A Study On Knowledge, Attitude And Practice Of Life Saving Skills Like Cardiopulmonary Resuscitation (CPR) Among Adolescents

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Introduction

Out of hospital cardiac arrest (OHCA) is a significant public health concern. Cardiac arrest is the reason for 5%-10% of all deaths among children aged 5-19 years [1]. Prompt intervention by lay persons in out of hospital cardiac arrest including schools can save many lives. Hence this training needs to be started from places of learning. Imparting education young people at school is one way to spread CPR knowledge in society [2]. Theoretical training on CPR can be started at the middle school level, and practical training can be incorporated in school curricula from secondary level [3].

The CPR training (as defined below) should be required for graduation from secondary school. The schools that provide a CPR training program that includes Automated External defibrillator (AED) skills practice (a CPR-AED course), students should be given an opportunity to practice and master all steps of CPR and AED use [4]. Incorporating different methods in the cardiopulmonary resuscitation teaching facilitates knowledge retention and increase the number of positive outcomes after sudden cardiac arrest.[5,6,9]. Increasing the number of trained students may minimize the reluctance to conduct bystander CPR and increase the number of positive outcomes after sudden cardiopulmonary collapse [7]. A practical test including feedback directly after training improved the students' acquisition of practical CPR skills [8].

Significant progress in schoolchildren's cardiopulmonary resuscitation knowledge after training was established. Early introduction of training is recommended. Cardiopulmonary resuscitation knowledge raises awareness of the responsibility to help others and increases self-confidence to provide bystander cardiopulmonary resuscitation. It can be concluded that early cardiopulmonary resuscitation training for children is crucial [10]

Aims and objectives:

1.To study the knowledge attitude and practice of life saving skills like CPR among adolescents.

2. To study any variation of knowledge, attitude and practice of life saving skills with different ages of adolescent like early ,mid and late adolescent

Materials and methods:

Study was conducted at Eastern Railway Hospital, Liluah, West Bengal with 64 adolescents from Bharat Scouts in July,2023. A pretested questionnaire was used to assess the knowledge, attitude and practice of CPR (Cardio-Pulmonary Resuscitation). This was followed by training on Cardio-Pulmonary Resuscitation (CPR). The Bharat Scouts students undergo CPR training in their curriculum after a certain stage. This is a cross-sectional observational study. The data was analysed with the help of appropriate statistical methods. Test statistic used Pearson's Chi-squared test and Fisher's Exact Test for Count Data. P value <=0.05 is significant.

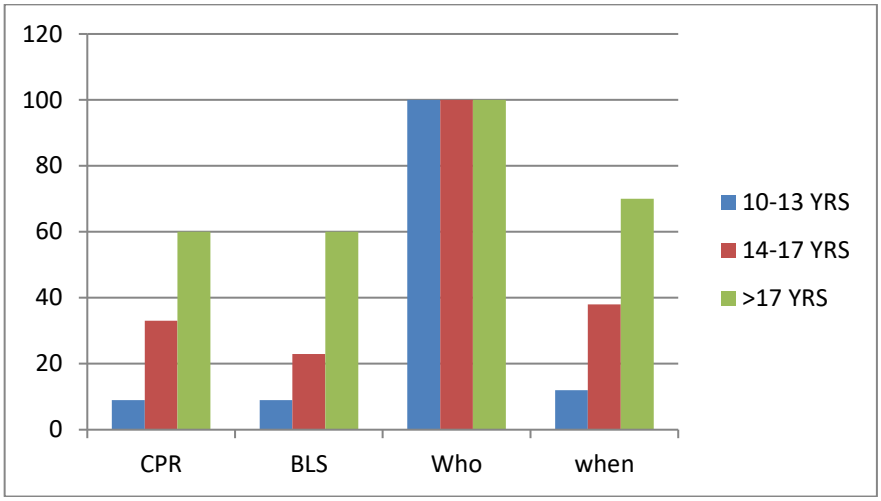
Results:

Table 1: Showing percentage of adolescents of different age groups having correct knowledge on basic life support,

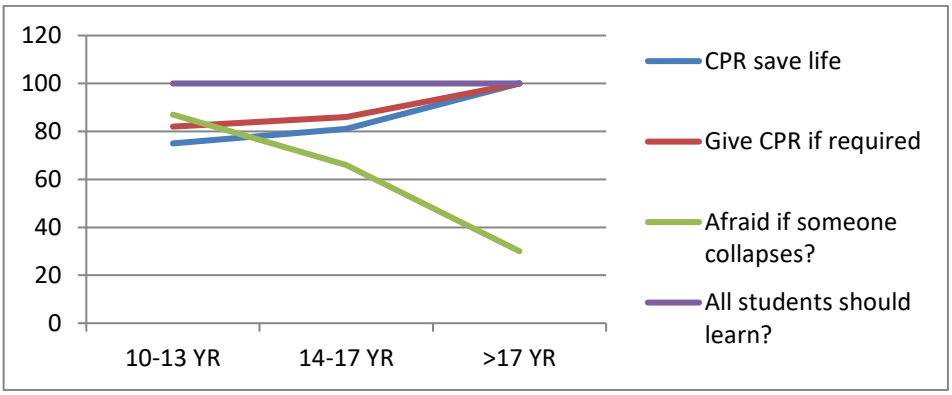
	10 - 13 YRS	14 - 17 YRS	P Value
Knowledge on BLS	9%	23%	0.01216*
Knowledge on CPR	9%	33%	6.527e-05*
Knowledge of WHEN	12%	38%	4.46e-05*

Based on the above table showing knowledge of older adolescents of age 14-17 years is significantly more than those in early adolescence

Bar Chart 1: Showing comparison of students' knowledge regarding what is CPR, What consists of basic life support(BLS), who can give CPR, When to give CPR between different age groups



Bar chart 1 shows knowledge increases as adolescents get older.



