Impact of Online AHA Heartsaver First Aid CPR AED Course Amongst Non-Medical Post Graduate Students

ABSTRACT:

AIM: To understand the impact of online AHA Heartsaver First Aid CPR AED course training amongst non-medical students in Pune, India

INTRODUCTION:

Global statistics reveal, the mortality rate due to road traffic accidents is as high as 1.2 million per year. Numerous studies have shown that the society at large is in urgent need of more skilled in the form of first aid responder. This goal can be fulfilled and achieved by enhancing the number of first responders within our society.

With the advent of Covid-19 pandemic, opportunities for face-to-face training have significantly deprived critical knowledge sharing to the general population. The pandemic is long drawn and has forced us to devise novel methods of knowledge delivery to ensure that crucial aspects of First Aid and Emergency Care are taught to the general population.

The present study aims to understand the impact of online AHA Heartsaver First Aid CPR AED course training amongst non-medical students in Pune, India.

OBJECTIVE:

To study the impact of online AHA – Heartsaver First Aid CPR AED course among non-medical students in Pune, India.

METHODOLOGY:

The knowledge retention study was conducted amongst 250 Post Graduate Management students based in Pune. In order to assess the true impact of the AHA - Heartsaver First Aid CPR AED online training, only those students who had not undergone any previous, formal training in First Aid and CPR concepts were chosen for the study. The baseline knowledge of the respondents was assessed with a pre-designed 30 item and pre-validated 30 item Multiple Choice Questionnaire provided by the American Heart Association.

CONCLUSION:

E-learning is the way forward and it allows training of a large group of individuals in a singular event. This can help propagate first aid training to the masses. The study findings are encouraging in terms of improvement in the knowledge scores immediately after a single online training session. Although the knowledge tends to diminish after a period of eight weeks.

KEYWORDS: First aid training, online teaching tool, COVID 19, pandemic

INTRODUCTION:

Global statistics reveal, the mortality rate due to road traffic accidents is as high as 1.2 million per year. Apart road traffic accidents contribute to as many as 50 million injuries annually. The scenario in India is similarly dismal with average overall road death crashes estimated to be 0.13 million annually. [1-3]

A significant share of morbidity and mortality can be ameliorated by providing adequate skill training to the general population. Even minor timely interventions can significantly alter the natural course of injury and death.[4-5]

Numerous studies have shown that the society at large is in urgent need of more skilled in the form of first aid responder. This goal can be fulfilled and achieved by enhancing the number of first responders within our society. This can translate into increased survival rate amongst victims of injuries and medical emergencies. Over the years, various organisations working in the areas of emergency care have realized this need for upskilling of the general population and have devised numerous focused courses for the same.[6-7]

American Heart Association (AHA) is the leading training organisation for First Aid courses, Cardiac and Stroke care. Long years of research has ensured that the courses are based on robust universally accepted guidelines.[8]

Conventionally, the AHA training module includes hands-on-training and informative videos delivered face-to-face to a small group of individuals over a period of 8 hours on 1 day. With the advent of Covid-19 pandemic, opportunities for face-to-face training have significantly reduced leading to deprivation of critical knowledge sharing to the general population. The pandemic is long drawn and has forced us to devise novel methods of knowledge delivery to ensure that crucial aspects of First Aid and Emergency Care are taught to the general population. The online AHA Heartsaver First Aid CPR AED course includes all elements and the face-to-face needed, except for hands-on-training.[9-13]

The present study aims to understand the impact of online AHA Heartsaver First Aid CPR AED course training amongst non-medical students in Pune, India.

OBJECTIVE:

To study the impact of online AHA – Heartsaver First Aid CPR AED course among non-medical students in Pune, India.

METHODOLOGY:

The knowledge retention study was conducted amongst 250 Post Graduate Management students based in Pune. The students belonged to the age group 20 – 27years. In order to assess the true impact of the AHA - Heartsaver First Aid CPR AED online training, only those students who had not undergone any previous, formal training in First Aid and CPR concepts were chosen for

the study. The baseline knowledge of the respondents was assessed with a pre-designed 30 item and pre-validated 30 item Multiple Choice Questionnaire provided by the American Heart Association. The tool dealt with topics like management of common first aid emergencies including trauma, bleeding, CPR in both adult and children and application of Automated External Defibrillator (AED). Also the knowledge regarding, approach towards an emergency patient was assessed.

