advisors) take the role of health care providers in offering health services for these students and they are the only persons who deliver first aid. These health advisors don't have the sufficient knowledge and skills regarding first aid. Knowing that health advisor is a schoolteacher from any specialty who is chosen by the school to provide basic health care services for students in the school. The task shifting of health care roles from professionally trained doctors and nurses to school health advisors are considered to be a means to make more efficient use of the school health services currently available and to prepare a more competent school-teachers who will be the future health advisors. Thus, students' health will be maintained, and healthy school environment will be ensured (Khayrazad, 2013).

On the other hand, the curriculum of faculty of education didn't include first

aid in its health education course (table.1). Consequently, students-teachers are graduated from the faculty of education without any first aid knowledge and skills. Moreover, the health education curriculum of the Lebanese schools is seen as ineffective, and 80% of the school principals reported that their schools do not offers any health educations to their students. (GSHS, 2005) Also, health education curriculum at schools doesn't include first aid, but some first aid training sessions are suggested by the ministry of education to be provided through national organizations (Red Cross) (CERD, 1998). Besides, Less than 20% of the school principals reported that their schools offer additional health educations to students through volunteers, nonprofit societies or institutions (GSHS, 2005).

Table.1: Content of Health education course

Week	Content
1-2-3	The basics of alimentation and nutrition
4-5-6	The energetic components of proteins, lipids, and carbohydrates
7	High lipids: nutritional prevention and interventions.
8	Macro and micro-nutrients, other nutritional substances, nutritional strategies and interventions targeting the whole population.
9-10-11	Vaccination and types of vaccines
12-13	.Most frequent genetic diseases

Furthermore, no studies were enrolled yet in Lebanon to assess students-teachers knowledge and attitudes about first aid. Therefore, this study was conducted to evaluate the effects of a first aid educational intervention on students-teachers knowledge and attitudes in the Lebanese university, faculty of education.

Purpose of the study:

The current study aims to evaluate the effects of teaching first-aid on students-teachers knowledge and attitudes, to introduce these principles into the curriculum of the Lebanese university/ Faculty of education, as well as passing a new educational law that makes first aid teaching as mandatory part of university curriculum in Lebanon. Thus, future teachers will be provided

with the necessary knowledge concerning first aid that can be applied in their career as schoolteachers or school health advisors. In addition, they can transmit this knowledge and skills to their students. Also, this planned study will help to increase the community awareness related to life saving interventions by disseminating it to the students through the teachers, and to the families through the students. Thus, the unexpected out-of-hospital mortality in Lebanon will be decreased. The main research questions explored were:

- Does integrating first aid principles improves students-teachers knowledge in first aid?
- Does integrating first aid principles improves students-teachers attitudes toward first aid?

Research hypothesis

- Integrating first aid principles improves students-teachers knowledge in first aid.
- Integrating first aid principles improves students-teachers attitudes toward first aid.

Method

This is quasi-experimental mixed study. It compares the effects of first aid educational intervention regarding its outcomes (quantitative and qualitative data) obtained from the differential of pre- and post-test results as well as program evaluation and students' attitude through open-ended question.

Participants

A convenient sample of 50 students-teachers aged between 18-26 years was included. The sample involved was students-teachers from the second academic year of "Early childhood education" specialty, from two different sections (French and Arabic) at the Lebanese University, faculty of education, located at Beirut.

Study tools

The planned study included three tools: educational tool, questionnaire tool,

and intervention evaluation tool.

Tool 1: Educational tool:

Educational tool was designed according to the core AHA/ Emergency Cardiovascular Care (ECC) concepts. It included Power-Point presentation about different emergencies; its definitions, causes, signs and symptoms, complications, and the first aid of each emergency. This presentation was prepared and presented by the researcher based on the latest AHA recommendations for first aid and CPR. (Berg, 2010). It was simplified in both the presentation of the content and its size, and illustrated with explanative images. BLS torso, and first aid kit were used for the demonstration of the first aid skills delivered by the researchers.

