



## The effect of the first-aid training program on students' traditional approaches that use in emergencies

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### Abstract

First aid is the initial care for ill and injured. It helps to urgently manage the health problems of adolescent children. Teaching first aids should be compulsory in all students through advanced methods of teaching strategies. Thus, there is a need for this type of study to develop educational programs. Therefore, this study aimed to assess the design, implement and evaluate a training program for students of the preparatory year for colleges of literary studies to improve their knowledge and practices regarding first aid.

Female students enrolled in the preparatory year collage who were studying in the Literary at Hail University were the study participants pre-posttest research design was used. Data from a convenient sample of 200 students for first-year preparatory collage in the literary studies were recruited by a structured interview questionnaire included demographic characteristics. Health Knowledge and practices regarding first aid. Results of this study revealed that all students had unsatisfactory knowledge and inadequate practice regarding first aid. This improved post-program significantly. Recommendation: It is necessary to improve the wide-spreading of first aid training programs for the whole university. Constant and practical of this program by nurses must take an effective role in the training program.

**Keywords:** First-aid, training program, students

### Introduction

Most health-related hazards are known to have multifactorial etiology today, and prevention has been demonstrated to be important even at an early age before unhealthy behaviors are developed (Schaller and Sandu, 2011) [18]. Children can learn and imitate the actions of others, allowing them to develop awareness, attitudes, and patterns of behavior. Some of the factors that influence the expectations of a child about health are parents, school and also the so-called 'parallel' education, i.e. social life, interactions and contact with one's environment (Saridi, *et al.*, 2009) [17].

The past decade has seen a vast expansion of study and money on "what works" to improve the wellbeing of adolescents. Next, there are more interventions focused on shifting the environments in which adolescents reside, such as families, schools, and neighborhoods, as well as modifying adolescents' behavior, a more conventional approach.

However, there has been a rise in the production of "implementing resources" over the past decade tools that help program managers and communities with essential program implementation tasks (Catalano, *et al.*, 2012) [4].

First aid, as the name implies, is the first care given before the delivery of advanced medical services to a victim of an

accident, trauma or sudden illness. At any moment in day-to-day life, first aid may be needed. Knowledge of preventive care first aid is of great interest to the life of everyone.

Those who use First aid must be conscious of their rules and practices. Each person shares a duty to have basic knowledge of first aid in the event of an emergency, as we have to face these circumstances in today's life (Priyangika and Hettiarachchi, 2015) [14].

First aid's primary goal is to alleviate suffering, promote the process of healing and minimize damage. The first steps are taken to manage injuries and common diseases often determine the future course of disease and rates of complication. There have also been accounts of numerous erroneous procedures and misconceptions related to diseases, wounds and first aid activities. Some of these methods may be specifically risky and some may indirectly generate danger because they prolong the treatment time (Goel and Singh, 2008) [7].

Every year, in cases where first aid could have given them a chance to live, 150,000 people may die (St John Ambulance 2012) [16]. Nearly 35% of deaths occur within 5 minutes of an incident, while another 54% die within 30 minutes. Nonetheless, it is possible to reduce deaths by 20 percent by providing first aid at the accident site (Metin and Mutlu,

2010)<sup>[11]</sup>. The younger generation is the country's future and they are capable of learning new things and acting instantly. To develop educational programs, this form of study is required (Priyangika and Hettiarachchi, 2015)<sup>[14]</sup>.

### Significance of the study

One of the previous studies conducted by Rekleiti, *et al.* (2013)<sup>[15]</sup> aimed to evaluate levels of knowledge of first aid among 87 middle school students, before and after the educational intervention, as well as to establish an educational program aimed at changing attitudes and advancing awareness. It was also part of the 'Natural Disasters' environmental education project organized by the Ministry of Education each year. The aim of the teaching plan was to build awareness, attitudes and skills that would make responsible first aid choices. The findings of their study revealed that there was a statistically significant difference on the following questions both before and after the educational intervention: position for resuscitation (27.6% vs. 80.5%), nose bleeding (29.9% vs. 87.4%), choking (56.3% vs. 88.5%), unconsciousness (60.9% vs. 82.8%), recovery position (75.9% vs. 87.4%), trauma (77% vs. 89.7%) and self-protection when giving first aid (78.2% vs. 94.3%). The authors have concluded that services for health and environmental education are highly effective and that the use and implementation of such programs should therefore be increased accordingly.

