

# Awareness of cardiopulmonary resuscitation among school students – A survey

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## ABSTRACT

**Aim:** The aim of the study was to check the awareness of cardiopulmonary resuscitation (CPR) among school students. **Introduction:** CPR is an emergency procedure that usually involves chest compressions as well as artificial ventilation to restore the intact brain function, after which blood circulation and normal respiration in a person is retained, during an emergency such as cardiac arrest. It is usually done when the person is having abnormal breathing or no breathing. **Materials and Methods:** The survey was conducted among the school students of age groups 15–7 years. The survey was conducted to check the knowledge on CPR. The questionnaire was prepared and sent to the participants through the online link of survey planet and the results were statistically analyzed. **Results:** The survey is aimed at creating awareness on CPR among the participants. CPR serves as the foundation of advanced life support. CPR consists of the use of chest compressions and artificial ventilation to maintain the circulatory flow and oxygenation during cardiac arrest. The preparation, techniques, and the post-procedures of CPR are made clear, and through the survey, awareness is thereby created among the school students. **Conclusion:** CPR is one of the most important life-saving techniques and hence an updated knowledge is useful. Hence, this survey has created awareness on CPR among the South Indian population through the extensive questionnaire based on the procedures and techniques of CPR.

**KEY WORDS:** Artificial ventilations, Awareness, Chest compressions, Cardiopulmonary resuscitation, Survey

## INTRODUCTION

Cardiopulmonary resuscitation (CPR) is one of the major life-saving techniques at the time of emergencies such as cardiac arrest. It can be done to an infant, child, or an adult who is suffering from cardiac arrest or respiratory arrest, thereby improving their chances of survival. References of life-saving techniques such as mouth to mouth resuscitation can be found in biblical literature; resuscitation is described in the book of kings, where the king named Hebrew Prophet Elijah performed the first assumed mouth to mouth resuscitation.<sup>[1]</sup> Mouth to mouth resuscitation can also be cited in several other places in history. For instance, in 1740, the Paris Academy of Sciences recommended the mouth to mouth resuscitation to save the drowning victims and officially, Dr. Friedrich Maass in 1891, performed the first-ever documented

chest compression technique.<sup>[2,3]</sup> Leonard Scherlis, a well-known cardiologist, started the American Heart Association (AHA) and the in 1979, at the Third National Conference on CPR, ACLS was formally introduced.<sup>[2,3]</sup>

Despite several developments of technology in the field of medicine, CPR still is considered one of the most common and important methods in saving them out of the hospital cardiac arrest victims. Interestingly, one of the prospective observational studies from Germany states that physician initiated CPR compared to that by emergency medical services or laypersons did not improve the survival rates of the cardiac arrest victims.<sup>[4]</sup> Due to the presence of a low prevalence of bystander CPR, creating more awareness and the removal of obstacles in performing CPR is one of the major considerations in the development of international guidelines.<sup>[5,6]</sup> In an effort to increase the awareness and promote CPR rates, the AHA released a controversial recommendation on hands-only CPR.<sup>[6]</sup> It was with the motto that it would encourage

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more bystanders to “take action,” to thereby save lives. Various studies on animals have found that the addition of ventilation to a bystander CPR did not improve the survival rates in ventricular fibrillation<sup>[7]</sup> and myocardial infarction.<sup>[8]</sup>

CPR was found to be more effective and accurate on the following conditions:

- There was only a short delay to its onset.
- Both chest compressions and ventilation were provided, rather than only either one of them.
- CPR provided by an educated or non-lay person.
- Long delay in the arrival of an ambulance or other medical emergency services.
- If the arrest took place at home or outside the hospital.<sup>[9]</sup>

However, considering the skill retention, Heidenreich *et al.* stated that instructions for hands-only CPR were much easier to remember and perform than the conventional CPR.<sup>[10]</sup> One of recent research also found out that the quality of CPR is an important yet overlooked which affects the survival of cardiac arrest victims.<sup>[11,12]</sup> A number of studies also demonstrates that though CPR programs are ubiquitous, the skills involved in CPR deteriorates over time.<sup>[13-17]</sup> The science of resuscitation is constantly evolving with new discoveries and new advancements in technology. It is inevitable that the CPR guidelines will continue to change, updated, and revised. Hence, it is important to constantly evaluate the current scientific evidence, adapt the latest knowledge, and thereby create awareness for the local use in a community.