Tool 2: Questionnaire tool: (Appendix 1)

This questionnaire was used as Pre- and Post-test. It was developed by the researchers to test students' knowledge about first aid before and after educational intervention. This tool consisted of 30 multiple choices questions distributed as follow:

Questions 1 to 6 measured students' knowledge concerning the basic principles of first aid.

Questions 7 to 22 measured students' knowledge concerning fractures, dislocations, sprains, bleeding, burns, frost bites, shocks, as well as poisonings bites and stings.

Questions 23 to 30 measured students' knowledge concerning Basic Life Support (BLS) including cardio-respiratory arrest, choking, as well as Cardiopulmonary resuscitation (CPR).

Also, open-ended question was used and filled before and after the educational intervention to test the variation in the student's attitudes towards the importance of learning first aid.

Tool 3: Intervention evaluation tool: (Appendix 2)

This tool was developed by the researchers to identify students' feedback and attitudes towards the educational intervention at the end.

It included seven closed-ended questions which test the organization, efficiency, and clearance of the intervention, as well as the overall satisfaction toward it. A Likert-scale of 3 points was used to score the students' responses, with fair =1, good =2, and very good =3. Moreover, an open-ended question was used to identify students' suggestions for the future.

Study procedure

An official permission to conduct this study was obtained from the responsible authorities at Faculty of education in the Lebanese University.

The tools for data collection were developed by the researchers after reviewing the relevant literature.

The educational material about first aid was developed as a power point presentation according to the core American Heart Association/ Emergency Cardiovascular Care (ECC) concepts.

The tools were tested for content validity by a jury of 5 experts in the field of critical care medicine, as well as in the field of science education; accordingly necessary modifications were done.

Students meeting the inclusion criteria were included in the study.

A pilot study was done on 10 students to test validity of the tools and required changes were done.

The study was conducted over 4 sessions (1.5 hours for each) during 2 weeks as follow:

In the first session: An explanation of the purpose of the study was done for 10 minutes, a consent for participation in the study was obtained from the participants (5 minutes), then an assessment of the students' knowledge (pre-test) about first aid was done using tool 2 for 15minutes, then an introduction to first aid was done with an explanation for the definition, goals, and principles of management of first aid through power-point presentation for 60 minutes.

In the second session: An explanation of the most common emergencies was done for 90 minutes using power-point presentation, followed by demonstration of first aid skills on real patient. These emergencies included fractures, dislocations, sprains, and bleeding.

In the third session: An accomplishment of the remaining emergencies including burns, frostbite, poisonings bites and stings, and shock was done for 90 minutes using power-point presentation, followed by demonstration of first aid skills on real patient.

In the Fourth session (last session): An explanation of BLS including cardio-respiratory arrests and choking was done for 75 minutes followed by demonstration of CPR skills on CPR torso, then post-test and intervention evaluation were done using tool 2 , and tool 3.

The effects of educational intervention on students' knowledge was determined by comparing the grade difference between pre-test and post-test questionnaires. The effects of the educational intervention on students' attitudes was determined by the response of students on open-ended questions regarding the importance of first aid, as well as by the students' rating of the educational intervention.

Statistical analysis

Data was analyzed using SPSS software package version 20.0 (SPSS, Chicago, IL, USA). Quantitative variables were expressed using range, mean, and standard deviation, while qualitative variables were expressed as frequency and percent. Paired Student's t-test will be used to compare pre-test and post-test grades. P value was assumed to be significant at 0.05.

Ethical consideration

The consent of the Lebanese university administration to participate in the study was obtained. Also the consent of the students-teachers was obtained to participate in the first aid training session, and to perform the anonymous pre- and post-training theoretical exam.

Results

Characteristics of the students-teachers

Table. 2 shows the characteristics of the students-teachers involved in the study. Concerning age, it is found that the majority of students (31 students (62%)) are between 18 and 20 years old, 15 students (30%) are in the age category of 21 to 23 years old, and 4 students (8%) are between 24 to 26 years

old. Regarding gender, all students (100%) are females.

