

Model Of The Training In The Primary Emergency Care For Students Of Vietnam National University Hanoi

Ha Hoang Trinh^{1*}, Tam Quang Nguyen², Si Dung Chu³, Ngoc The Ngo⁴, Trung Thanh Nguyen⁵, Tuan Dang Mac⁶, Son Tuan Nguyen⁷, Thang Huu Nguyen⁸.

^{1,2,3,4}Hospital of Vietnam National University (VNU), VNU Hanoi, Vietnam

^{5,6,7}University of Medicine and Pharmacy, VNU Hanoi, Vietnam

⁸Institute for Preventive Medicine and Public Health, Hanoi Medical University, Hanoi, Vietnam

*Si Dung Chu, Hospital of Vietnam National University, VNU, Hanoi; sichu.bvbachmai@gmail.com; ORCID: 0000-0001-7723-5893

Objective: Study the Model of training including knowledge, skills, attitude, need for training, and retraining in primary emergency care for students of Vietnam National University (VNU) Hanoi. **Method:** Cross-sectional descriptive study. The study included all first-year students of VNU Hanoi in the academic year 2021-2022 who had health examinations from November 2021 to June 2022 at the Hospital of VNU. **Result:** Among a total of 1829 students, males accounted for 28.92% and females 71.08%, the female rate is about 2.5 times higher than that of the male. The three out of eight schools belonging to VNU Hanoi with the highest proportion of students participating in the study were the University of Social Sciences and Humanities (38.93%), the University of Science (12.90%), and the School of Law (14.82%). 77.47% students believed that primary emergency care (first aid) was very important, 21.82% considered it important, 0.11% considered it not very important, and no one considered it unimportant. Needs for first aid training is 65.12% of students had needed for initial emergency care training. The main first aid content that students wanted to be trained in was first aid for cardiopulmonary arrest 64.07%; first aid for fainting 58.86%; first aid for open wounds 55.33%; first aid for fractures 44.92%; and first aid for burns 34.51%. Regarding training methods showed that the majority of students chose short-term training 63.39%; formal instruction 30.39%; the proportion of online instruction and self-study materials is much lower 12.43%, and 4.03% respectively. **Conclusion:** There are 8 eight Universities of VNU that participated in the study, with a total of 1829 students, female accounted for the majority nearly 2.5 times more than the male. Most students believed that first aid was very important (77.47%). Needs for first aid training is quite high (65.12%). The main first aid content that students wanted to be trained in was first aid for cardiopulmonary arrest, fainting, open wounds, fractures, and first aid for burns. Regarding training methods showed majority of students chose short-term training, then it is formal instruction.

Keyword: Model of training and retraining, primary emergency care, first aid, Students, VNU

INTRODUCTION

Primary emergency care is an important part of treatment and resuscitation when a patient is first admitted. In case of serious illness or injury, the patient needs to be diagnosed early before emergency care, first aid, or surgical treatment [1] [2]. Initial emergency care often has limited capacity, leading to increased mortality and complications for patients with trauma, illness, helping them quickly integrate back into the community and become useful members of society [3]. Currently, in addition to a few developed countries that have invested heavily in their pre-hospital emergency systems [4], many low-income and middle-income countries still lack sufficient primary emergency care services and trained personnel. This often leads to unsafe patient transfers; delays between the time of diagnosis and admission to the hospital are prolonged; transportation is often inappropriate; there is no suitable system for selecting treatment facilities [5], [6]. In Vietnam, traffic accidents are becoming one of the leading causes of death and injury in hospitals. Traffic accidents caused 12.8% of the total deaths in 2010, contributing to 5.6% of hospital deaths (5.6%), while primary emergency care facilities only met 10% of the demand and 90% of victims did not have access to primary emergency care [7]. Vietnam National University (VNU) Hanoi in Vietnam is a big leading organization in training, research, and application in various core scientific fields, with the active cooperation of the entire VNU system. At present, the student population at the university is quite large (estimated to be nearly 50,000 students in 2022). Therefore, the need for knowledge,

attitudes, and skills in health care for students will be very diverse. Therefore, we conducted research on the title: "Model of training and retraining in primary emergency care for students of Vietnam National University Hanoi in 2021-2022".