## MATERIALS AND METHODS

It is the questionnaire-based online survey using the link created in survey Planet. This survey was taken by 100 participants. The participants were school students.<sup>[15-17]</sup> The factors possibly associated with poor preventive practices are significant. The information collected through the survey is analyzed and presented statistically.

## RESULTS

A total of 100 students of age groups between 14 and 18 were chosen from South Indian schools to take up the survey. Among the students who took up the survey, only 29% of the students claimed that they are aware of CPR [Figure 1]. This shows that most of them are not aware of this emergency procedure. Moreover, when asked if they have come across someone or undergoing CPR, the response was almost the same as the previous question where only 28% have claimed that they have come across CPR and the rest have not heard or seen them come across. This shows that CPR is not so prevalent in our society even

in the developed areas. 65% of the population said yes when they were asked if the knowledge about CPR is essential to all the healthcare professionals [Figure 2]. This shows that they feel that CPR is not something that everyone can perform, and hence they want all the health-care professionals to know them correctly. When the students were asked if the CPR procedure is beneficial or more inaccurate and harmful, most of them, that is, about 79% of the population felt that it is beneficial to the patients. Although they are not aware of the procedures and what it is exactly, they feel that it is some procedure performed which may save lives and hence, 74% of the population feels that it is not a waste of workforce and time, it is a useful procedure. 49% of the population answered maybe, and 35% of the population said yes when they were asked if CPR is a basic emergency need for the betterment of humankind and health status. This shows that the population is not sure about how CPR works but still feel that it might be important and life-saving. Among those students who were aware of CPR, only 31% of the population knew the steps to perform CPR and the remaining 69% did not have any idea about the steps involved in performing CPR. When the students were asked, if CPR is performed to save the lives of cardiac arrest victims, 36% said yes, 49% said maybe, and the remaining students said no. Most of the students who took up the survey answered maybe as they were

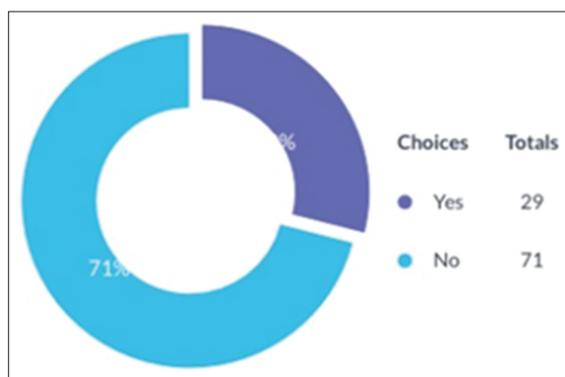


Figure 1: Are you aware of cardiopulmonary resuscitation?

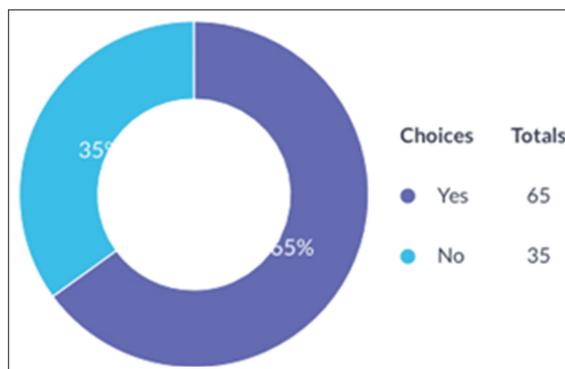


Figure 2: Do you think knowledge about correct cardiopulmonary resuscitation procedure is mandatory to all the health-care professional

not sure but guessed that it might be for cardiac arrest victims as the name suggests – CPR. About 59% of the population answered do not know, 25% of the population answered true and the remaining 16% said false when they were questioned if artificial respiration is more appropriate than CPR. This shows that most of them do not know that which one must be better at the time of emergency. 73% of the population agreed and said true when they were asked if CPR is severely misinterpreted in movies and TV as being effective in a person who is not breathing and has no circulation [Figure 3]. This is because most of the population feels that CPR procedure itself is portrayed in the wrong way in the media and that the actual procedure is something different. When asked if the survival rate is high only when CPR is performed immediately after cardiac arrest, 79% of them agreed and said true. This is because they think that any severe illness, especially when it is concerned with the heart, has to be treated as soon as possible for the best results as the heart is one of the most vital organs required for the functioning of the body. Finally, when the students were asked if they would be interested to participate in CPR awareness programs and have a life-saving experience, 88% of the population which is most of the students said yes [Figure 4]. They gave such a positive response as they