Moreover, this table illustrates the distribution of students regarding their specialty. It shows that the number of students from Early Childhood specialty – Arabic section is 30 (60%), while 20 students (40%) are from Early Childhood specialty – English section. Furthermore, concerning previous first aid training, it was found that the majority of students-teachers (49 students (98%)) didn't receive first aid training previously; however, only 1 student (2%) had received previous first aid training.

Table.2: Characteristics of students-teachers

Characteristics	Number	(%) Percentage
(Age (years		
18-20	31	62%
21-23	15	30%
24-26	4	8%
Gender		
Male	0	0%
Female	50	100%
Major		
Early Childhood (Arabic)	30	60%
Early Childhood (French)	20	40%
Previous First aid training		
Yes	1	2%
No	49	98%

Students-teachers' Knowledge attainment about first aid

Regarding students' grades before and after the first aid education intervention,

figure.1 compares between the pre- test and post-test grades. It shows that the students’ grades before the educational intervention are lower than the grades after the intervention for all the students.

Figure.1: Students-teachers’ grades before and after the educational intervention

Moreover, table.3 demonstrates that the mean of the pre-test grades is (14.32+ 4.65), while the mean of the post-test grades is (21.84+2.43), with the total questionnaire grade over 30. Paired samples t-test shows that the post-test knowledge grades are higher than the pre-test grades with a significant difference of p= zero (P < 0.05).

Table.3: Comparison of students-teachers’ grades before and after the educational intervention

Students’ grades /30	Mean	Std. Deviation	P-Value
(Before (N=50	14.32	±4.58	
(After (N=50	21.84	±2.44	*0

*P-value is significant <0.05

Students-teachers’ Attitudes towards First aid

Table.4 compares students’ attitudes concerning first aid before and after the educational intervention through open-ended question. It shows that all the students (100%), before and after the educational intervention, consider first aid important.

Moreover, when comparing the “Why” of its importance; 18 students (36%) before the educational intervention mention that “First aid is important for the management of emergency situation in the school”, whereas this number increases to 25 students (50%) who mention the same issue after the educational intervention. Moreover, 4 students (8%), before the educational intervention, mention that “First aid is important for his/her daily life and to serve community”, while this number increases to 8 students (16%) who mention the same thing after the educational intervention.

On the other hand, two different new themes regarding first aid importance appears in pre and post-interventions. In pre-intervention, 28 students (56%) mention “Learning First aid is important for teaching first aid for other teachers”, while this theme changed in post-intervention, with 16 students (32%) who mention that “First aid is important as a basic requirement for teachers as health advisors”.

Table.4: Students-teachers’ Attitudes towards BLS before and after the educational intervention

Student’s reflection (Open-ended question)							
Before				After			
•Do you think first aid training/ program is important for teachers, why?				•Do you think first aid training/ program is important for teachers, why?			
No: 0 (0%)	Yes: 50 (100%)			Yes: 50 (100%)			No: 0 (0%)
	For the management of emergency situation in the school (first person in front of (students	For his/her daily life and to serve community	Teaching first aid for other teachers	For the management of emergency situation in the school (first person) in front of (students	For his/her daily life and to serve community	Basic requirement for teachers as health advisors	
	18 (36%)	4 (8%)	28 (56%)	25 (50%)	9 (18%)	16 (32%)	

Students’ feedback about the educational intervention

Concerning the student’s feedback about the educational intervention of first aid, table.5 shows that none of the students (0%) describes the organization of the training session as fair, while 6 students (12%) describes it as good, and 44 students (88%) describes it as very good.

With respect to the student’s feedback concerning the enough time given for discussion during the training session, none of the students describes it as fair (0%), whereas 7 students (14%) describes it as good, and 43 students (86%) describes it as very good.

While concerning the feedback about the effectiveness of the educational

intervention in communicating the training objectives, none of the students describes it as fair (0%), while 5 students (10%) describes it as good, and 45 students (90%) describes it as very good.

While with respect to the obtained first aid knowledge, none of the students describes it as fair (0%), but 9 students (18%) describes it as good, and 41 students (82%) describes it as very good.

