Critical Care Nursing

Iran J Crit Care Nurs 2013;6(3):205-212

Journal home page: www.inhc.ir

Studying the effect of triage video training through START style on awareness level of emergency medical staffs and their performance

Hamidreza Aghababaeian[1], Norolah Taheri*[2], Soheila Sedaghat[2], Nosrat Bahrami[1], Mohammad Maniei[1] ,Ladan Araghi Ahvazi[1]

1. Dezful University of Medical Sciences, Dezful, Iran

2. Abadan College of Medical Sciences. Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran

ARTICLE INFO

Article type:
Original article

Article history:
Received: 5 Nov 2013
Revised: 9 Apr 2013
Accepted: 23 Sep 2013

Key words:
Educational film
Medical emergencies
Awareness
Performance
START triage

ABSTRACT

Aims: One of the main contents of management and decisions in emergency triage is triage. Considering the importance of learning triage especially among medical emergencies staff and contradictions about the amount of education method effect and that some of these methods have some merits regarding the effect of learning, easiness, speed and cost, this study had been done with the aim of "studying the effect of triage educational film through START style on awareness and performance of medical emergencies staff".

Methods: In and intervention study, 72 of medical emergencies staff of north of Khouzestan, who were selected randomly in 2013 were tested, before education, immediately after and 15 days after education (by a triage 45 minutes educational film and after 15 minutes asking and answering) by a researcher-made questionnaire, which included three parts of questions (demographic, awareness and performance), then results were analyzed by SPSS18 software and descriptive test and paired t-test.

Results: The average of awareness and performance were respectively increased from 39% to 84f.6% and from 29.31 to 75.57 and also there was significant statistical relationship ($p<0.001$). Also there was significant statistical difference between the average of awareness and performance immediately after and 15 days after education ($p<0.001$).

Conclusion: The skill of pre hospital providers at all levels of training and experience to triage patients is less than optimal. However, this skill improved significantly after a single education session.

Please cite this paper as:
Aghababaeian HR, Taheri N, Sedaghat S, Bahrami N, Maniei M, Araghi Ahvazi L. Studying the effect of triage video training through START style on awareness level of emergency medical staffs and their performance. Iran J Crit Care Nurs. 2013;6(3):205-212.

*Correspended Author: Norolah Taheri
Abadan College of Medical Sciences. Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran
Tel:+989163438896
Email: hamidrezaaghababaeian@yahoo.com

1. Introduction

One of the most important management and decision making concepts in emergency is triage (trier). By triage we mean categorization

[Downloaded from jccnursing.com on 2026-11-04]

of the patients according to the priorities of diseases and available sources [1-3], in an overview, when the number of the patients in emergency ward increases or there are many injures in the incident site, the only approach, which can have the most use for the most of the patients is triage [7,8].

Also according to the evidences in Iran, there is not only any triage national scale, notified to the medical emergencies, there is no comprehensive academic course for triage education, and triage part is very limited in the topics of nursing and emergencies lessons and the only strategy is holding workshops and referring to scattered papers, published regarding this issue.

These insufficiencies can cause lack of appropriate context for emergence of behavior based on nurses' knowledge and emergency technicians.

Although there are little researchers in this regard in Iran, Sedaghat in 2011and Soluki in 2007 notified that knowledge and performance amount of medical emergencies staff about triage is weak [4,1] and also Mirhaghi et al in 2010 notified that nurses' knowledge and performance of Zahedan Medical Sciences University about triage is weak [5].

The above studies indicate that among these incidents and disasters, nurses' performance and awareness and medical emergencies technicians about triage show that these two groups did not have appropriate awareness of triage knowledge or in another word, this achieved performance and awareness for medical groups, which are the first line of treatment is very weak or not acceptable [1,4,5].

So alarms are sounding to notify us that beside all the advanced and modern humanitarian relief equipment and facilities, still the most important component is skilled and experience human force, those who have learned crisis important lessons in normal time and have practiced them, powerful and wise people who are able to control crisis destructive process through relying on their knowledge and with lots of sincerity and dedication and leads towards solving it and achieving relative calm of management. On one hand the best way for providing efficient human force for solving the need of the society is education [6].

Also education is the basis of all the learnings and nowadays in educational program, education and improvement of human sources is considered as one of the strategies of achieving human capital and positive adaptation with change of the conditions [9, 7].

So if we look wider, by the results of the discussions we can understand that the only effective way for achieving the aim of preventing complications of natural disasters or decreasing them, is to be armed with science and using that in performance [8, 9].

