



ORIGINAL ARTICLE

Knowledge retention regarding First Aid: A comparison between trained and untrained medical students in Peshawar.

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ABSTRACT... Objective: To compare the impact of formal training in terms of knowledge retention regarding First Aid among medical students of selected medical colleges in Peshawar, Pakistan. **Study Design:** Cross-sectional study. **Setting:** Three Selected Public and Private Medical Colleges in Peshawar. **Period:** November 2018 to June 2019. **Material & Methods:** A total of 150 students out of whom 75 had received formal training of first aid program one year back and 75 were selected as a comparative group who had no training in this regards. Data were collected on an indigenous questionnaire which incorporates the knowledge about basic terminology and important step taken for dealing with the different medical emergencies as first aid providers. Data were analyzed in SPSS version 20. Chi-square test was used for comparing the frequency of correct answers and p-value <0.05 was significant. **Results:** Among 150 students 52(34.7%) were male and 98(65.3) female. A comparatively high proportion of 54 (72.0%) of trained medical students correctly marked the meaning of “First Aid” and “CPR” as compared to 38 (50.7%) of untrained students (p=0.042). however, there was no significant difference in terms of knowledge regarding important step taken for patients with cardiac arrest, bleeding, burn emergency, fracture, and frostbite (p>0.05). **Conclusion:** The regarding knowledge of first aid program were more or less similar among trained and untrained medical students. However, comparatively higher proportions of trained medical students were able to correctly define the term first aid and CPR.

Key words: Cardiopulmonary Resuscitation, First Aids, Knowledge, Teaching.

INTRODUCTION

First aid refers to the quick and simple care you should provide when a person is injured or ill to save someone’s life and to minimize the consequences of injury until full medical treatment is provided by the doctors.¹ The adequate knowledge required for handling an emergency without a hospital setting at the site of the accident or emergency may not be sufficient as most medical schools do not have formal first aid training in the teaching curriculum.^{2,3} The elective course of emergency treatment for medical students on the cultivation of First aid knowledge and skills among medical students.^{4,5}

Study indicates that Medical students were more familiar with the knowledge of First aid than other colleges’ students.⁶ Researchers should

investigate the willingness of medical students to apply their first aid knowledge when necessary using a health belief model.¹ the medical students who are trained in first aid services provision were significantly better in terms of knowledge than untrained students.⁶ It is feasible to recruit local medical students for practical BLS and CPR training targeting laypeople in communities under stress. The training impact on local resilience and patients’ outcomes needs further studies.^{7,8} The long-term retention of BLS skills after a compulsory course in the first year is poor. Adequate check of vital signs and commencing cardiopulmonary resuscitation retained longer.⁹ a similar study with medical students in the United Arab Emirates shows that the training had added enthusiasm and motivation among students and there was a marked increased in the skills and

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practices of First aids services and the program has provided the student with a well-versed knowledge of BLS.¹⁰

Knowledge and skill of first aid programs are vital in various health situations like in natural or manmade disasters and emergency medical emergencies like myocardial infarction, ingestion of poisons, or foreign body.¹¹ It is reported that 25% to 50% of victims of natural died could be survived if first aid services available and provided immediately.¹² Study on health care professionals from Pakistan indicate that over knowledge among doctors and nurses was poor, but those with prior training in first aid were found as a predictor of optimal knowledge.¹³

Since the recognition of first aid training programs for medical students and other health care professionals is been appreciated all over the world. This has created a motive for some medical institute in Pakistan to adopt first aid training program for the students and staff, Rehman Medical College is the first one in the province which started this program for its students while some other medical colleges are still to adopt and implement it. Since the initiation of this program no study is been conducted to see the knowledge, skills, and practices of the students, hence, this study was aimed to compare the knowledge about first aid programs among medical students with and without training of first aid in selected medical colleges of Peshawar.

MATERIAL & METHODS

This was a multi-sector cross-sectional study was conducted in three selected medical college from November 2018 to June 2019. Among the students of Rehman medical colleges were considered as trained medical students as they are been part of an official regular training program in their college, while the other students were considered as untrained, however those students of other colleges who have to take part in the first aid program where also included in the group of trained students. The students of 3rd, 4th final professional years were requested to be part of the study. A total of 150 students (75 were trained while 75 were untrained) medical

students were recruited in the study. Data were analyzed using SPSS version 20, where the Chi-square test was applied to compare the different levels of knowledge among students while t-test was applied for mean score comparison, P-value <0.05 was taken as significant.