The respondents were then subjected to a one-day training on correct First Aid practices called AHA – Heartsaver CPR AED protocol. The training lasted for 8 hours on a single day. The sessions were facilitated by an AHA – certified instructor. The training was conducted via online mode using Microsoft Teams. Training videos were shared with the participants alongwith oral lectures and question and answers (Q&A) session to clarify doubts. The respondents were provided the same AHA questionnaire at the end of the training session to evaluate the impact of the teaching module. As a further step towards assessing the retention of the gained knowledge, the same questionnaire was administered to the respondents after a gap of 8 weeks. Only 230 participants completely filled the pre-test, post-test and retention. Informed consent was taken from the participants at the beginning of the study. Queries pertaining to the questionnaire were clarified at the time of data collection.

Data was analysed using means and paired 't' test to ascertain significant change between the pre and post test scores and between posttest and retention scores. SPSS version 23.0 was utilized for analysis.

RESULTS:

Table 1: Mean Score and Standard Deviation for Pre-test, Post-test and Retention

Parameters	Mean	Sample Size (N)	Std. Deviation
Pre Test Score	19.83	230	7.749
Post Test Score	27.85	230	4.886
Knowledge Retention Score	20.75	230	6.982

Table 1 shows the mean and standard deviation of the pre-test, immediate posttest and knowledge retention after four weeks.

The mean pretest score was **19.83±7.749** while the students showed significant improvement in the post training test scoring an average of **27.81±4.886**. However, the average score obtained in the retention test conducted four weeks later developed to **20.75±6.982**. This clearly indicates decline in the retention of skills as compared to immediate post-test.

Table 2: Paired 't' test with significance p-value

Paired Samples Test	p-value
Pre Test Score - Post Test Score	0. 00
Post Test Score - Retention Score	0. 06

Table 2 represents the results of paired t-test between paired samples (pre & post –test) with 95% level of significance ($p<0.05$) hence, may conclude that the training on Heartsaver First Aid CPR and AED skills is found significant. As well as paired sample (post- test and knowledge retention) with 95% level of significance ($p>0.05$), hence may conclude that knowledge retention regarding Heartsaver First Aid CPR and AED skills after eight weeks is still significant.

DISCUSSION:

In view of the prolonged COVID-19 pandemic, it is imperative that teaching androgies are suitably modified to ensure continuity of learning. First aid knowledge needs to be propagated to non- medical students as it can impact the first level care offered to victims of accidents or other natural calamities. The present study is an attempt to understand the impact of online teaching of AHA Heartsaver First Aid CPR AED course in the COVID-19 era. The significant increase in the immediate posttest course points towards the efficacy of online modules in communicating the principles of First Aid, CPR and AED.

These results are in-line with the findings of Lippmann *et al* wherein it was found that first aid competencies for BLS and first aid theory can be achieved by e- learning.[14]

Similarly, Reavley *et al* had also concluded that blended learning (e-learning and face to face) was only minimally more effective than e-learning.[15]

The study further tried to gauge the knowledge retention with regards to First Aid, CPR and AED after a period of eight weeks of the online training session. Although the retention scores drop from a mean of 27.85 to 20.75, yet it did not reach the level of significance. This finding reiterates the need for follow-up sessions and reinforcement of the knowledge. Relying on a single session training would lead to poor retention in the due course.

CONCLUSIONS:

E-learning is the way forward and it allows training of a large group of individuals in a singular event. This can help propagate first aid training to the masses. The study findings are encouraging in terms of improvement in the knowledge scores immediately after a single online training session. Although the knowledge tends to diminish after a period of eight weeks. Further, large scale follow-up studies are required to confirm the findings.

CONSENT:

Informed consent was taken from the participants prior to the administration of the survey.

ETHICAL APPROVAL:

Conflict of Interest: None

Source of Funding: Self

Ethical Clearance: Obtained from IEC, SIU

COMPETING INTERESTS:

Authors have declared that no competing interests exist.

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