A further study was carried out in Egypt by Ali, *et al.* (2010)<sup>[1]</sup> aimed at developing, implementing and evaluating a training program for 60 newly graduated nursery school teachers on first aid to certain pre-school emergencies and found that there was a significant improvement in the post-test knowledge and practice of the study group compared to pre-tests. On average, awareness and experience have increased from 0-10 percent to 80-95 percent in wound first aid, fractures, epileptic seizures, fainting, epistaxis, suffocation and burning. Our research was therefore conducted to plan, introduce and assess the preparatory year training program students for literary studies colleges to develop their first aid skills and practices.

### Aims of the study

1. This study aimed to assess, design and implement the training program for students of the preparatory year for colleges of literary studies to improve their knowledge and practices regarding first aid.

### Research hypothesis

1. Knowledge for students of the preparatory year for colleges of literary studies will improve after exposure to the first aid training program.
2. Practices for students of the preparatory year for colleges of literary studies will improve after exposure to the first aid training program.

### Methodology

This pretest-posttest study measured changes in students, knowledge, and practices towards first aid assessment and management before and after the delivery of the training program. Female students enrolled in the preparatory year college, they study in the Literary at Hail University were the study participants. Eligibility criteria included, the age

of the students ranged from 16 years and more. They are studying in literary studies. The number of students who were found eligible for participation was 200 Students. The educational training program was delivered by the researchers. The study assessed students, knowledge, and practices regarding first aid as follows: before the intervention and immediately after the intervention, using a self-administered questionnaire and observational checklist. Data collection carried out in the period between October to December 2017. Ethical approval was sought from the Hail University Research Ethics Committee. Permission to implement the research project was granted by the Dean of the Faculty of Literacy, as well as, the teaching staff. Before the distribution of questionnaires to the respondents, they were oriented about the study process and the most proficient method to fill out the questionnaire with utmost honesty. The research analysts dispensed the questionnaire during the start of their classes. Regarding the practices about first aid, it was done in the labs of faculty of nursing after got the permeation from Dean, Faculty of nursing Hail University

### Tool for Data collection

A structured self-administered questionnaire and observational checklist were designed and included the following items

1. Personal demographic data including, age, attain any training course about first aid, any courses of first aid done in your college or support giving the basics of first aid as a basic curriculum at the university
2. Knowledge of students about regarding first aid of wounds, bleeding, fractures, burns, and convulsions. The student got 2 points for each correct answer and zero for incorrect. The total scores for all questions related to knowledge were 48 satisfactory  $\geq 60\%$  of the total score and unsatisfactory  $< 60\%$  of the total score for each topic of first aid and overall items.
3. Practices of students regarding first aid by observational checklist about how to perform first aid about the same items of first.

Each done step practice was scored as one point and each not done practice was scored as zero points. The total score of practices was 62 points, which represented 100%. The final practice assessment score was as adequate practice  $\geq 75\%$  and inadequate practice  $< 75\%$ .for each topic of first aid and overall items.

**Validity:** The tools were prepared and reviewed to ascertain their content validity by five experts of medical and surgical in nursing and medicine. The recommended modifications were done accordingly, and then the tools were designed in its final format. The validity was 97.6%. The reliability was assessed in the pilot study and it was estimated by alpha Cronbach's test for the tool and its result was  $R=0.76$ .

A pilot study was carried out including 20 students to assess the tool clarity, applicability, and time needed to fill each sheet. The participants of the pilot study were excluded from the main study sample.

**The first aid training program**

The researchers interviewed students to explain the purpose of the study and reassure them that all data and results will be confidential.