RESEARCH SUBJECTS AND METHODS

Research design: Cross-sectional descriptive study. The study included all first-year students of VNU Hanoi in the academic year 2021-2022 who had health examinations from November 2021 to June 2022 at Hospital of VNU. **Sample size and selection method:** Convenient sampling method [8]. The estimated sample size was calculated based on the proportion of students needing knowledge, skills, and counseling on first aid; applying the sample size formula for a proportion, as follows:

$$n = \epsilon^2 Z^2 \frac{1-p}{p} (1-p)$$

Where: p: proportion of students needing research; $q=1-p$; ϵ : error rate, $\epsilon=0.1$; $Z (1-\alpha/2)$: 1.96. Based on the above formula, the minimum sample size is 1.596 subjects. In fact, 1.829 students participated in the study after initial health screening and verification.

Variables, indicators, and data collection tools: Data on variables and indicators for first-year students of VNU Hanoi in the academic year 2021-2022 were collected using a pre-designed questionnaire consisting of 4 parts [9], [10]:

Part A: General information.

Part B: Knowledge about first aid.

Part C: Attitude towards first aid.

Part D: Needs for education on first aid.

Data processing and analysis: Data was analyzed using STATA 15.0 software. Descriptive statistics were used, with a statistical significance level of $\alpha=0.05$. Descriptive statistics were used for quantitative variables (mean, standard deviation, median, range) and qualitative variables (frequency and percentage).

Research ethics: The research was conducted after the intensive first aid training in November 2021 and with the approval for first aid research from the Student Affairs Committee. The collected information was completely confidential and used only for research purposes.

RESEARCH RESULTS

General characteristics: Among a total of 1829 students at VNU (Hanoi) in the academic year 2021-2022, males accounted for 28.92% and females 71.08%.

Table 1. General Characteristic of study group

	Male		Female		Total	
	n	%	n	%	n	%
Age						
18	499	28.86	1230	71.14	1729	94.53
≥ 19	30	30.0	70	70.0	100	5.47
University						
University of Science, VNU (VNU-HUS)	98	41.53	138	58.47	236	12.90
University of Social Sciences and Humanities (VNU-USSH)	74	12.74	507	87.26	581	38.93
University of Languages and International Studies (VNU-ULIS)	30	16.95	147	83.05	177	9.68