RESULTS

Among 150 students (75 were trained and 75 were untrained), 52(34.7%) male, and 98(65.3%) female. The majority 62(41.3%) of them were from 3rd professional years followed by 50(33.3%) 4th year and 38(25.3%) final year (Figure-1).

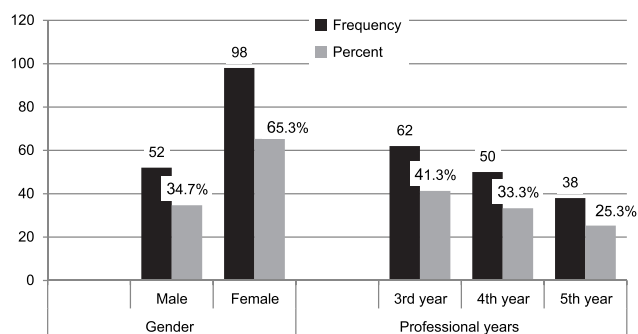


Figure-1. Demographic profile of women (n= 150)

Among trained students 54 (72.0%) know about the meaning of first aid as compared to 38 (50.7%) of untrained students and this difference was statistically significant ($p=0.042$). Similarly, CPR abbreviation was known to 72 (96.0%) of trained as compared to 62 (82.7%) untrained medical students ($p=0.068$). Knowledge of ABCs of CPR was found in 61(81.3%) vs 50(66.7%) among trained and untrained students ($p=14$). There was no significant difference in knowledge regarding the terms “safety first” ($p=0.68$). Similarly, there was no significant difference observed in terms of the first step taken for cardiac arrest patients, bleeding, burn emergency, fracture scenario, and frostbite.

DISCUSSION

The understanding of medical students about basic life support as part of the First aid program is very important for life-saving especially during an emergency.¹⁴ Refresher training of health care providers including medical students plays a key role in preventing adverse health outcomes if timely first aid services are provided.¹⁵

		Trained	Untrained	
		Freq(%)	Freq(%)	
Do you know what we mean by first aid?				
	Stabilizing the patient	18 (24.0%)	28 (37.3%)	0.042
	Giving aid at the site	54 (72.0%)	38 (50.7%)	
	Call for help	3 (4.0%)	8 (10.7%)	
	i don't know	0 (0.0%)	1 (1.3%)	
Do you know what does CPR stands for?				
	Cardiopulmonary resuscitation	72 (96.0%)	62 (82.7%)	0.068
	Cardiopulmonary regression	2 (2.7%)	8 (10.7%)	
	Cardiopulmonary rate	1 (1.3%)	4 (5.3%)	
	i don't know	0 (0.0%)	1 (1.3%)	
Do you know what we mean by ABCs of CPR?				
	air bag in car	5(6.7%)	5(6.7%)	0.14
	acute bronchial congestion	8(10.7%)	17(22.7%)	
	airway breathing circulation	61(81.3%)	50(66.7%)	
	i don't know	1(1.3%)	3(4.0%)	
What does safety first mean?				
	Analyze the situation, make others safe	16 (21.3%)	12(16.0%)	0198
	Unsafe firstly the situation, make yourself safe first	52 (69.3%)	48 (64.0%)	
	Take prompt action	5 (6.7%)	7 (9.3%)	
	I don't know	2 (2.7%)	8 (10.7%)	

Table-I. Comparison of knowledge about first aid among trained and untrained medical students