So by considering the importance of knowledge and skill of health and treatment teams members, especially medical emergencies in providing specialized cares and the ability of answering natural and human-made crisis, the researcher himself observed lots of emergency missions, lack of appropriate and correct plan, useless of equipment, lack of efficient and educated staff in adequate number in medical emergencies.

So by considering the importance of pre-hospital triage and this undeniable point that our dear country has natural disasters, the researcher decided in addition to providing, editing, translating and sounding an educational film, taken from American sources for teaching pre-hospital triage, to study the effect of triage education on the amount of awareness and performance of 115 emergency staff through educational film and based on the results of the study, in addition to introducing a useful educational film, to have an effective step among medical emergencies staff with a more effective educational system towards developing and promoting clinical decision making capacities in crisis times, increasing ability of performance and awareness of

[Downloaded from jccnursing.com on 2026-11-04]

emergency staff and permanent and self-centered learning.

2. Methods

This study had been designed in 2012 in the form of an intervention quasi-experimental and the study population were all the staff of medical emergencies (operator, driver and technician) in three centers (Shoush, Getond and Dezful) of medical emergencies centers of north of Khouzestan, which is dependent on Medical Sciences University of Dezful.

In this study sampling had been done through randomly method among 90 medical emergencies staff of North of Khouzestan based on Murgan table and the size of the samples were 72 people.

Data collection tool was a researcher-made questionnaire based on triage principles, the aims of triage and the method of triage according to the educational film includes three parts (the first part for collecting demographic data with 5 questions, which includes information such as; age, marital status, educational degree, experience of working in emergencies, the second part was the awareness part, which was for evaluating the area of awareness about triage and includes; 15 four-choice questions that had information about contents of triage knowledge basis, especially triage with START method and the way of assessing patient in triage with START method, which was in the generality of the film and was dubbed and also the third part was the performance part, which was for evaluating staffs' performance and includes a Scenario with 19 injures needing triage, which were based on the educated principles in the educational film.

In order to determine validity of the questionnaire, content validity and face validity were used, in this form, which was assesses after providing questions by 10 people of the faculty members and the specialists (Dezful Medical Sciences College and Abadan Nursing College and the authorities of Medical Emergency education of Shoush and Dezful) and their correction comments were performed. Then in order to determine external stability and reliability of the questionnaire, retest method (among 30 people of emergency staff and with 10 days interval) was used that Pearson correlation coefficient between scores of all the questionnaire at the first and second part was achieved 0.8 and then for determining internal reliability and stability of the questionnaire, Chronbach's alpha method was used that the reliability of the awareness questions was estimated 88% and the reliability of the performance questions was estimated 83%.

One day before the beginning of educational class in the conference hall of the Medical Sciences College of Dezful, the questionnaire was passed out before the education and 30 minutes was given to the samples of the study to answer the questions, then all the questionnaires were collected.

The method of scoring was through this way that one score was given to every correct answer.

Based on this, total score of awareness questionnaire was from 0 to 15 ; (0 to 5) little awareness, (6 to 10) moderate awareness and (11 to 15) good awareness and also about the performance, total score was from 0 to 19 ; (0 to 6) weak performance, 7 to 12 moderate performance and 13 to 19 good performance.

After collecting initial information and the amount of awareness and performance before education, 72 samples of the study were divided into two groups of 36 people through randomly method in the second day, then every 36-people group were educated into two one-hour separate time of educational film in a class with the same educational circumstances, which was about 45 minutes (one time for every class) and also at the end of every class questioners' questions were answered for 15 minutes, immediately after the end of education and again fifteen days after the education, the

[Downloaded from jccnursing.com on 2026-11-04]

mentioned questionnaire form was performed for all the staff.

Then data were analyzed by SPSS 18 software with significant level of 0.05 and in two ranges by using analytic descriptive statistical methods, central tendency and dispersion like; frequency, average, standard deviation and case paired t-test.

Table 1: Demographic features

	Basic(diploma)	Intermediate (associate diploma)	Paramedic *(BA)*
Educational degree	76.4%	16.7%	6.9%
	Single	Married	
Marital status	18.1%	81.9%	
	Operator	Driver	Technician
Job status	9.7%	45.8%	44.4%

3. Results

In this study 72 medical emergencies staff with the age average of 30.86±4.07 and experience average of 3.93±2.94 participated in the study that their demographic features are in table 1.

The initial results showed that the amount of initial awareness average of the units of the study considering triage was weak (5.8 with the standard deviation of 2.8 from total score of 15) and also in order to study initial performance, results of performance part indicated a weak performance (5.5 with standard deviation of 3.7 from the total score of 19).

