Short Report:
An Innovation in Learning and Teaching Basic Life Support: A Community Based Educational Intervention

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Citation

Submitted: Dec 14, 2017; Accepted: Jan 3, 2018; Published: Jan 30, 2018.

Abstract: Background: Out of hospital deaths due to cardiac arrest would commonly occur because of the lack of awareness about the quick and right action to be taken. In this context the healthcare students undergo training in basic life support. However the lay persons are not exposed to such training. The present study was intended to train the auto drivers, the basic skills of basic life support by the medical and nursing students. Students got an opportunity to learn and teach the skills under the supervision of faculty. Methods: A total of fourteen students, 20 auto drivers of Manipal were included in the study population. The session on one and two rescuer cardio pulmonary resuscitation and relieving foreign body airway obstruction was conducted by the trained students for the auto drivers under the observation of the faculty. Prior knowledge of the study population was assessed by the pre-session questionnaire followed by a post-session questionnaire at the end of the session. The skill evaluation was carried out using a checklist. Results: The auto drivers participated in the session, gained required skills of providing basic life support. The students who trained the study population opined that they got an opportunity to teach basic life support which would help them build their teaching skills and confidence. Conclusion: The lay persons attaining basic life support skills have a high impact on the management of out of hospital cardiac arrest victims. Involving the healthcare students as instructors makes an innovation in learning.

Key Words: Basic life support, auto drivers, students, medical, nursing

Introduction:
It is imperative that people in the community are aware of the basic life support (BLS) skills to save lives and improve the quality of health. Increase in the survival among victims of out of hospital cardiac arrest has been found with the addition of BLS responders to the existing emergency medical services. Out of hospital deaths due to cardiac arrest would commonly occur because of the lack of awareness about the quick and right action to be taken. This study was a novel approach to provide BLS training to the auto drivers as they would be one of the easily available source of help.

The present study involved training the medical and nursing students in BLS by the facilitators from different disciplines. The former in turn trained the auto drivers under the observation of the faculty.

Aims of the study
a. To make the medical and nursing students competent in providing and teaching BLS.
b. To make the auto drivers competent to provide BLS.

Objectives of the study
a. To make the students included in the project would acquire the skills of BLS.
b. The students who would teach the study population shall acquire the teaching skills and confidence that would help them excel in their career as health care professionals.
c. The auto drivers would attain the skills of BLS which would help them respond in the emergency situations.
and would increase the survival of victims of cardiac arrest.

Methods

The study was undertaken for a period of one year during 2015-16. A total of fourteen final year students (seven medical and seven nursing), 20 auto drivers who volunteered to participate in the study were considered. Written informed consent was obtained from all the participants prior to the recruitment. Those who did not provide consent for the participation were excluded from the study. Ethical clearance for the study was obtained by the Institutional Ethics Committee (IEC).

Preliminary phase:

Prior permission from the concerned authorities was obtained to conduct BLS sessions in the Medical Simulation Center. Approval from the auto association was obtained for the recruitment of study population. A team was formed which comprised of the faculty of medical and nursing background who were already trained in BLS authorized by the American Heart Association (AHA).

Study questionnaires:

The pre and post session study questionnaires were prepared both in English and the local languages and were approved by the team. A handout illustrating step by step representation for providing CPR (cardiopulmonary resuscitation) was also prepared. The pre-session questionnaire helped in obtaining the prior knowledge of the auto drivers. The post-session questionnaire was used as the knowledge evaluation tool. The questionnaires and the handout were validated for content and language by three subject experts including one from outside the University. The skill evaluation checklist was also prepared for the assessment of the students and the auto drivers.

BLS training session for the students:

Fourteen students (seven final year medical and seven final year nursing) were chosen upon their informed consent and were trained in BLS at the Medical Simulation Center, by the project team (Figure 1). The skill evaluation was conducted at the end of the session using a checklist. The students were named as ‘trainers’ for the auto drivers.

BLS training session for the auto drivers:

Twenty auto drivers were recruited for the BLS training after obtaining their informed consent. The session was conducted in the Skills lab of the University. Five student trainers moderated the session under the supervision of the project team. The sessions on one and two rescuer CPR and relieving foreign body airway obstruction were included in the training. The handout was distributed to the participants at the beginning of the session. A single session was conducted for a period of three hours.