A self-administered questionnaire was distributed to the students in their class to assess their knowledge about first aid, then the students classified to assess their practices in the lab. After that, the lectures about first aid was given to all students. Lastly, we were beginning by sessions to practices first aid. Three sessions were used to apply for the program. The students were classified into 10 groups each involved 20 students. The session of each group was scheduled based on the availability of time and place which was common in the morning between 8.5 am until 11.5 am. Through three days/week, each session lasted 45- 60 minutes. The 1st session, included, pretest and teaching the students about knowledge regarding first aid. The 2nd session included practices regarding how to perform emergency care in different situations. The 3rd session: included practice regarding first aid such as CPR, care during wound, care during bleeding, care during burning,

care during fractures, and care during a convulsion. At the end of each session, the researchers ensured the students' instructions. The program was presented in clear and concise form and focused on the point of learning using different teaching methods, as illustrative lecture, group discussion, role-playing, demonstration, and re-demonstration were used. Also, different audiovisual materials were used as pamphlets; hand out, pictures, and posters to facilitate the teaching of each topic. Posttest was done to assess knowledge and practices immediate after completion of the program by using the questionnaire and checklist.

**Statistical design:** The collected data was analyzed using Statistical Package for Social Science (SPSS) version 20. Descriptive and inferential statistics were calculated for socio-demographics, respondents' healthy practices while chi-square was used for inferential statistics of studied parameters.

**Results**

**Table 1:** Demographic characteristics of the studied students (n=200)

Socio-demographic character	Students (200)	
	No	%
<b>Age in years</b>		
16-17 years	47	23.5
more than 17	153	76.5
<b>Marital status</b>		
Married	5	2.5
single	195	97.5
<b>Knowing the emergency phone number in your place</b>		
Yes	79	39.5
no	121	60.5
<b>Attain any training course of first aid</b>		
yes	29	14.5
no	171	85.5
<b>Want to participate in any training course of first aid</b>		
yes	143	71.5
no	57	28.5
<b>Dissemination culture of first aid</b>		
yes	180	90
no	20	10
<b>Have any courses of first aid done in your collage</b>		
don't know	140	70
yes	42	21
no	18	9
<b>Supports giving the basics of first aid as a basic curriculum at the university</b>		
yes	125	62.5
no	75	37.5

A total of students were recruited into the study. Their demographic data were presented in table 1. It was noticed that the majority of the students were 16 and more years 76.5%. Most of the students (97.5%) were single. Besides, the majority of the students wanted to dissemination on the

culture of first aid (90%). More than half of the students didn't attain any courses of first aid (85.5%). And more than two-thirds of them want to engage in any first aid courses. Finally, two-third of them want to make first aid as a curriculum at the university.

**Table 2:** Comparison between Pre and Post-intervention knowledge for the students

Items of knowledge		Pre		Post		P Value
		No	%	No	%	
definition of first aid	Incorrect	85	42.5	51	25.5	0.000**
	correct	115	57.5	149	74.5	
objectives of first aid	Incorrect	100	50.0	55	27.5	0.000**
	correct	100	50.0	145	72.5	
knowing the place of first aid kit in your collage	Incorrect	188	94.0	62	31.0	0.000**
	correct	12	6.0	138	69.0	
content of first aid kit	Incorrect	133	66.5	59	29.5	0.000**
	correct	67	33.5	141	70.5	
The importance of keeping the injured away from the source of danger	Incorrect	82	41.0	48	24.0	0.000**
	correct	118	59.0	152	76.0	
importance of asking the injured questions	Incorrect	69	34.5	48	24.0	0.000**
	correct	131	65.5	152	76.0	
Wounds	Unsatisfactory	73	36.5	41	20.5	0.000**
	Satisfactory	127	63.5	159	79.5	
bleeding	Unsatisfactory	75	37.5	14	7.0	0.000**
	Satisfactory	125	62.5	186	93.0	
Fractures	Unsatisfactory		41.0	50	25.0	0.000**
	Satisfactory	118	59.0	150	75.0	
Burns	Unsatisfactory	65	32.5	49	24.5	0.000**
	Satisfactory	135	67.5	151	75.5	
Convulsion	Unsatisfactory	65	32.5	25	12.5	0.000**
	Satisfactory	135	67.5	175	87.5	

\*Statistically significant difference ( $p < 0.05$ ), \*\*statistically significant difference ( $p < 0.01$ )

Table 2 shows the comparison pre-post knowledge among the students in the study is It points to statistically significant differences between the knowledge for the students in post-program than in preprogram, as the P Value

equal 0.000 is less than 0.01, as the percentage of the students which answer the questions of the knowledge dimension correctly increased in the post-program than the preprogram.