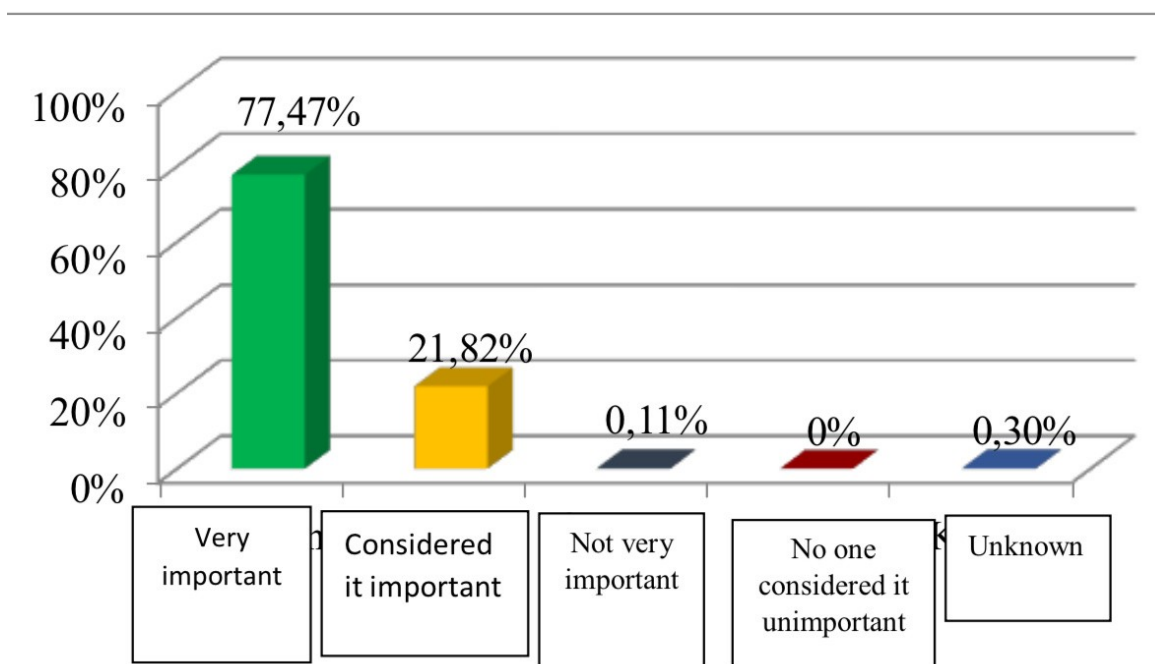


Chart 1: Evaluate the importance of first aid according to levels

VNU University of Education (VNU-UEd)	164	84.97	29	15.03	193	10.55
VNU University of Medicine and Pharmacy (VNU-UMP)	31	32.98	63	67.02	94	5.14
VNU University of Economics and Business (VNU-UEB)	25	19.08	106	80.92	131	7.16
University of Law (VNU-UL)	24	16.44	122	83.56	146	7.98
VNU-International School (VNU-IS)	83	30.63	188	69.37	271	14.82
Total	529	28.92	1300	71.08	1829	100

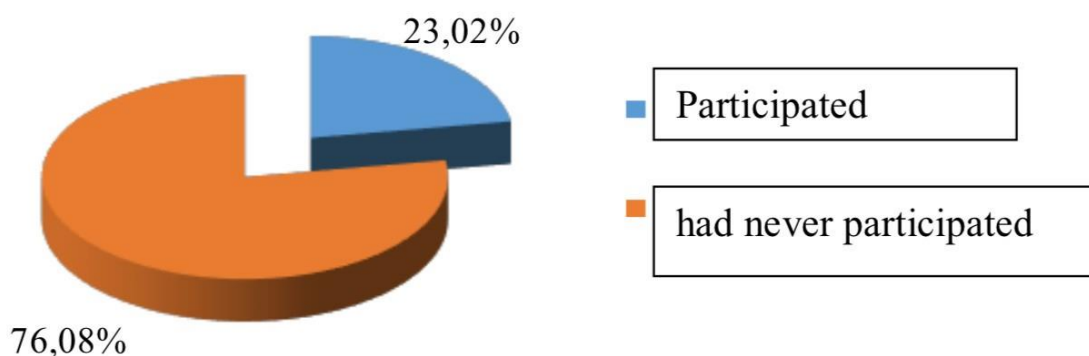


Chart 2. Proportion of subjects who participated in initial emergency care training: 421/1829 (23.02%) students participated in initial emergency care training; 1408/1829 (76.98%) students had never participated in any initial emergency care training.

Legend: Have demand (65.12%), Do not have demand (34.88%)

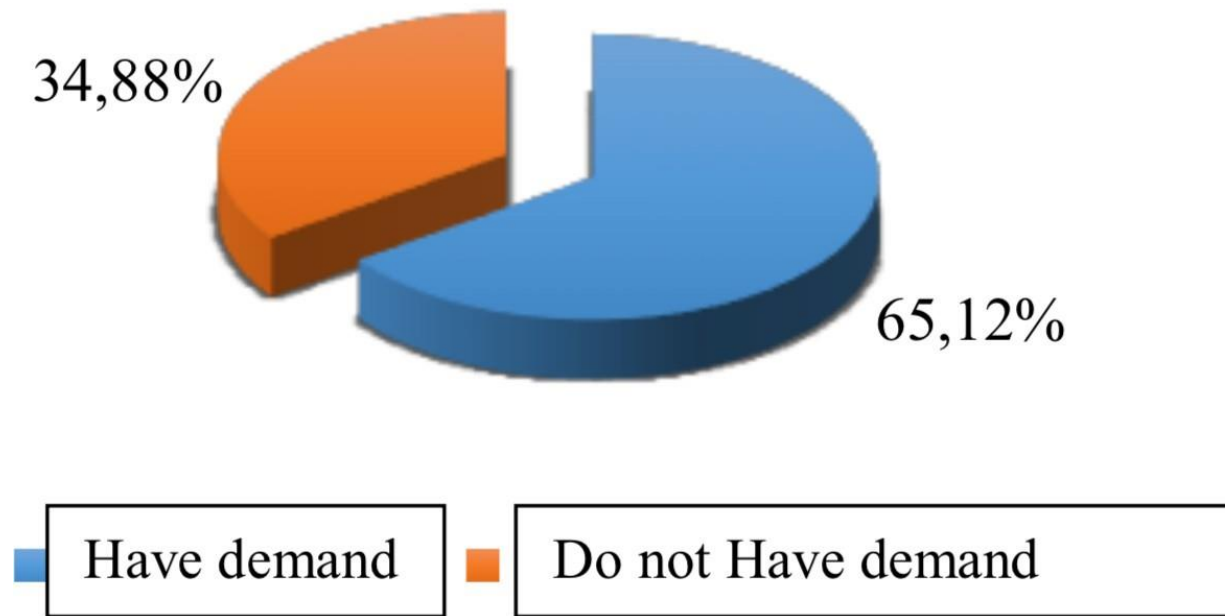


Chart 3. Proportion of needs for initial emergency care training

Table 2. Top contents desired to be trained in initial emergency care (n=1191)