Line diagram 2: Comparison of attitude (in %) on applying CPR in different age groups

The above line diagram shows that with increase in age of the adolescents, the attitude to give CPR to save life increases. There is increased response of willingness to give CPR if required as age increases. The percentage of adolescents who claim that they are afraid of application of CPR steps for saving lives decreases as age increases. All feel that students should learn CPR

34 were boys, 30 were girls .36% early, 38 % mid, 20% late adolescents. More number of boys reported helping a person in medical emergency / saved life, though not statistically significant. None in early, 4 % in mid and 70 % in late adolescence have either come across situation where CPR may be required or have given CPR. Knowledge of CPR is significantly high among late adolescents in comparison to mid and early ones.

Discussion:

This study had been undertaken to assess the knowledge and attitude of adolescents before giving them training of CPR skills etc.

Proper training of CPR can increase the skills in three parameters, namely compressions per minute, depth and chest recoil [11]. The adolescents in Bharat Scouts especially those older than 14 years have received preliminary training on CPR by their trainers. Hence this study is like other studies which shows prior training improves knowledge and skill. After filling up of this questionnaire, the adolescents were trained by IAP ALS BLS trainers. In one of the studies, training given by medical students to school children, not only benefits the children but medical students themselves to develop their professional skills after teaching [12].

In a study by Pivač S et al, following CPR training significant progress in knowledge was seen in youngest age group with mean age 12.5 yrs [10]. It was found in a study after training, the greatest increase was seen in variables like attitude towards helping others and self confidence. In this study knowledge was more among those aged >17 years than those aged 14-17 years. The older adolescents have shown an increase in attitude to help others.

Life skills have been defined as " abilities for adaptive and positive behaviour that enable individuals to deal effectively with the demands and challenges of everyday life." (WHO. 1993).

A study from South Africa report that life skills are a group of psychosocial competencies and interpersonal skills with which an adolescent makes decisions responsibly and deals effectively with the demands and challenges of everyday life [13]. A study from Seattle, Washington, mentioned that life skills education helps adolescents to acquire life skills like time management, achievement, emotional control, social competence, active initiation, self-confidence, intellectual flexibility

and task leadership. Not only these help adolescents prevent harmful behaviour but make educated and responsible decisions about their own lives and well-being and their actions as well [14].

In our study the life skill trainingalong with CPR training in Scouts helped them reduce their fear when facing an emergency and increased their willingness to initiate CPR when required.

Similarly, studies by Cave DM et al, and others recommend training in first aid, CPR and familiarization with AED as a part of school curricula [4,15]. Reviews show that most programs that taught resuscitation the experience of the trainer did not have effect on student outcome. Any program if incorporates both practical as well as interactive components was important in delivering information and facilitating retention of knowledge. In other studies by Reveruzzi B,et al. and Schroeder DC et al., good educational resources and facilitator training made the programs more effective [15,16]. In our study the training consisted of practical, interactive and audio-visual components. After proper evaluation, all the adolescents were certified that they could effectively give CPR after their training for the same.

A review by Schroeder DC mentions that in Europe bystander CPR rates are low hence teaching school students the skills of CPR can improve survival's in out of hospital cardiac arrest [16]. The students, teachers and school nurses also need to take training on CPR and demonstrate their skills where required [17]

Reviews show that school children are highly motivated to be trained in CPR. Chest compressions and mouth to mouth ventilation could be given effectively by students more than 12 years of age [16.] Digital media like brief video is also useful in training [16,18]. In another study it has been found that training on bag mask ventilation and chest compression together yields better results in depth of chest compression, calling for urgent help, etc than either alone. Brief CPR video training resulted in improved CPR quality and responsiveness in high school students. Brief educational interventions are beneficial to improve CPR responsiveness, but psychomotor training is important for CPR quality [18]. This is similarly found in our study, where training given during our session consisted of all the components above, hence the depth of compression and responsiveness were up to the mark.

Although innovative training modalities are equally effective to instructor-led training when teaching school children CPR, compression depth was frequently suboptimal [19]. In this study the students in scouts especially those more than 14 years, have previously been exposed to CPR training and hence repeated trainings may have effect on depth of chest compressions. However, a meta-analysis by Lim XMA et al [20], mentions that technology-based training may be helpful in refreshing the knowledge of students in school. Hence videos, computer programs and more mobile apps may be developed to train adolescents in life saving skills like CPR.

Limitations of the study were smaller sample size. More studies need to be done.

Conclusion:

In this study, knowledge of CPR in adolescents increased as the age increases. The elder ones can overcome their fears in helping others during medical emergency than their younger counterparts. The knowledge and attitude to help improves with age and with reinforcement. Hence spreading awareness on CPR is essential in all adolescents. That may be done through including the training of life saving skills like CPR, use of AED etc in school curriculum. Mobile apps, videos or computer games may aid in reinforcing their knowledge.

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