

## Impact of Basic Life Support Training on Knowledge and Attitudes of Healthcare Persons toward Resuscitation.

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### Abstract

**Background:** Basic life support (BLS), an important component of the survival chain, reduces the time between cardiac arrest and cardiopulmonary resuscitation and enhances the rate of hospital discharge. The study aimed to explore the knowledge of and attitude towards basic life support (BLS) among medical/paramedical professionals. Cardiopulmonary resuscitation (CPR) improves a person's chances of survival after a cardiac arrest. Repeated training helps employees retain knowledge in CPR and how to utilize automated external defibrillators (AEDs). It is difficult to retain knowledge and abilities in CPR during and after training, and it necessitates systematic training with appropriate technique. **Aim & objectives:** To study impact of basic life support training on knowledge and attitudes of healthcare persons towards resuscitation before and after attending a BLS-training course in Terna medical college.

**Materials and Methods:** The study was done in among the students, staff of a Terna medical college in Navi Mumbai from Jan20 – May20. Data was collected by using a validated, anonymous, self-administrated questionnaire.

**Observations and Results:** In our study, the proportion of health-care workers who reported a positive attitude increased significantly from the pre-BLS group to the post-BLS group, showing a positive effect of BLS training 78% participants showed positive response after training about ability to work as a member of resuscitation team.

**Summery and Conclusion:** Repeated educational programs can improve attitudes toward CPR performance and the use of AEDs. Training that addressed the concerns of health-care workers could further improve these attitudes.

**Keywords:** Basic life support (BLS), Cardiopulmonary resuscitation (CPR), Training, Knowledge, Attitude.

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### Introduction

The survival of patients with out of the hospital cardiac arrest can be improved by reduction of response times, including early cardiopulmonary resuscitation

(CPR), early defibrillation, and early advanced care [1]. CPR and the use of automated external defibrillators (AEDs) are core training components in all life-

support courses, including basic life-support (BLS) provider training. To successfully complete a BLS course, a provider must demonstrate the psychomotor skills and cognitive knowledge needed to deliver CPR effectively. Assessment of attitudes, knowledge and influences that affect the use of CPR and AEDs among health-care professionals (physicians, nurses, emergency medical technicians and paramedics) is important. Factors that negatively influence the attitudes of nursing staff toward administration of CPR include fear of contracting a contagious illness [2] and lack of training, which might reduce confidence in performing CPR [3]. Similarly, health-care workers can be reluctant to provide mouth-to-mouth ventilation without the appropriate means [4,5], because of anxiety that they might contract an illness [6], that they might cause trauma or that the AED might not work properly [7].

Assessment of attitudes, knowledge and influences that affect the use of CPR and AEDs among health-care professionals (physicians, faculties, nurses, medical technicians and paramedics) is important.

### **Aim & Objectives:**

**Aim:** To study impact of basic life support training on knowledge and attitudes of healthcare persons towards resuscitation before and after attending a BLS-training course in Terna medical college.

### **Objectives:**

1. To assess health-care providers' attitudes toward CPR–AED training before taking the course.
2. To identify factors influencing attitudes toward CPR–AED use.
3. To determine the effect of attending the BLS course on attitudes toward CPR and defibrillation.
4. To explore the level of knowledge among participants before and after the BLS training.

### **Materials and Methods**

A study was carried out among the students, staff of a Terna medical college in Navi Mumbai from Jan20 – May20. Data was collected using a validated, anonymous, self-administrated questionnaire, delivered in a written form to our study participants, after explaining the voluntary nature of the questionnaire and obtaining a verbal consent from the study participants. Participants perceptions about BLS training, was studied.

**Tool:** The response to the perceptions was assessed using four-point Likert scale each rated from 0-4 (Likert scale: 0, strongly disagree to 4, strongly agree), that measure five domains:

Students' perceptions of learning; perceptions of teachers; academic self-perception; perceptions of the atmosphere; and social self-perception. The Statistical Package for the Social Sciences software (SPSS version 21.0) was used for data analysis. Both descriptive and analytic statistics was assessed. The chi-squared test was used for categorical data and the t-test for continuous numerical data. We used 75% of total attitude score as a cut-off point to determine positive attitude and used 50% of total concern score as a cut-off point to determine high concern, and this cut off point was equivalent to 75th percentile of concern score in this study. Multiple linear regression analyses applied to identify the significant predictors of the attitude and knowledge scores. Statistical significance was considered at  $p < 0.05$ .

**D. Study Plan:** Data Collection Source: students, staff and faculty of Terna medical college.

Data Collection method: Questionnaire

Sample Size: 200

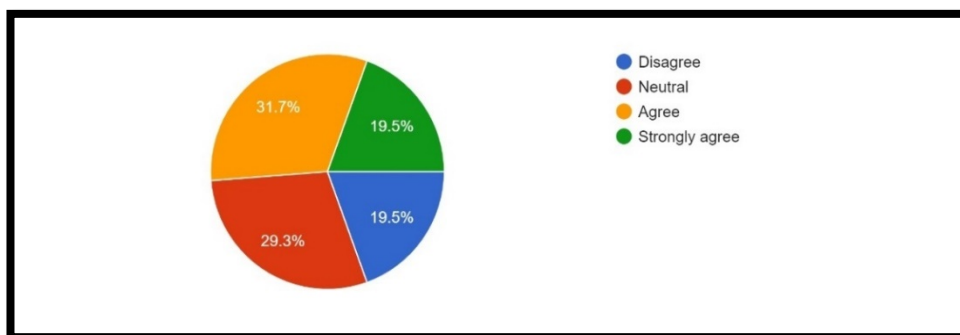
The study was approved by the hospital ethical review committee and written informed consent was obtained before a respondent completed the questionnaire. The questionnaire didn't contain the name

of the participants; thus, the confidentiality of the participants was maintained.