Table 1 demographic features

Also based on the other achieved results, awareness and performance scores have been increased remarkably and score of the units of the study, which were educated had been increased to the acceptable extent (table 1, graph 2) and also paired t-test showed that there is also significant statistical difference among the units of the study in the awareness and performance average before education with immediately after that and before education with 15 days after that (table 3).

Graph 1 and table 2: average difference of before education, immediately after education and 15 days after education.

Table 3: comparing awareness and performance before education with awareness and performance immediately after education and 15 days after education of the units of the study.

4. Discussions

Results of this study showed that the age average of the units of the study was about 31 years old and also the average of their work

Table 2: The average of awareness and performance before education, immediately after education and 15 days after education.

Frequency distribution		Before education	Immediately after education	15 days after education
awareness	average	5.8	12.69	11.99
	Standard deviation	2.8	1.9	1.9
performance	average	5.5	14.36	13.65
	Standard deviation	3.7	2.8	2.8

[Downloaded from jccnursing.com on 2026-11-04]

experience in the emergency was 4 years old. The achieved results indicate a young emergency with low experienced staff, which is because of 7 times growth of the Iran medical emergencies centers in the recent years. Also average of the experience of the participants is more than 7 years old [15, 16].

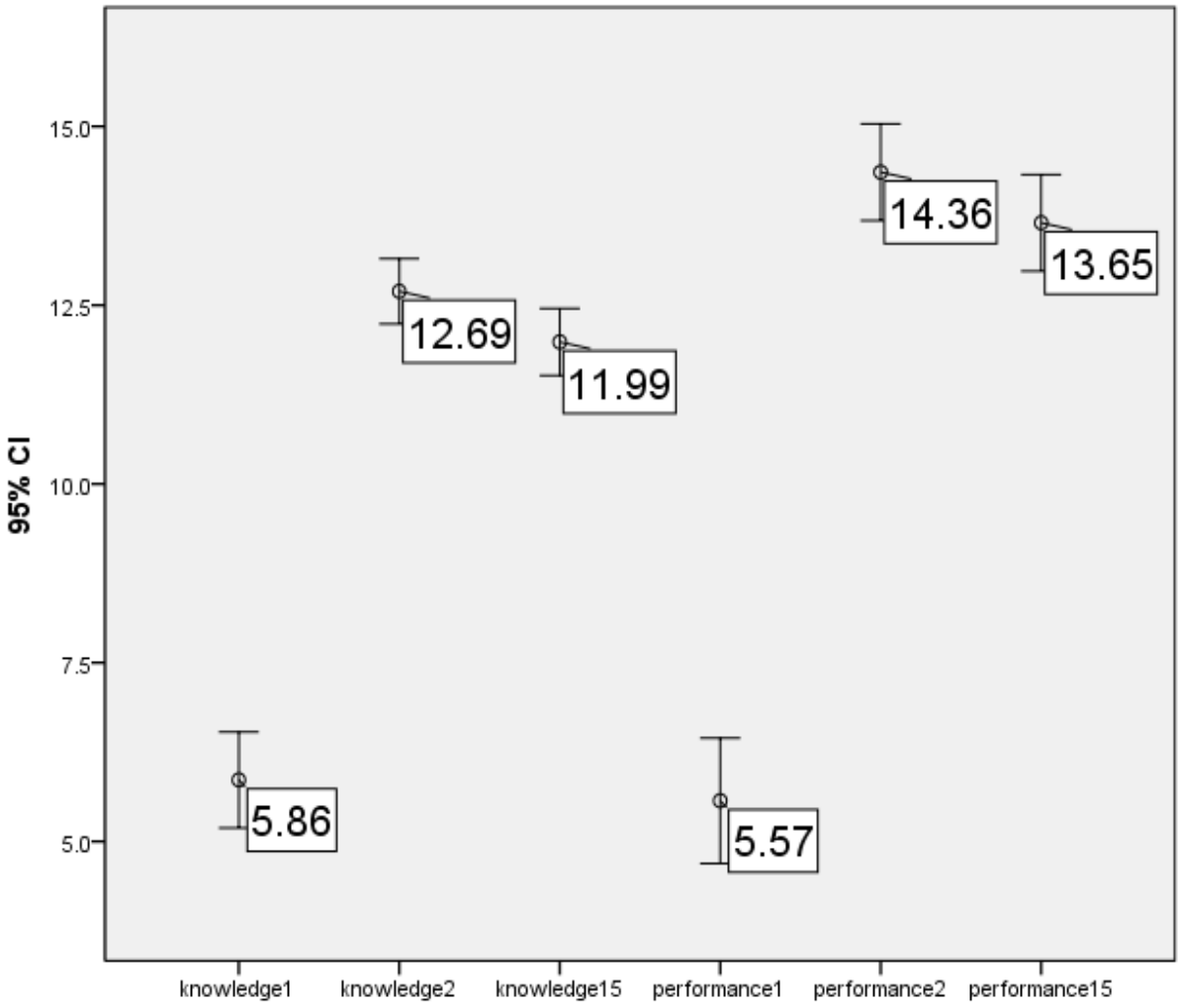
Also Matio 2011 stated that the experience of half of the staff was more than 15 years old [17].