		Trained	Untrained	
		Freq(%)	Freq(%)	
Knowledge of the first step in cardiac arrest patients?				
	give nitroglycerin	13 (17.3%)	11 (14.7%)	0.34
	give beta blocker	4(5.3%)	8(10.7%)	
	perform CPR	54 (72.0%)	55 (73.3%)	
	i do not know	4 (5.3%)	1(1.3%)	
Knowledge of first steps in Bleeding				
	remove from the site give fluids	6 (8.0%)	7 (9.3%)	0.68
	stop blood immediately	51 (68.0%)	53 (70.7%)	
	lay the patient horizontally	10 (13.3%)	11 (14.7%)	
	i do not know	8 (10.7%)	4 (5.3%)	
Knowledge of first steps in burn emergency				
	call emergency	20 (26.7%)	12 (16.0%)	0.21
	chemicals needs to be cleaned	10 (13.3%)	15 (20.0%)	
	treat the burn	6 (8.0%)	11 (14.7%)	
	stop burning process	39 (52.0%)	37 (49.3%)	
Knowledge about first in fracture scenario?				
	do not straighten it	40 (53.3%)	32(42.7%)	0.62
	elevate extremities	13 (17.3%)	16 (21.3%)	
	give pain killer	6 (8.0%)	8 (10.7%)	
	apply cold pack	16 (21.3%)	19 (25.3%)	
Knowledge about the first step in the scenario of frostbite?				
	get it rewarmed	17 (22.7%)	26(34.7%)	0.06
	emersion in warm water	8(10.7%)	15(20.0%)	
	get out of the cold	46(61.3%)	31(41.3%)	
	giving pain killer	4(5.3%)	3(4.0%)	

Table-II. Comparison of knowledge about initial steps in a different emergency

This study, therefore, aimed to compare the knowledge retention regarding first aid program among trained and untrained medical students in Peshawar, Pakistan. The result of the present study indicates that the majority (72.0%) of Students who have attended the formal BLS training were aware of the meaning of first aid ($p=0.042$). Similarly, 96.0% of trained VS 82.7% of untrained students were aware about the term CPR ($p=0.068$). In contrast to trained students the term first aid program was know to 50.7% medical students who have not received any training. It is reported that few medical students participates in first aid training program and having comparatively high knowledge about First aid parameters as compared to not trained students.²

It is observed that training was found effective in terms of knowledge retention. A study in this regard indicates that an increase in the knowledge score among trained as compared to non-trained first aid providers, however time duration of the training is found very important.^{16,17} the retention of knowledge declined after 1 year of training.¹⁸ The correct response of the medical students varies concerning the aspect of first aid services.⁶ In the present study a high proportion of trained students correctly identified the meaning of “first aid” and “CPR” as compared to untrained medical students. While there was no significant difference in the proportion of students about knowledge regarding “safety first” ($p=0.68$) first step was taken for patients with cardiac arrest ($p=0.34$), bleeding ($p=0.68$), burn emergency (0.21), fracture ($p=0.62$), and frostbite ($p=0.06$). The reason for this pattern of knowledge retention may due to the time slot of training. The last training regarding first aid was conducted one and half years back, which indicate that knowledge retention may decrease over period of time. The same is reported by Ruijter et al.⁹ results of this study indicate that after 12 months of training there was only 2% of the student passed tests regarding first aid and BLS. Declined knowledge retention was also reported by Arora V, et al. however it was still high as compared to based knowledge.¹⁴ This reveals that long term retention of knowledge could not be guaranteed by one-

time training. This needs a series of refresher training among medical students. Training of first aid provides a piece of good basic knowledge and skills¹⁹ but may need consecutive series of training. A study in this regard indicates that those individuals who learned only once show poor knowledge retention regardless of time since last training. It is reported that most of the skills and Knowledge decrease over 90 days, however, continuous refreshing may boost the knowledge and skills.²⁰ Another study reported that training regarding first aid and BLS was found effective but retention of knowledge and skills starts to decline after 6 months of training.²¹

CONCLUSION

The basic meaning of first aid and basic life support was known to the majority of trained medical students, however, knowledge retention were more or less similar regarding initial steps for patients with cardiac arrest, bleeding, burn, fracture and frostbite. The reason may be due to the long interval between training study conducted among trained medical students.


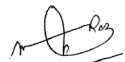

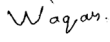
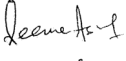

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AUTHORSHIP AND CONTRIBUTION DECLARATION

No.	Author(s) Full Name	Contribution to the paper	Author(s) Signature
1	Samin Ullah Khan	Idea conception, data analysis and final approval and write up. Accountable for all the work in article.	
2	Ali Raza	Idear specification, design of the study, data analysis and draft write up.	
3	Bibi Aliya	Data collection and data entry, study design, revisions.	
4	Waqar Ali	Data entry and Data management, Interpretation of Data.	 Waqar.
5	Seema Ashraf	Data collection, Enry and Management of the data.	 Seema A. I
6	Sher Bahadur	Critical reviewer, Proof writer and bibliographer.	 S.B.