**Table 3:** Comparison between Pre and Post-intervention practice for the students

Items of practices		Pre		Post		P Value
		No	%	No	%	
Wounds	Inadequate	142	71.0	50	25.0	0.000**
	Adequate	58	29.0	150	75.0	
Bleeding	Inadequate	124	62.0	35	17.5	0.000**
	Adequate	76	38.0	165	82.5	
Fractures	Inadequate	124	62.0	37	18.5	0.000**
	Adequate	76	38.0	163	81.5	
Burns	Inadequate	112	56.0	26	13.0	0.000**
	Adequate	88	44.0	174	87.0	
Convulsion	Inadequate	140	70.0	54	27.0	0.000**
	Adequate	60	30.0	146	73.0	

\*Statistically significant difference ( $p < 0.05$ ), \*\*statistically significant difference ( $p < 0.01$ )

The comparison between pre-post practices among the students in the study is displayed in the table 3. It points to statistically significant differences between the practice for the students in post-program than in preprogram, as the P.

Value equal 0.000 is less than 0.01, as the percentage of the students which answer the questions of the practice dimension adequately increased in the post-program than the preprogram

**Table 4:** Comparison between Pre-Post knowledge and Pre-Post practice among students

Items	Pre		Post		P Value
	No	%	No	%	
<b>Total _ knowledge</b>					0.000**
Unsatisfied	102	51	50	25	
Satisfied	98	49	150	75	
<b>Total _ Practices</b>					0.000**
Inadequate	141	70.5	39	19.5	
Adequate	59	29.5	161	80.5	

\*Statistically significant difference ( $p < 0.05$ ), \*\*statistically significant difference ( $p < 0.01$ )

Table 4 shows that the percentages of students with satisfactory knowledge and adequate practices were

significantly higher after the application of the program as the P Value equal 0.000 is less than 0.001.

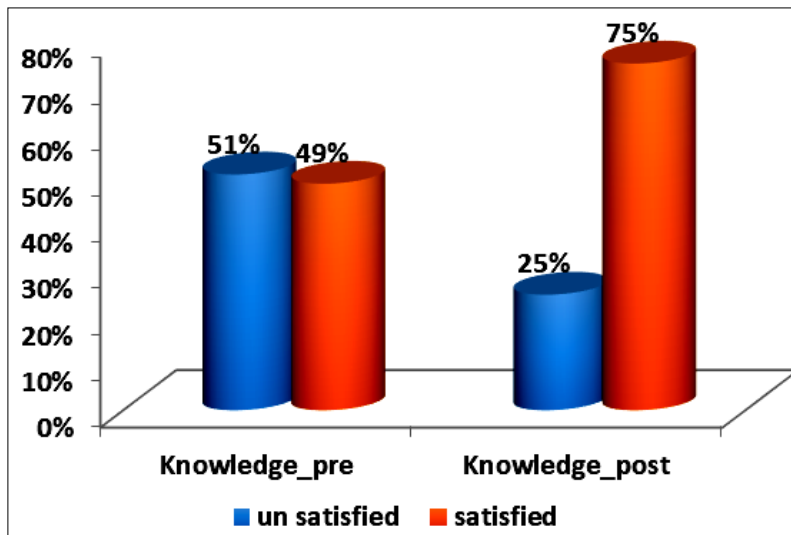


Fig 1: Shows Knowledge\_pre, Knowledge post, un satisfied and satisfied

Figure 1 shows the level of knowledge among studied students' regarding meaning, objectives, precautions, and bag of first aid at pre and immediate post-training program. The figure shows that there was a significant improvement in the level of knowledge among students regarding meaning, precautions, and a bag of first aid from (49%) preprogram to (75%) immediate post-program.