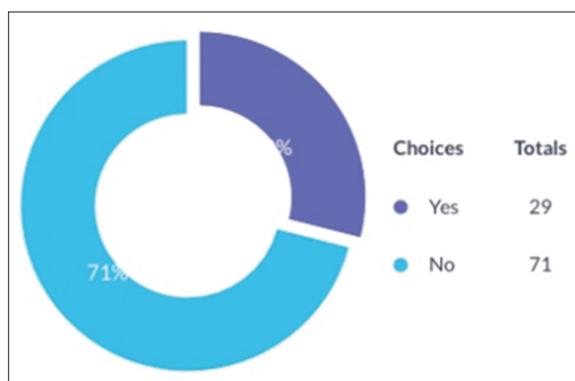
would like to spread more awareness to others who are unaware and thereby save lives.

## DISCUSSION

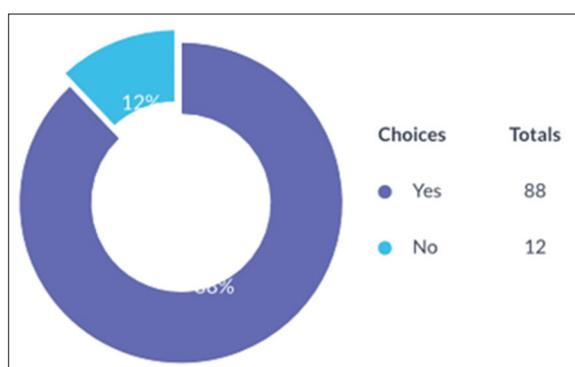
From the survey conducted above, we come to know that most of them are not aware of CPR. This is due to the lack of awareness programs on CPR conducted in schools and lack of awareness among the public regarding the emergency procedures. Moreover, most of them said a no when they were asked if they have come across someone performing or undergoing CPR which shows that it is a very rare procedure performed. The survey was mostly taken up by the school students of urban region who are equipped with all the amenities and best of education lack awareness about CPR which means there might be a complete lack of awareness of what CPR is about among the rural population, though for rural population this technique is much use as they might have lesser medical and treatment facilities and hospitals when compared to the urban region. The hands-on CPR might serve as a boon to them in case of emergencies if properly performed. Even a very little amount of population who are aware of CPR are not ready to perform them in case of an emergency. This is because most of them are not confident about the proper technique and the steps involved in CPR.

Further, the technique of CPR is misinterpreted by the public in most of the cases as it is mostly known by them through television or from movies and other media who do not show the right techniques, and hence, the viewers do feel that it is not possible practically when someone is suffering from an emergency condition. Moreover, with all the development technologies in the current digital world, people feel that getting proper treatment by the qualified doctors in a hospital is the right thing rather than performing with non trained professionals which might worsen the case. Little are they aware of the fact that when performed in the right manner, CPR is very effective and can be performed by anyone who is equipped with the proper procedure and technique. Most of them said yes when they were asked if knowledge about CPR is mandatory to health-care professionals which shows that they feel that it might be useful but can be performed by only well trained medical professionals and not by a common man. Knowledge about CPR is of course very essential for a medical professional, but it also important for everyone to know as it might be of great help during emergencies.

We also come to know that most of the students were pretty much interested and wanted to participate in the CPR awareness programs and have a lifesaving experience. Hence, as a medical professional, it is very important to spread awareness about CPR and makes



**Figure 3:** Cardiopulmonary resuscitation is severely misinterpreted in movies and TV as being effective in a person who is not breathing and has no circulation



**Figure 4:** Would you like to participate in cardiopulmonary resuscitation awareness program and have above life-saving experience?

the technique as a commonly used one during an emergency. Everyone should be aware of the hands-on CPR technique so that it is used during an emergency, especially in the rural areas. Simple, first level CPR courses are available in every community and through the internet, but the biggest mistake is not trying them out during an emergency. Let's hope that when the same survey is taken up after 10 years among both rural and urban population, if the percentages obtained in the current results are interchanged and most of them are aware, and it becomes a very common procedure performed during an emergency.

## CONCLUSION

There is a lack of knowledge and awareness about CPR among the school students and this survey aimed at creating awareness on CPR turned out successful by circulation an extensive questionnaire which assessed the knowledge of the students on CPR and checked their awareness on this technique.

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