Furthermore, this table shows the student's overall satisfaction with the educational intervention where none of them describes it as fair (0%), while 5 students (10%) describes it as good, and the majority of them, 45 student (90%) describes it as very good.

Finally, this table expresses students suggestions, it shows that the majority of them (21 students (42%)) suggest "integrating first aid in the health education course", while 15 students (30%) suggest "adding practice to the intervention", whereas, 14 students (28%) suggest "extending the time of the sessions".

Table 5: Students' feedback about the educational intervention

Subject	1	2	3
	Fair	Good	Very Good
The training session is well organized	0%	12%	88%
Each subject receives enough time for discussion during the training	0%	14%	86%
The presentation is effective in communicating the training objectives	0%	10%	90%
First aid knowledge obtained	0%	18%	82%
My overall satisfaction with the training is	0%	10%	90%
Other suggestions	(Number (n		Percentage (%)
To add practice to the intervention-	15		30%
To extend the time of the sessions-	14		28%
To integrate first aid in the health education course-	21		% 42

Discussion

No similar studies evaluating the first aid knowledge among students-teachers in Lebanon have been conducted yet. Thus, this study discussed the effects of first aid educational intervention on students' knowledge and attitudes.

Regarding students-teachers characteristics, the current findings show that the majority of students are below 21 years old. This contradicts similar studies' results which showed that the majority of participants were above 40 years. (Joseph, 2015; Al-Tameemi, 2016) This is due to the type of participants included in this study, in which they were students-teachers, while the participants included in other studies were teachers. Moreover, all students-teachers are females. Similar study done by Masih (2014) showed the same result where 94% of teachers were females. These findings may reveal that females are having better desire than males to choose the education discipline, and become future teachers. In addition, the working time in schools are utmost appropriate for females in Lebanon.

Concerning previous first aid training, the current results show that the majority of students (98%) didn't receive previous first aid training. This finding is supported by other studies' results done by Masih (2014) and Behairy (2016) which found that 88%, and 86% of participants didn't attend previous first aid training, respectively. This is due to the lack of awareness of the Lebanese authorities including MEHE, MOH, and Lebanese university directors concerning the importance of first aid knowledge and skills for teachers.

Regarding Students-teachers knowledge, the present study demonstrates that the pre-test knowledge grades are low. Thus, the overall level of knowledge before the educational intervention is poor with a mean grade below the average (14.3/30). Several studies assessed the first aid knowledge among schoolteacher's worldwide (Al-Robaiaay, 2013; Devashish, & Bharat, 2013; Joseph, 2015; Krishna, 2013; Kumar, 2013; Masih, Sharma, & Kumar, 2014) and most of them reported poor first aid knowledge before any educational intervention. This can be due to the poor awareness toward the benefits of having first aid knowledge, and the lack of first aid workshops and training for schools teachers, as well as to the absence of first aid course in the curriculum of faculty of education at the Lebanese university. However, some

studies found the opposite (Al-Tameemi, 2016; Kumar, 2013). For example, Al-Tameemi (2016) found that the majority of participants had good to far knowledge concerning first aid. This may be due to the ease of most of the questions, and the use of self-administered questionnaire in which obtaining answers from other sources couldn't be excluded. (Al-Tameemi H., 2016)

Concerning first aid knowledge attainment, when comparing the pre and post-test grades before and after the educational intervention, the current study shows that the mean of the post-test grades (21.84+2.43) is higher than the pre-test grades (14.32+ 4.65) with a statistical significant difference. These findings are consistent with Masih (2014) and Abdella (2015) who reported that participants' knowledge was improved after a first aid teaching program. Also, these findings are in line with a study conducted in Egypt, by Behair (2016) on intervention program for the health advisors about BLS and first aids. The study results revealed that high significant improvement of knowledge the studied group in the post-intervention in comparison to pre-intervention. In addition, a study done in Turkey by Bildik (2011) on the schools candidates showed that there is an improvement in participants' knowledge in first aid between the pre-intervention and post-intervention with a statistical significant difference. In the current study, this can be related to the direct effect of educational intervention on students' knowledge, in which the post-test was done directly after the intervention.