This difference can be influence by the place of the study, because pre-hospital emergency has been used by many countries before being existed in Iran and being developed with this speed.

Wang 2008 states that the average of experience of most of the participants of the same study was 5 years old [14].

But James and Brouk 2010 state that the

Also frequency of the units of the study based on their education degree shows that most of the units of the study were diploma (basic technician) (76.4%), which is not in consistent with the results of the study of Brian 2001 that states most of the participants of the study had



Graf 2: The average of awareness and performance before education, immediately after education and 15 days after education.

BA degree (paramedic) [18].

[Downloaded from jccnursing.com on 2026-11-04]

Table 3: Comparing difference of the average of awareness and performance before education with awareness and performance immediately after education and 15 days after education of the units of the study

Variable	Comparing initial awareness and performance wih the awarness and performance immediately after education and 15 days after that.				
	Comparison	Average	Standard deviation	Difference of the averages	P significany
Film	Awareness before education and immediately after that	-6.8	2.35	.278	<0.001
	Awareness before education and immediately 15 days after that	-6.1	2.41	.285	<0.001
	performance before education and immediately after that	-8.7	2.72	.321	<0.001
	performance before education and immediately 15 days after that	-8.0	2.65	.318	<0.001

Also it is not in consistent with the results of the study of Wang 2008, that more than half of the participants of the study had BA and MA degree [14].

It can be said that the reason of this difference is due to shortage of educated workforce in emergencies of the country, especially of Khouzestan in compare with other countries.

Results, achieved from frequency distribution, findings and usage of statistical tests in this study showed that amount of staffs' initial performance and awareness about triage was weak and this weakness of awareness and performance needs reviewing curriculum resources, empowerment of the professors of the fields of medical emergencies, nursing and other paramedical fields and they also remind service educational classes and providing conditions for increasing awareness and performance of specialized forces, in other studies, which had been done in Iran it had been indicated many times [1,4,5].

Also in this regard Sezgin 2004 and Chin Chen 2003 indicated similar results [20,21], but it is not in consistent with the study of Wang 2008 and Brian 2001, which sated nurses' awareness of triage is in the moderate level [13,18]. Because these researches had been done in European countries, it is possible that the results of the study are influenced by the place of the study. However, the mentioned results show moderate knowledge of triage that also indicates more need of staffs to education.

By considering table 2 and 3, it is cleared that awareness and performance score have been remarkably increased and this difference of the averages, which has been significantly increased indicates significant effect of education with educational film method, so using video educational film for education can be an appropriate replacement in the cases that there is not the possibility of using other methods or it is not affordable.

For teaching practical skills of medical emergencies staffs, using educational film can prevent common problems and high costs of practical classes.

In addition some studies show that using video in compare with some traditional methods is more effective, in this regard Chen et.al and also Schier et.al achieved that speech and education through video are both effective similarly, even results were a little better in video education. In this regard, Karimi 2004 stated similar results [11,12], Bistibel in his explanations about learning states that 75% of learning is done through sense of sight and the percentage of keeping texts in the mind at the time of observing and speaking about content is also 70% [10]. In this regard Chen et.al and

[Downloaded from jccnursing.com on 2026-11-04]

also Schier et.al achieved that speech and education through video are effective similarly, even results were a little better in video [10,11]. In this regard Karimi 2004 according to Edgardial and Ahadian writes that: direct, objective and first hand experiences in compare with audiovisual cues such as; slide and film and audiovisual cues in compare with signs and symbols that their obvious examples are words have better exactness and cause facilitation of learning [11].

5. Conclusion

Finally ,the above results and that teaching START triage through considered educational film is significant and other achieved findings of this study can be a guideline for planners and health-treatment authorities of the country. Since this study about triage with this method has been done for the first time in the area, by supporting and developing such designs in other educational and treatment centers, present weaknesses of this educational film can be resolved and by localization as a complete educational reference, in addition to internal use also can be introduced to all over the world. Unfortunately we do not have such educational films in our country, which are made Islamic Iran.