Content	Quantity (n)	Percentage (%)
Cardiopulmonary arrest	763	64.07
First aid for open wounds	639	53.33
First aid for burns	411	34.51
First aid for fractures	535	44.92
Total	1191	

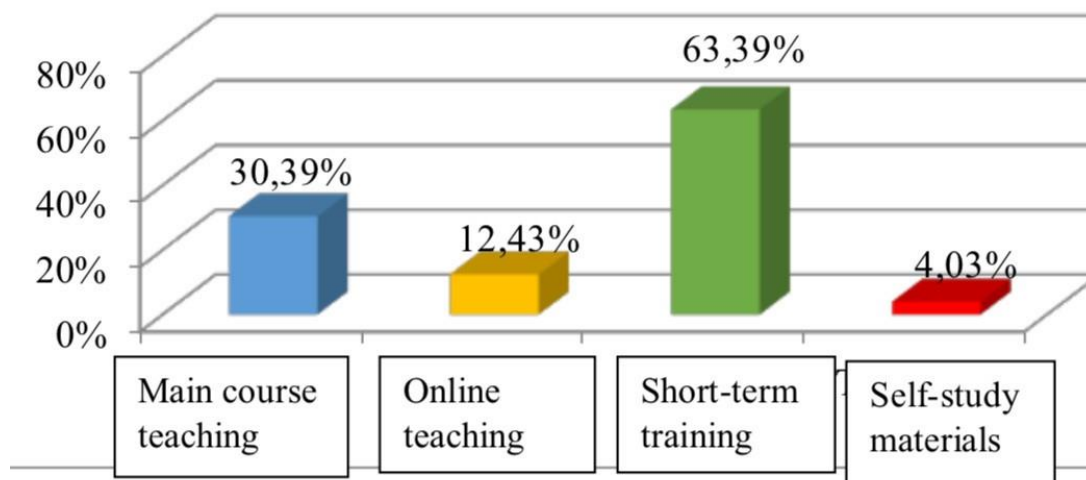


Chart 4: Proportion of training needs through knowledge transfer methods (n=1191). Y-axis: Percentage; X-axis labels: Main course teaching (63.39%); Online teaching (30.39%); Short-term training (12.43%); Self-study materials (4.03%)

The majority of students (63.39%) wanted to be trained through formal instruction, while online instruction and self-study materials were chosen by students with rates of 12.43% and 4.03% respectively.

DISCUSSION

General characteristics: Regarding the characteristics of the research group (Table 1): Female students accounted for the majority (71.08%), nearly 2.5 times more than male students (28.92%); students aged 18 were dominant (94.53%); students from external fields accounted for 94.86%. Students from the VNU-USSH, VNU-HUS, and VNU-Ued accounted for a significant proportion in the research, with percentages of 38.93%, 12.90%, and 10.55% respectively; Meanwhile, students from other fields accounted for VNU-UL 7.98%, VNU-UEB 7.16%, and VNU-UMP 5.14%.

Assessment of the current situation of first aid training according to different levels: When asked about the importance of first aid, 1422/1829 (77.47%) students believed that first aid was very important; 399/1829 (21.82%) considered it important; 2/1829 (0.11%) considered it not very important; and no one considered it unimportant (Chart 1).

According to research by Sefrin P and Heinrich H. (1991), out of 166 first aid cases before coming to the hospital, it was found that all cases were not performed correctly by medical personnel or by random people at the time of the accident; and the result was only 28.3% of first aid cases were successfully performed [9]. Singh AJ et al (1995) conducted a survey assessing knowledge and practice between high school students in urban and rural areas, regarding handling situations where high school students fight in rural and urban areas, this study emphasized the necessity of health education programs for students [10]. Conard RP & Beattie TF (1996) conducted research on 18 people from Edinburgh who believed that first aid was limited, with only 13% of people being able to perform some common emergency first aid tasks at home [11]. In research by Mauritt W et al. (2003), when an accident occurs, a significant portion of people around do not have knowledge or ideas about first aid. The research also concluded that there is an important relationship between first aid training and the quality of first aid performed by those who have been trained [12].