Concerning students' attitudes and feedback toward first aid, the current study demonstrates that all the students (100%) had positive attitudes toward first aid, before and after the educational intervention, and they consider first aid as important. Many studies investigated students' attitudes towards first aid before any educational interventions (Joseph, 2015; Abernethy, 2003; Gagliardi, 1994; Al Tameemi, 2016). The results of these studies showed positive attitudes towards the importance of first aid, its learning, and its applicability. When investigating the causes of its importance, the majority of students in the current study responded "For teaching other teachers the first aid". This is in line with the results of a study done by Joseph (2015) who find the same result.

When investigating the variation in students' attitudes towards first aid before and after the educational intervention, no studies found in the literature that compared this issue. The current study doesn't found any variation in attitudes

regarding the importance of first aid, this may be related to the positive attitude among the students towards first aid before the educational intervention, and thus this attitudes stay positive after the educational intervention with some variations in the cause of its importance. This variation in the “why changed from “teaching another teachers to “basic requirement for teachers as health advisors” in which students’ valued more its importance and described it as mandatory requirements for future teachers.

Moreover, regarding students’ feedback towards first aid after the educational intervention, the majority of participants gave positive feedback regarding its efficiency, adequacy, and organization. In addition the overall satisfaction about the intervention was found to be “very good among the majority of participants (90%) in the current study. This is in accordance with Eze, Ebuehi, Brigo, Otte, & Igwe (2018) who found similar results in which the mental disorders ‘first aid program was found highly effective among participants. The participants mentioned that the topics covered were adequate (69.2%), teaching method used was good (91%), the time was sufficient (88%). Moreover 95% of them were very satisfied about the program. This can be related to the lack of knowledge about first aid before the intervention, and to the effects of first aid knowledge in providing positive feedback after the intervention.

Conclusion

It can be concluded from the current study that there was a significant improvement in students’ knowledge after first aid educational intervention. Also, the positive students’ attitude towards the importance of first aid was improved in its “why” (reasons of this perception was more logic after the intervention). Finally, the students-teachers were very satisfied about the first aid educational intervention.

Recommendations:

The current study recommends that first aid should be a mandatory course for students-teachers at the Lebanese university which includes cognitive, practical, and affective domains. Also, it should be incorporated as well in high schools’ curriculum. Moreover, first aid education should be included as a community health program for education and awareness of lay people. In the other hand, further research is needed to assess the impact of such

programs on the incidence and consequences of out-hospital injuries.

Limitations:

The limitations of our study include the small sample size, the convenience sampling methodology instead of random sampling, the lack of a control group, and finally the assessment of knowledge changes immediately post intervention and the absence of the assessment of knowledge retention after the intervention.

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-Appendix 1: Questionnaire tool (pre-test / post-test)

Pre- Post Test / First Aid

Participant's Password: Major:

Age: Gender: Previous Training: Yes/ NO

Abbreviations: Cardiopulmonary resuscitation (CPR), Circulation-Airway-Breathing (CAB).

I- Please, circle the correct answer:

A- Introduction to first aid (basic principles):

1- First aid is:

- a- The treatment given to victims in the hospital.
- b- Someone who provides first aid.
- c- The medical treatment given by the doctor to victims out the hospital.
- d- The immediate care given to victims before professional help arrives.

2- The main goals of first aid are:

- a- Restoring vital functions, preventing deterioration, ensuring better recovery.
- b- Treating injuries, preventing car accidents, controlling bleeding.
- c- Giving medications, communicating with trained help, teaching community.
- d- Ensuring safety, having public relations, preventing diseases.

3- When arriving on the scene of an incident, in what order you should manage?

- a- Give first aid; Make the area safe; Call for help; Assess situation; Assess victim.
- b- Call for help; Assess victim; Give first Aid; Assess the situation; Make the area Safe.
- c- Assess situation; Make the area safe; Assess victim; Call for help; Give first aid.
- d- Call for help; Assess situation; Make the area Safe; Assess the victim; Give first Aid.