**Results:**

Training was associated with an increase in the prevalence of positive attitudes, from 51.4% in the pre-BLS group to 66.8% in the post-BLS group. In our study, the proportion of health-care workers who reported a positive attitude increased significantly from the pre-BLS

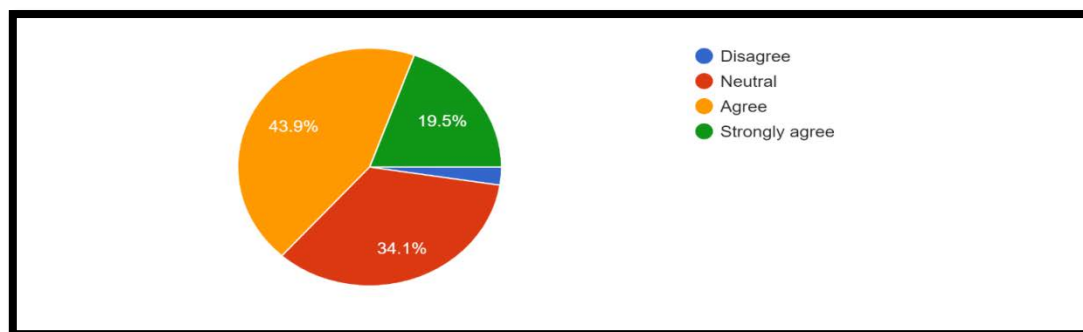
group to the post-BLS group, showing a positive effect of BLS training. This effect of recent BLS training on attitude remained after adjusting for known possible confounders, including previous BLS training. In regression analyses, recent BLS training predicted positive attitude, as did the number of previous BLS training courses, previous exposure to cardiac-arrest cases and low concern scores.



**Figure 1: Participants response after training about mouth-to-mouth ventilation during CPR.**

If an AED is available, 41.5% participants strongly feel that they would use it to attend a cardiac arrest patient. 41.5% also agree for the same. 14% were neutral. AED should be mandated in the clinic and office settings according to 82.9% participants. 17.1 participants were neutral.

63.5 % agreed that defibrillation should be performed by any healthcare professional on the scene. After training 87.8% feel that they know how to defibrillate. 41.5% Strongly agree that only doctors should defibrillate. 17% agree for this and 36% completely disagree for the same.



**Figure 2: Participants response after training about ability to work as a member of resuscitation team**

**Discussion:**

The knowledge and abilities of initial life-support care have been the core emphasis of BLS training. However, attitude is also crucial in real-life situations. We focused on characteristics that influence willingness to perform CPR and assessed

them using a questionnaire. The survival rate after cardiac arrest depends on the quality of cardiopulmonary resuscitation (CPR), alarm response time, and time to defibrillation [1,2]. All healthcare professionals should be able to perform CPR with competence [3]. Studies have

investigated and compared different ways of teaching CPR with the aim to find a gold standard, maximizing the best retention of knowledge [4-6]. Some studies have also suggested that too much emphasis is placed upon verbal information and too little on practical skills during training [5,7,8]. In the year 2000, CPR guidelines recommended that health care professionals should use an AED as soon as possible during CPR [9]. In order to be able to perform CPR effectively, however, they must first possess a theoretical knowledge of the subject. Previous studies have mostly investigated the CPR knowledge of nurses [10, 11]. One of these studies, for example, stated that accurate knowledge of CPR guidelines was associated with a better chest compression rate and compression to ventilation ratio [10]. In another study including a mixed group of 224 medical students and physicians, improvement in CPR knowledge was recognized after training [12].

Repeated training helps employees remember CPR and how to operate an AED [8]. It is difficult to retain knowledge and abilities in CPR during and after training, and it necessitates systematic instruction with suitable methods [3]. The number of previous BLS training events attended had a beneficial effect in our study, lowering concern and raising attitude. Re-education was found to improve knowledge and abilities in a prior research of professional nurses CPR skills, which was examined at regular intervals [5]. In a number of earlier research [8, 9], a lack of training was cited as a major factor influencing health-care providers opinions toward CPR performance. Even for seasoned employees, data suggests that training is necessary [8]. Our findings, which were consistent with earlier research, showed that repeated instructional programmes can change attitudes regarding CPR and the use of AEDs. The number of previous BLS

training courses taken was linked to the degrees of knowledge. [13]

Participants with a more positive attitude and concern, training experience resulted in more positive attitudes and reduced anxiety. Individuals with limited experience are less knowledgeable about CPR and AEDs, CPR training should be done on a regular basis.

Individual providers and health-care organisations, both parties should be involved in ensuring that such courses are offered. Future research is needed to determine the effects of varied BLS training frequency and formats on performance.

### **Conclusion:**

Our findings, which corroborated earlier research, showed that repeated instruction programmes can alter attitudes regarding CPR performance and AED use. The number of previous BLS training courses attended was linked to attitudes and concerns about CPR and AEDs, with persons with more training experience having better attitudes and willingness to perform CPR.

Our findings, which corroborated earlier research, showed that repeated instruction programme can alter attitudes regarding CPR performance and AED use. The number of previous BLS training courses attended was linked to attitudes and concerns about CPR and AEDs, with persons with more training experience having better attitudes and less concern than those with little experience.

CPR training should be done on a regular basis. Individual clinicians and health-care organizations should both be involved in ensuring that such training are taken and finished in order to improve confidence in CPR performance and perhaps save lives.

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finished in order to improve confidence in CPR performance and perhaps save lives. Future research is needed to determine the impact and effectiveness of varied BLS training frequency and formats on performance.

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