



Original Research Article

Knowledge, attitude and practices of cardiopulmonary resuscitation among medical interns & junior residents

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ARTICLE INFO

Article history:

Received 07-10-2021

Accepted 29-12-2021

Available online 28-11-2022

Keywords:

Basic life support

CPR

Cardiac arrest

Knowledge

Medical interns

ABSTRACT

Background: Cardiopulmonary resuscitation (CPR) is a lifesaving technique that's useful in many emergencies. There is documented evidence that timely performed CPR can prevent sudden death. The quality of CPR depends on the sufficiency of the knowledge of health professionals, with this background the present study was undertaken to assess knowledge, attitude and practice of Cardiopulmonary Resuscitation among Junior Residents and Medical interns.

Materials and Methods: It is a cross-sectional study conducted from October to December 2018 among 100 medical interns and junior residents of a tertiary care institute in Karnataka. A Pre tested structured questionnaire was used to assess the knowledge, attitude and practice among the study participants.

Results: The mean knowledge score of MBBS interns was 22.63 ± 4.211 and the mean score of junior residents was 22.06 ± 3.788 . Out of the total, 52% of study subjects had fair knowledge, 36% had good knowledge score and only 8% had poor knowledge score. Almost all (90%) the participants had positive attitude towards CPR, 63% of study participants had assisted while performing CPR and 34% had performed CPR independently.

Conclusions: The knowledge, attitude and practices of cardiopulmonary resuscitation among the medical interns and junior residents is better in the present study compared to studies conducted in other parts of India. Simulation based training and exposure to more number of CPR practices in real scenarios will further boost up their confidence to perform this life saving technique.

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1. Introduction

Cardiopulmonary arrest is a major public health problem estimated to account for 15-20% of all deaths.¹ Cardiac arrest can occur at any point of time and it's an emergency. Medical professionals when met with this emergency can perform Cardiopulmonary Resuscitation (CPR) before any further assistance reaches the scene and could help save a life.

CPR is a lifesaving technique and consists of chest compression and rescue breathing, which help to maintain

the oxygenated blood circulation in the body. CPR is necessary in cases of heart attacks, suffocation, near-drowning, electrocution injuries, or any other situation in which persons breathing or heart beat has stopped.²

The quality of CPR depends on the adequacy of the knowledge of health care personal and facilities. However a study done in Europe and Switzerland have reported low confidence and inadequate knowledge among the medical interns.^{3,4} There has also been certain updates in the 2015 AHA guidelines on BLS like the chest compression rate of 100-120/min, chest compression depth 5-6cm and deliver a breath every 6 seconds in CPR with advanced ventilation, routine use of impedance threshold

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device during conventional CPR is not recommended hence repeated training of the medical professionals can help save lives.⁵

Increasing survival of patient from cardio-pulmonary arrest requires improvement in resuscitation education. NMC has added this in curriculum of medical undergraduates as part of skill training in competency based medical education to achieve proficiency in it.

A Cross sectional study on Knowledge, Attitude and Practices on CPR among Medical and Nursing Interns showed that 36% of MBBS interns have poor knowledge and 42% of them have poor practice score of CPR.⁶

As BLS and CPR training is a part of internship orientation programme in the present institute, we have taken this opportunity to assess the knowledge, attitude and practice of CPR among Junior Residents and Interns of ESIC Medical College and Hospital and to recommend changes required if any for the betterment of society we live in.

2. Materials and Methods

This is cross-sectional study conducted from October-December 2018 which included 85 medical interns and 15 Junior Residents working in ESIC Medical College and Hospital, Gulbarga constituting a total of 100 participants. A pretested and pre-validated self-administered questionnaire was used for data collection after taking verbal consent from the participants. The Knowledge regarding CPR was assessed by main questions consisting of 2-3 sub-questions regarding correct sequence of CPR, effectiveness of CPR, purpose of CPR, knowledge about compression to ventilation ratio, knowledge about colour codes and drugs used. Most of the questions used for knowledge assessment were true/false(43.3%), yes/no type(26.7%) and multiple correct answers (20%). Very few questions were objective type. The knowledge score for each participant was calculated with a maximum possible score of 37 and minimum score of 0 and respondents were graded based on pre-validated score. Score more than >30 was considered as excellent, 24-29 as good, 17-23 as fair and <17 as poor. Data was analyzed using SPSS software version 20. Normality testing was done by visual inspection of Q-Q plot, independent t test was performed to find the statistical difference between the mean score among JR's and medical interns.

3. Results

The correct responses of the participants on Knowledge questions on cardiopulmonary resuscitation was elicited which showed that 98% of them considered CPR as an emergency condition, 75% knew about the purpose of CPR, 61% had knowledge about the correct sequence of CPR, 52% knew that CPR is effective if performed within 6-

Table 1: Distribution of participants based on Knowledge questionnaire:

Knowledge questions	Correct answers % (n=100)
CPR is an emergency condition	98%
Purpose of CPR	75%
Correct sequence of CPR	61%
Duration for Effectiveness of CPR	52%
Compression to ventilation ratio	88%
Drugs used in CPR	14%
Color codes in CPR	17%

7 minutes of stoppage of blood flow to vital organs, 88% had knowledge about the Compression to ventilation ratio, however only 14% and 17% of the participants had knowledge about the drugs and color codes in CPR respectively (Table 1).