4- When calling the Emergency system (Red Cross), you should inform about:

- a- Location of the incident, number of people around you, number of victims.

b- Number of first aid providers needed, number of victims, location of event.

c- Location of the incident, number & conditions of victims, aid needed, who is calling.

d- Time of the incident, who is calling, conditions of victims.

5- The Red-cross phone number in Lebanon is:

a- 125.

b- 112.

c- 140.

d- 115.

6- First aid kit should include:

a- Gauze, towels, adhesive tape, scissors, antiseptic swab, gloves, mask, bandages.

b- Food, towels, adhesive tape, surgical kit, syringes, water bottle, soap.

c- Papers, scissors, antiseptic swab, gloves, mask, bandages, thermometer.

d- None of the above.

B- Fractures, dislocations, sprains, and strains

7- Signs and symptoms of closed fracture include:

a- Pain, deformity, limited movement, swelling, local bruising.

b- Loss of consciousness, absence of breathing, swelling.

c- Edema, pain, absence of movement, deformity at the joint.

d- Edema, pain, absence of movement, bleeding.

8- Treatment of a fracture includes:

a. Splinting the injured limb in position found.

b. Minimizing the movement of the affected limb.

c. Applying ice to the affected area.

d. All of the above.

9- To treat a suspected dislocated elbow, you should:

a- Apply bandage.

b- Cover the elbow with clean towel.

c- Fix the elbow as it is using splints, apply sling to support the arm.

d- Apply cold water on the site of injury.

10- The accepted treatment for a sprained ankle is:

a- Remove the shoe and elevate the ankle.

b- Apply an ankle bandage for support, elevate and apply cold towels.

c- Keep the shoe on, and apply ankle bandage around the shoe.

d- Have the victim walk on his ankle.

C- Bleeding:

11- When giving care for external bleeding, what should you do first?

a- Wait for Ambulance.

b- Apply direct pressure with clean towel on the injured part.

c- Apply ointment on the injured part.

d- Fix the injured part.

12- The accepted treatment for a nosebleed is:

a- Use direct pressure, elevation and pressure points to control the bleeding.

b- Tilt the head back and tightly squeeze the nostrils.

c- Have the victim lean forward. Apply gentle pressure on the nostril. Apply

cold towels.

d- Lay the victim on his back and treat for shock. Apply heat if available.

D- Wound:

13- The first aid for wound is:

a- Flush the wound with clean water or saline, cover the wound with clean gauze or pad.

b- Apply ointment (cream), and cover the wound.

c- Apply coffee to stop bleeding, and cover the wound.

d- Apply water, and do not cover the wound.

E- Burn:

14-To treat a third degree burn you should:

a- Apply a good quality burn cream or ointment without covering the burn.

b- Clean the area thoroughly with soapy water.

c-Apply sterile gauze or clean cloth to protect burn.

d-Apply cool running water until there is little or no remaining pain.

15- A 15-year-old boy has just splashed a chemical on his face. After sending someone to call for an ambulance, you would:

a- Cover the wound with pad.

b-Reassure the victim until ambulance arrives.

c- Flush the burned area with large amounts of water until the ambulance arrives.

d- Apply ointment on the burn.

16- You are caring for a victim with a burned hand. Put the hand in cool water if:

- a- The burns are very deep.
- b- There are burns with open blisters.
- c- The burns are minor (1st degree) with no open blisters.
- d- The burns penetrate all layers of the skin.

17-A boy with frostbite on his feet, what should you do?

- a- Rub his feet vigorously until feeling and color return.
- b- Apply ointment (cream).
- c- Soak feet in hot water of 105 .
- d- Soak feet in warm water not more than 40, then wrap with sterile dressing.

F- Shock:

18- How would you treat a conscious victim displaying signs of shock?

- a-Ask him to lie down, raise his feet, cover him with a blanket.
- b- Put him in recovery position.
- c-Ask him to sit against a wall or stable surface.
- d- Put him in a lying position and support the neck.