6. Acknowledgement

We thank and appreciate management center and medical emergencies incidents of Shoush, Dezful, Andimeshk, Getond and also educational and research deputy of Medical Sciences Universities of Dezful and Ahvaz that helped us in all the stages of the study financially and spiritually.

References

1. Soheila Sedaghat, Hamidreza Aghababaeian, Norollah Taheri, Ladan Araghi Ahvazi, Ali Sadeghi Moghaddam. Study on the level of knowledge and performance of North Khuzestan medical emergency 115 personnel on pre-hospital triage Critical Care Nursing. Spring 2012, Volume 5, Issue 13, Pages: 99 – 104.
2. Bensone, et al. prehospital emergency car. field triage system. 2004; 8(2): 130–137.
3. Alison c, Hilton. Contin education nurse. Disaster preparadness: an indictment for action. nursing educator 2004;35(2): 59-65
4. soloki m. Knowledge and practice of zabol emergency medicine personnel about triage befor and after training .2th emergency congeres. 2006; Tehran. Iran.2006.132. [Persian].
5. Mirhaghi A.H, Roudbari M. A Survey on Knowledge Level of the Nurses about Hospital Triage. Iranian Journal of Critical Care Nursing .2010; 3(4): 167-174. [Persian.[
6. Bahrami Babaheydary T, Sedaghat S, Khezny S, Fakharzadeh L. Assess clinical skills acquired by nursing professionals Abadan in 2003 graduated. Iranian J Med Educ2004;NO.10: P79-80.
7. Nouhi e. Effective teaching methodology workshops on knowledge, attitude and practice of teachers in Kerman University of Medical Sciences. Journal of Qazvin University of Medical Sciences and Health Services 2002 ؛No 22: p. 32-38.
8. Goransson KE, Von rosen R. Interraper agreement: Aconparison between to emergency department triage scales. Eur j emerg med 2010; NO.1:P39-48.
9. Aghababaeian H, Taheri N, Araghi Ahvazi L, Sadeghi Moghaddam A. Fundamental of triage. 1th ed. Jameenegar pub: Tehran; 2012.
10. Momeni m. Comparison of two methods of teaching in his cd and manual training at two different times on preoperative anxiety in patient's candidate for coronary artery bypass graft. Nursing a two months of 2007, 21 (56): 81-93.
11. Karimi H. View of video instruction on student learning practical skills. Journal of Gorgan University of Medical Sciences, 2003, 12: 77-82.
12. Mongamed m. Comparison of two methods of CPR Training (Mannequins and video) on the performance of students and nursing students. Journal of Nursing Research 2006: 1 (2), 7-14.
13. Hamidreza aghababaeian, Soheila Sedaghat, Norollah Taheri, Ladan Araghi Ahvazi, Ali Sadeghi Moghaddam. Study on the level of knowledge and performance of North Khuzestan medical emergency 115 personnel on pre-hospital triage Proceedings of the 6th EMERGENCY congress. 2011; Tehran, Iran. [Persian].
14. Wang C, et al. Evaluating the effectiveness of an emergency preparedness training programme for public health staff in China. Public Health .2008; 122: 471–477.
15. James F. Knight[a], Simon Carley[b,], Bryan Tregunna[c], Steve Jarvis[c], Richard Smithies[d], Sara de Freitas[e], Ian Dunwell[e] and Kevin Mackway-Jones. Serious gaming

[Downloaded from jccnursing.com on 2026-11-04]

technology in major incident triage training: A pragmatic controlled trial. Resuscitation, September 2010;81(9) :1175-1179.
16. Brooke Lerner E, Richard b, schawartz m, phillip l, coule m. use of salt triage in a simulatited mass casuality incident.prehospital emergency care. 2010;14:21–25.
17. Matthew R. paramedic accuracy using salt triage after a brief initial triage. perehospital emergency cae .2011; 1(4): 1-7.
18. Brian L. A two intervention using start improves prehospital triage of mass casualty incidents. Perhospital emergency care2001;5(2):197-9.
19. Taheri N, Kohan S, Haghdoost AA, Foroogh Ameri G. Assessment of knowledge and activity of nurses in triage field in hospitals of Kerman University of Medical Sciences, 2005. [Thesis]. Kerman: Kerman University of Medical Sciences; 2006. [Persian].
20. Sarikaya S, Soysal S, Karcioglu O, Topacoglu H, Tasar A. Paramedics and triage: effect of one training session on triage in the emergency department. Adv Ther2004; 21:329-34.
21. Kuo-Chih Chen. The Role Tabletop Exercise Using START in Improving Triage Ability in Disaster Medical Assistance Team. Ann Disaster Med. 2003;1(2):78-84.

[Downloaded from jccnursing.com on 2026-11-04]