Table 2: Mean Knowledge scores among Junior Residents and Interns:

Participants	Mean score ± SD	95% CI
JR's	22.06 ± 3.788	20.188-23.932
Interns	22.63 ± 4.211	21.737-23.523

t value= 0.539, p=0.595

There was no statistically significant difference (t value= 0.539, p=0.595) between the mean knowledge score among the JR's 22.06 ± 3.788 and interns 22.63 ± 4.211 (Table 2).

Table 3: Range of Knowledge Scores among the study Participants:

Range	Remarks	No. of Participants scored
<17	Poor	8%
17-23	Fair	52%
24-29	Good	35%
>30	Excellent	5%

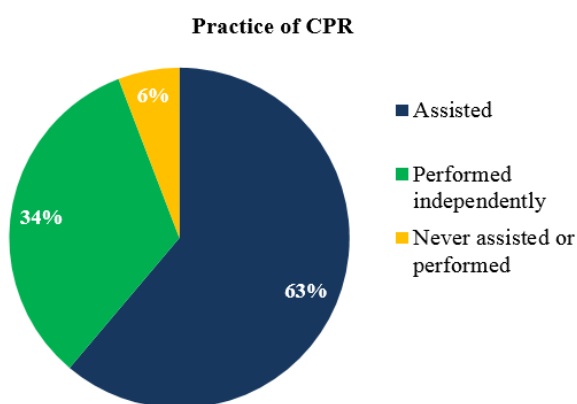
The range of Knowledge score among the study participants revealed that almost half the study subjects (52%) had fair score about the CPR and 35% got a Good Score. Only 8% of the study population had poor Knowledge score. Total 5 individuals (1 JR & 4 Interns) got excellent score (Table 3).

Attitude towards CPR among the study subjects showed that on an average more than 90% of the participants had positive attitude towards CPR (Table 4).

Practice of CPR among the participants showed that most of them 63% assisted while performing CPR, a good number i.e 34% of them have performed CPR independently and only 6% of them have never assisted or have performed CPR independently (Figure 1).

Table 4: Attitude towards CPR among the study Participants:

Questions asked	Positive attitude(N=100)	
	JRS (N=15)	Medical interns (N=85)
CPR is a basic emergency need	93.3%	97.65%
CPR knowledge is mandatory to all health care professionals	93.3%	97.65%
Like to participate hands in workshop on CPR	93.3%	100%
CPR training should be made mandatory to all medical undergraduates	100%	100%

**Fig. 1:** Practices of CPR among the Study Participants

4. Discussion

Early institution of CPR can increase the chances of survival of a victim from sudden cardiac arrest. These trainings have been already recommended to the high school students in developed countries, however developing countries like India are yet to implement it at the undergraduate level.

In present study conducted among medical interns and junior residents, total of 52% had fair knowledge which was comparatively better than other studies that were conducted in Ethiopia,⁷ Iran,⁸ New Zealand⁹ and India.^{10,11} In another study conducted in 2014 in Andhra Pradesh 42% of the interns had fair knowledge score and 8% had good score which was less as compared to the present study.⁶ The mean knowledge score in our study was found to be 22.51 ± 4.135 which was higher compared to the mean knowledge score 13.24 ± 2.8 of a study done in Ethiopia.⁷ Knowledge about the correct order of the procedure was 83% in our study compared to 22% in a study done in Iran. 61% of participants in our study had answered the correct sequence of CPR, while a study done by Shahabe A et al in Saudi Arabia¹² and Akshatha et al in India¹³ showed that only 28.5% and 10% of the medical interns had knowledge about the correct sequence of CPR. 88% had knowledge about the Compression to ventilation ratio in the present study which was only 11% in a study done in Istanbul.¹⁴

This higher mean knowledge score in the present study may be attributed to the BLS and CPR training of interns as a part of internship orientation programme which is distributed over a period of three days, in the present institute.

Positive attitude was seen clearly in the present study were 93% JR's and 100% interns were willing to participate in hands on workshop on CPR and that CPR training should be made mandatory to all medical undergraduates which was almost in line with the findings of study done in Andhra Pradesh⁶ where 94% of the participants were ready to undergo hands on practice in workshop. Similarly in a study in Ethiopia positive attitude towards hands on workshop was seen in 94% of interns.⁷

A very good number of participants (34%) have performed CPR independently in the present study which was slightly higher compared to a study done by Mendhe HG et al were 29% of participants had performed CPR independently.⁶ However this number has to improve which can only be achieved by repeated training which builds up the confidence to perform the procedure independently.

5. Conclusion

The findings of the present study shows the knowledge, attitude and practice of cardiopulmonary resuscitation among the medical interns and junior residents is better compared to studies conducted in other parts of India. BLS training is a part of internship orientation in the present institute and certification is also done post training which clearly shows the importance of hands on workshop. The confidence of the interns to carry out CPR can be further boosted by exposure to enough number of real CPR cases, simulation based training in skill labs. CPR training should be a part of the curriculum to improve it. As there is a problem of poor retention of CPR skills, refresher training will fill the knowledge gaps and up-skill the new information.

6. Acknowledgements

I am thankful to my colleagues, staff members and interns and junior residents for their participation & co-operation during the study.

7. Source of Funding

None.

8. Conflict of Interest

None.

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Cite this article: Sajjan SV, Reddy A, Shingade PP. Knowledge, attitude and practices of cardiopulmonary resuscitation among medical interns & junior residents. *Panacea J Med Sci* 2022;12(3):520-523.