19- Shock develops when:

- a- The victim loss a small quantity of blood.
- b- There is not enough blood flowing to the cells of the body.
- c- The victim has a low blood pressure.
- d- There is not enough blood flowing to the brain.

G- Poisonings bites and stings:

20- The first aid for snakebite is:

- a-Ensure safety, Assess signs of life, Call for help, Maintain CAB, Apply

water on the site, Put the victim in recovery position.

b- Call for help, Apply dressing on the site of injury, Wait for help.

c- Start CPR, Call for help, Put the victim in recovery (lateral) position.

d- Ensure safety, Assess signs of life, Maintain CAB, Wait for help.

21- What is the first aid management for a victim with swallowed poisoning?

a- Ensure safety, Assess signs of life, Call for help, Maintain CAB, Check for the type of poison, Seek medical advice, Place him in recovery (lateral) position, Wait for help.

b- Check type of poison, Assess signs of life, Call help, Place victim on his back, Wait for help.

c- Maintain CAB, Seek medical advice, Wait for help.

d- Ensure safety, Call for help, Seek medical advice, wait for help.

22-The most common signs and symptoms of major snake bites are:

a- Burn at the site of the bite, muscle cramps, headache.

b- Dyspnea, deformity of the bitten site, choking.

c- Pain, itching, yellow skin color, muscle cramps, dyspnea, convulsions.

d- Nausea, vomiting, sweating, weakness, swelling and pain of the bitten area.

H-Basic Life Support: (Cardio-respiratory arrest & Choking)

23- When dealing with a non-responding victim, the first aider should maintain:

a- Circulation- Airway- Breathing (CAB), with early defibrillation.

b- Airway- Breathing- Circulation (ABC), with early defibrillation.

c- Breathing- Airway- Circulation (BAC), without defibrillation.

d- Airway- Circulation- Breathing (ACB), with early defibrillation.

24- What is the meaning of CPR, when it should be performed?

a- Cardio-Pulmonary Resuscitation, performed for victims with cardiac/respiratory arrest.

b- Cardio-Pulmonary Resuscitation, performed for cardiac arrest only.

c- Cardio-Pulmonary Resuscitation, performed for respiratory arrest only.

d- Cardio-Pulmonary Resuscitation, performed for victims who need first aid.

25- What is the ratio of compressions/breaths that should be administered in CPR:

a- 30 compressions / 30 breaths.

b- 30 compressions/2 breaths.

c- 2 compressions /30 breaths.

d- 5 compressions / 1 breath.

26- Where do you place your hands when doing chest compressions for adults?

a- On the patient's heart.

b- Center of the victim's chest between the nipples.

c- On the patient's abdomen.

d- On the left side of the chest.

27- What should be the depth of chest compressions in Adults?

a- 1 centimeter (cm).

b- 5 cm.

c-10 cm.

d- 5 millimeters.

28-The best place to check for a pulse during CPR is:

a- The arm

b- The neck

c- The foot

d- Inside the left armpit

29- Choking is:

a- The absence of blood flowing to the cells of the body.

b- The blockage of an airway due to a foreign object.

c- The inability to speech.

d- The loss of consciousness due to heart attack.

30- An eight years-old child is unconscious and the airway is blocked. You should:

a- Give abdominal thrusts (Pushes).

b- Begin CPR.

c- Begin Rescue Breathing

d- Wait for ambulance.

II- Please answer the open question:

- Do you think first aid training/ course is important for teachers, why?

-Appendix 2: Intervention evaluation tool:

First Aid Educational Intervention Evaluation

Participant's Password:Major:

Age: Gender: Previous Training: Yes/ NO

Please, rate each item of evaluation on the scale from 1 to 3:

No.	Subject	1 Fair	2 Good	3 Very good
1	The teaching session is well organized			
2	Each subject receives enough time for discussion during the training			
3	The presentation is effective in communicating the training objectives			
4	The lecturer is knowledgeable			
6	First Aid knowledge are obtained			
7	My overall satisfaction with the workshop is			

Please feel free to write other comments:

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