The pre-session questionnaire was distributed at the beginning of the training programme followed by a post-session questionnaire at the end. All the participants were allowed to practice hands-on with the mannequins and were evaluated for the BLS skills attained at the end of the session using the checklist under the supervision of the trainers (Figure 2). A certificate of participation was provided to all the participants and a certificate of appreciation was provided to all the student participants for their active involvement.

Results

BLS session for the students:

Twenty students had registered for the session. But 14 students (seven final year medical and seven final year nursing) participated in the session. The session included briefing on one and two rescuer CPR and relieving foreign body airway obstruction. At the end of the session all the students were able to successfully demonstrate the skills in front of the instructors which were marked using a checklist.

BLS session for the auto drivers:

A total of 20 auto drivers volunteered to participate in the session. The age group of the participants ranged from 25 to 38 years. The pre-session questionnaire revealed that the knowledge of the auto drivers was limited to the awareness about the emergency medical services number. No auto driver had ever known about BLS nor had witnessed it. The hands-on practice on mannequins was encouraged throughout the session along with briefing about the essential facts. The post-session questionnaire was distributed at the end of the session. Few questions overlapped with the pre-session questionnaire. All the participants were able to answer the critical concepts of BLS correctly.

The skill evaluation was conducted for the participants by the trainers. The participants were provided with scenarios of out of hospital cardiac arrest and were asked to demonstrate the basic aspects of providing CPR. The auto drivers were able to perform all the steps of CPR on the mannequin. The entire session was moderated by the students under the supervision of faculty.

When the students were asked to reflect on their experience of being the part of the intervention, they revealed that it helped them attain the teaching skills and confidence and also provided an opportunity to work as a team. They opined that the skills obtained during the training period would lead to the rapid and correct actions by the auto drivers in emergency situations.

Discussion

The literature reveals several studies on different approaches towards BLS training. A study by Hoyer et al showed the possibility of successful implementation of a BLS responder unit in an urban setup before the arrival of the ambulance in 73% cases, attachment of the automated external defibrillator (AED) in 55% of cardiac arrests and defibrillation in eight out of nine patients with shockable rhythm, of whom seven gained ROSC (return of spontaneous circulation) and six survived more than 30 days.

Studies regarding the use of first responders in urban areas have shown a variety of results. One study showed an increase in survival from out of hospital cardiac arrest attributed to several factors, including the use of BLS responders.
A study was conducted on 22 medical and 18 nursing students who were trained in BLS, who further trained other students. A mixed method study was designed using quantitative and qualitative methods to enable richness and depth of data capture. The outcomes evaluated encompassed observation of teaching skills using the four stage approach; attitudes to inter-professional learning before and after the teaching intervention, and views of the student teachers before and after. Initial anxieties reported at the pre focus groups were not realized and the post focus group results showed favorable results from the student teachers towards peer teaching experiences; BLS as a topic and inter-professional working. Out of hospital deaths due to cardiac arrest would commonly occur because of the lack of awareness about the quick and right action to be taken during such situations. The training of lay rescuers such as auto drivers would provide them the confidence and knowledge to act right and quick in those situations. Choosing students as trainers would help them build teaching skills and confidence. The project has a path towards continuation as more number of study population including the lay rescuers from different backgrounds shall be trained in the future.

Limitations
All the twenty students were not able to participate in the study as trainers. This was because, the session for the auto drivers was conducted in the local language and only students who could communicate in that language were chosen as trainers. The AED skills were not included as it was difficult for the participants to follow the commands in English.

Conclusion
The present study was an attempt to train the lay rescuers by the trained students. Such approach would facilitate students to build confidence and help them retain their skills learned. This would also give an opportunity to the health care students to interact and understand the needs of the community towards learning BLS.

Acknowledgements
i. The project team thank the authorities of Manipal Academy of Higher Education, Manipal, for giving approval for conducting the sessions in the Medical simulation center and Skills lab
ii. Heartfelt gratitude to the representatives of the auto drivers’ association, Manipal for helping the recruitment of participants for the study.
iii. The project team would like to thank all the students and the auto drivers who participated in the study.
iv. Heartfelt gratitude to the MU-FILLIPE FAIMER team of Manipal Academy of Higher Education, Manipal who were constant support throughout the study in planning and executing the project.

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