The current situation of first aid training:

On the reality of initial emergency care training: Among 1829 students who participated in this study, 421 students (23.02%) received initial emergency care training; meanwhile, there were 1408 students (76.08%) who had never participated in any initial emergency care training (Chart 2). Therefore, the number of students who received training shows that the school has been training a large number of students; however, these are often integrated courses with only a few topics in general, practical programs, etc.

In 1994, Gagliardi M et al conducted research on teachers in a school setting and found that about 1/3 of the school administrators had not received first aid training [13]. In the same year, a study conducted in North Staffordshire, UK, reported that 39% of deaths due to injuries could be prevented if pre-hospital first aid was

widely popularized and especially if it was provided to drivers [14]. in Polan, Wanot J et al (2004) conducted research on a group of parents and accompanying teachers and found that 64.5% of them did not know initial first aid procedures, even though only 37.6% had never been trained or participated in any first aid course. Other studies by Rea S & colleagues (2005) conducted on medical staff at a hospital found that 63.3% of medical staff had completed first aid courses [15]. Afraasyab K et al (2010) statistically found that 8.6% of medical students received initial first aid training and 11.26% of students in other majors received initial first aid training [16]. These results emphasize the need for widespread, appropriate, and effective initial first aid training.

Initial emergency care activities: Most activities are conducted within the main curriculum through lectures, practical sessions, handling of common cases, etc. However, as it is only a part of the theoretical and highly academic curriculum, the practical activities are still limited. Therefore, these extra-curricular activities, initial emergency care training at the school's medical station, Hospital of VNU, as well as groups, clubs, and volunteer teams, need to be organized. Therefore, the research will provide a "picture" of the knowledge, attitudes, and needs for initial emergency care training for the University to have a basis for deciding to integrate initial emergency care training for students with other health care programs for students. A study conducted by the American Academy of Pediatrics (AAP) (2004) showed that most subjects lacked knowledge about quick identification of life-threatening respiratory problems (only 36% knew); and for burns, the proportion of those who thought that open wounds were beneficial was still high, with 79% and 43% believing that covering burns with dirty bandages and non-sterile cloths was appropriate [17].

Edward T et al (2006) conducted research on first aid for medical students and final-year students at Nijmegen, Netherlands, with two situations involving cardiopulmonary arrest and arterial bleeding. They found that more than 50% of final-year students and new doctors performed incorrectly in these situations; only 79% performed incorrect arterial bleeding control; 62% incorrectly identified the correct hand position for chest compressions; and 62% performed incorrect ventilation to pulse ratio; in particular, 100% of subjects did not combine ventilation with chest compressions and heart compressions [18].

knowledge transfer methods (Chart 4) It was found that among the training methods offered, students chose short-term training (63.39%), which may be the most suitable method for first aid training when students have limited theoretical and practical knowledge. It can help students become proficient in first aid before an injury occurs. In contrast, students chose less formal instruction (30.39%), online instruction (12.43%), and self-study materials (4.03%). Theo Lynch DM et al (2006) conducted a study on subjects in western communities to evaluate the effectiveness of community-based first aid training programs and found that the general knowledge and skills of community first aid are still limited, and the limitations have been improved through training courses [19].

In general, we can see that knowledge, attitudes, and needs for first aid are still very limited among many different subjects. Although there are programs and strategies to improve the knowledge of the population on first aid, the number of subjects who receive proper first aid or receive proper first aid when entering the hospital is still urgent, and there needs to be more active and extensive activities to build a fast, comprehensive, timely, and effective first aid network for patients.

CONCLUSION

General characteristics: Among a total of 1829 students, males accounted for 28.92% and females 71.08%. The 3 Universities belonging to Vietnam National University Hanoi with the highest proportion of students participating in the study were the University of Social Sciences and Humanities (38.93%), the University of Science (12.90%), and the University of Law (14.82%).

Assessment of the importance of first aid: 77.47% students believed that first aid was very important, 21.82% considered it important, 0.11% considered it not very important; and no one considered it unimportant.

Needs for first aid training: 65.12% of students had a need for initial emergency care training. The main first aid content that students wanted to be trained in was first aid for cardiopulmonary arrest 64.07%, first aid for fainting 58.86%, first aid for open wounds 55.33%; first aid for fractures 44.92%, and first aid for burns 34.51%. Regarding training methods were the majority of students chose short-term training 63.39%, formal instruction

30.39%, the proportion of online instruction and self-study materials was much lower 12.43%, and 4.03% respectively.