Figure 2 shows the mean score of total practice among students regarding first aid at pre and immediate post-training program. The figure reveals that there was a significant difference in the mean score of total practice which was observed at pre and immediate training program as following; (30% and 81%) respectively

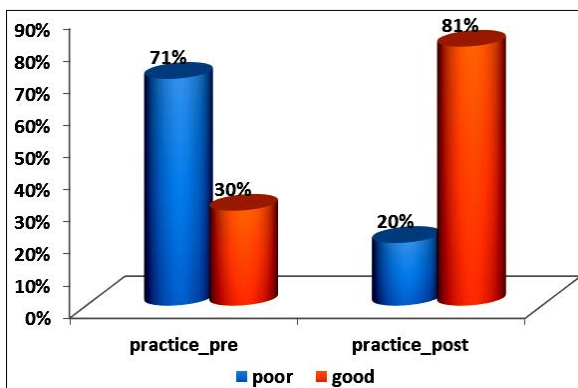


Fig 2: Shows practice\_pre, practice\_post poor and good

Table 5: Correlation between total score knowledge and practice among students at the pre-and-post-intervention program

Items	Preprogram	Post program
Knowledge	.484	.765
Practice		
P. Value	0.000**	0.000**

\*Statistically significant difference ( $p < 0.05$ ), \*\*statistically significant difference ( $p < 0.01$ )

To assess the correlation between total score knowledge and practice (pre-and post-program) among studied students, table 5 reveals a positive correlation with a highly statistically significant correlation between knowledge and practice about pre and post-intervention programs ( $P < 0.001$ ).

Table 6: Relation between students' knowledge and practice regarding their demographic characteristics

			Knowledge		P Value	Practice		P Value
			unsatisfied	satisfied		Inadequate	Adequate	
Age in years	14-16 years	No	32	15	0.7	38	9	0.075
		%	31.40%	15.30%		27.00%	15.30%	
	more than 16	No	70	83		103	50	
		%	68.60%	84.70%		73.00%	84.70%	
Marital status	yes	No	1	4	0.16	2	3	0.13
		%	1.00%	4.10%		1.40%	5.10%	
	no	No	101	94		139	56	
		%	99.00%	95.90%		98.60%	94.90%	
Knowing the emergency number in your place	don't know	No	0	4	0.058	3	1	0.961
		%	0.00%	4.10%		2.10%	1.70%	
	yes	No	37	42		55	24	
		%	36.30%	42.90%		39.00%	40.70%	
	no	No	65	52		83	34	
		%	63.70%	53.10%		58.90%	57.60%	

Attain any training course of first aid	don't know	No	0	1	0.534	0	1	0.292			
		%	0.00%	1.00%		0.00%	1.70%				
	yes	No	16	13		20	9				
		%	15.70%	13.30%		14.20%	15.30%				
	no	No	86	84		121	49				
		%	84.30%	85.70%		85.80%	83.10%				
Want to participate in any training course of first aid	yes	No	71	72	0.545	100	43	0.78			
		%	69.60%	73.50%		70.90%	72.90%				
	no	No	31	26		41	16				
		%	30.40%	26.50%		29.10%	27.10%				
	Culture of first aid	don't know	No	1		0	0.22		1	0	0.558
			%	1.00%		0.00%			0.70%	0.00%	
yes		No	86	94	125	55					
		%	84.30%	95.90%	88.70%	93.20%					
no		No	15	4	15	4					
		%	14.70%	4.10%	10.60%	6.80%					
First aid help in saving the life of injuries	yes	No	93	96	0.35	131	58	0.127			
		%	91.20%	98.00%		92.90%	98.30%				
	no	No	9	2		10	1				
		%	8.80%	2.00%		7.10%	1.70%				
	Importance of first aid kit in homes	don't know	No	1		2	0.06		2	1	0.599
			%	1.00%		2.00%			1.40%	1.70%	
yes		No	91	94	129	56					
		%	89.20%	95.90%	91.50%	94.90%					
no		No	10	2	10	2					
		%	9.80%	2.00%	7.10%	3.40%					
Have any courses of first aid done in your collage	don't know	No	73	67	0.873	101	39	0.344			
		%	71.60%	68.40%		71.60%	66.10%				
	yes	No	20	22		26	16				
		%	19.60%	22.40%		18.40%	27.10%				
	no	No	9	9		14	4				
		%	8.80%	9.20%		9.90%	6.80%				
Supports giving the basics of first aid as a basic curriculum at the university	don't know	No	11	2	0.37	10	3	0.594			
		%	10.80%	2.00%		7.10%	5.10%				
	yes	No	59	66		85	40				
		%	57.80%	67.30%		60.30%	67.80%				
	no	No	32	30		46	16				
		%	31.40%	30.60%		32.60%	27.10%				