RECOMMENDATIONS

For individual students: Equip yourself with knowledge, learn, and practice knowledge and skills in health care, and first aid for yourself when encountering health problems that can help yourself, friends, family members, and the community.

For the University organization: Regularly organize extracurricular science activities on student health care. Establish a communication channel on the internet to organize health counseling, enhance health education for students. The school should integrate health care and first aid content into extracurricular courses. Along with that, short-term training courses or formal courses should be combined with content such as first aid for cardiopulmonary arrest, fainting, fractures, burns... At the same time, the medical station/hospital of Vietnam National University Hanoi should strongly coordinate with classes on health care for students studying at the school and focus on nutrition, mental health, and physical health.

Limitations of the study The study generally provided an overview of the urgent general demand for this topic, so it did not provide a detailed assessment of the specific aspects of knowledge and specific needs among students.

FUNDING: This research has been done under the research project QG.21.62 “Study the current situation, health care needs of first-year students of Vietnam National University of Vietnam National University, Hanoi”.

REFERENCES

- Center for Rural Development (SRD). *First aid manual 05/2013*, Information and Communications Publishing House.
- Ministry of Health. *Guidelines for basic pre-hospital care 2011*, Medical Publishing House, Hanoi.
- NHS Direct. Accidents and first aid 2008; 2008: 05-03.
- Gururaj G, Reddi MN and Aeron Thomas A. *Epidemiology of road traffic injuries in Bangalore., Proceedings of the 5th world conference on injury prevention and control 2000*. New Delhi: Macmillan.
- Joshiyura MK, Shah HS, Patelb PR, et al. Trauma care systems in India. 2003; 34 (9): 686-692.
- World Health Organization (WHO) (2010), *Preventing traffic accidents, violence and road safety 2010*.
- Si Dung Chu, Tan Sin Khong (2018). Measuring healthcare service quality in a private hospital in a developing country by tools of Victorian patient satisfaction monitor. *Journal of Hospital Administration* 2018; 7 (5):
- Sefrin P and Heinrich H. The results of resuscitations in an emergency service, *Dtsch Med Wochenschr* 1991, 116: 1497-504.
- Singh AJ and Kaur A. Knowledge & practices of urban and rural high school children regarding minor injuries. *Indian J Public Health* 1995; 39 (1): 23-5.
- Conrad RP and Beattie TF. Knowledge of pediatric first aid among general population. *Accid Emerg Nurs* 1996; 4: 68-72.
- Mauritz W, Pelinka LE, Kaff A, et al. First aid measures by bystanders at the place of accident. A prospective, epidemiologic study in the Vienna area", *Wien Klin Wochenschr* 2003, 15: 698-704.
- Gagliardi M, Neighbors M, Spears C, et al. Emergencies in the school setting: are public school teachers adequately trained to respond? *Prehospital and Disaster Med* 1994; 9: 222-5.
- Hussain LM and Redmond AD. Are pre-hospital deaths from accidental injury preventable. *The BMJ* 1994, 308: 1077-1080.
- Nola IA, Jelinić JD, Matanić D, et al. Differences in eating and lifestyle habits between first- and sixth-year medical students from Zagreb. *Coll Antropo* 2010, 34 (4): 1289-94.
- Afrasyab K, Sumaira S, Fawad S, et al. Knowledge attitude and practices of undergraduate students regarding first aid measures. *Journal of Pakistan Medical Association* 2010, 60 (1): 68-71.
- Asad A, Syeda IB and Farah A. Knowledge of first aid and basic life support amongst medical students: a comparison between trained and un-trained students. *Journal of Pakistan Medical Association* 2011, 61 (6), 613-615.
- Singer AJ, Gulla J, Thode HC Jr, et al. First aid knowledge among parents. *Pediatr Emerg Care* 2004; 20 (12): 808-11.
- Edward CTH Tan Surgeon, Irma Severien, Jaap CM Metz, et al (2006). First aid and basic life support of junior doctors: A prospective study in Nijmegen, the Netherlands. *Medical Teacher* 2006, 28 (2): 189-192.
- Lynch DM, Gennat HC, Celenza T, et al (2006). Its extent and effect on knowledge and skills, *Aust N Z J Public Health* 2006; 30 (2), 147-50.