\*Statistically significant difference ( $p < 0.05$ ), \*\*statistically significant difference ( $p < 0.01$ )

Concerning the relationship between students' Knowledge background and practice and their demographic characteristics, no statistically significant relationship could be found between total knowledge score level and total practice score levels and demographic characteristics (Table 6).

### Discussion

Training programs for first aid should be implemented to reduce the early mortality and morbidity of injuries and emergencies.

At the start of the study, the pretest was applied for students to evaluate their first aid-related sociodemographic information, experience and practice to establish specifically targeted programs for them. In this sense, the results of this study showed that they had low levels of knowledge and insufficient practices before the training program was introduced among students, we had poor levels of knowledge and insufficient procedures concerning all first aid products. This may be due to the lack of integration of first aid training in the first year of the preparatory college course, with significant improvements in their awareness and practice scores resulting in regradation of first aid following completion of the program.

This may be due to teenagers who are more likely than older people to accept first aid training, as well as being inspired to learn and to do so quickly and easily. Students showed great interest in our course, actively participating, asking questions and clarifying several fuzzy experiences from the occasional bits and pieces of first aid. Besides, the study points to disparities in statistical significance between post-program student awareness and pre-program knowledge. Such findings were in line with Naqvi, *et al.* (2011) [13], who confirmed that there was a very significant increase in students' level of knowledge and skills regarding basic life support after the training program and it remained that way. However, the findings of similar studies undertaken in Europe and the U.S.A. highlight the importance of improving basic knowledge in the field of first aid not only for students but also for the general population, as well as the significance of proper education based on international scientific recommendations (Aslan, *et al.* 2006) [3] and (England, *et al.* 2002) [6]. Even though the curriculum has improved the awareness of students, the need to continue using the system of experiential teaching is clear. Youth should be able to deal with potential health risks and provide practical support to anyone who needs it. (England and others, 2002) [6] and (Khooshabi *et al.*, 2010) [10].

Concerning the overall level of practice among participants, statistical significance discrepancies between the experiences of students in the post-program than in the pre-program were pointed out. This was following Khan *et al.* (2010) [9], who said that students who obtained structured first aid training scored better than those who did not receive first aid training. Ann, *et al.* (2010) [2] also reported that an improvement in mean scores of first aid practice has occurred after training.

About the relationship between total knowledge and total practice between students studying pre-and immediate post-training. The study results showed a positive correlation between knowledge and practice that was statistically significant. With Kano M., *et al.* (2005) [8], this result was in the same line who indicated that, as in their study, the first aid training they provided to the student substantially increased the level of first aid experience. Elbas *et al.*, (2003) [5], concluded that the awareness scores of the study team were stronger and significantly improved after the training program, as well as the first demonstration. Besides, Muneeswari B. (2014) [12] reported that there was a statistically significant correlation between post-test knowledge of first aid with the performance of the students. Concerning the correlation between the skill history and experience of students and their demographic characteristics, there was no statistically significant association between the total level of knowledge score and total level of practice score and demographic characteristics. This may be because the demographic features of the research sample are convergent

### Conclusion & Recommendations

We may presume that their skills and practices have been improved by the implementation of the first aid learning program to prepare literary studies. Besides, there has been a strong link between their overall awareness and overall learning in the research. Therefore, in the preparatory year, first courses in all divisions must be part of the curriculum.

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