

## Cardio Pulmonary Resuscitation (CPR) : A Global Issue of Lack of Knowledge and Skill among Medical Students and Health Care Personnel

Pranab Kanti Mallick<sup>1\*</sup> Kakoli Chowdhury<sup>2</sup>

Cardio Pulmonary Resuscitation (CPR) is an emergency procedure that combines chest compressions often with artificial ventilation is an effort to manually preserve intact brain function until further measures are taken to restore spontaneous blood circulation and breathing in a person who is in cardiac arrest. CPR alone is unlikely to restart the heart. Its main purpose is to restore patient's flow of oxygenated blood to the brain and heart. The objective is to delay tissue death and to extend the brief window of opportunity to recover the patient. Immediate CPR can double to triple chance of survival after cardiac arrest.

In the 19<sup>th</sup> century Dr. H. R. Sylvester described a method (Sylvester method) of artificial ventilation in which the patient is laid on their back and their arms are raised above their head to aid inhalation and then pressed against their chest to aid exhalation. The procedure is repeated 16 times/minute. A second technique called the "Holger Nielson technique" described in the 1st edition of "Boy Scout Handbook" in the USA in 1911. Kouwenhoven et al published the 1st series of 14 cases of successful close chest compression in case of cardiac arrest in 1960. The same year another group used rescue breathings along with chest compressions during the resuscitation (Maryland Medical University, Ocean city). It was not until the middle of the 20<sup>th</sup> century that the wider medical community started to recognize and promote artificial ventilation in the form of mouth-mouth resuscitation combined with chest

compressions as a key part of resuscitations following cardiac arrest. The American Heart Association (AHA) published the first version of CPR guidelines in 1966. Thereafter periodically, the science is revisited, the evidences reviewed and the guidelines are revised repeatedly. In the current new guideline the sequence of CPR, A-B-C (Airway-Breathing-Circulation) has been changed to C-A-B that is the CPR sequence is begun with chest compressions rather than the airway opening as soon as the cardiac arrest is identified.

The Basic Life Support (BLS) including CPR skills and Advanced Life Support (ALS) knowledge and skills unfortunately sub-optimal in our medical students and healthcare providers. These are also observed in India and European countries by a survey conducted by Chandran K V et al and Baldi E et al. They demonstrate that the BLS knowledge among young doctors in India is very low. Also in that survey they pointed out that cardiac arrest and CPR knowledge among medical students in the period leading up to the graduation is scarce throughout Europe, highlighting how this is probably a world-wide issue that can affect patients' care. They also found in their recent European survey that many courses didn't adhere to current international guidelines and many students didn't adhere to updated guidelines and they only reported their classes without any BLS skills practice. Also they pointed out that many students who are taught CPR during their initial undergraduate years, don't undergo any subsequent refresher training and this may have affected their long term knowledge. In Bangladesh the scenario is almost same. Most of the medical students have got no scope to witnessed CPR. This is more true in private medical colleges where number of patients and other facilities are poor. Most of the private medical colleges even have no ICU, PICU and HDU facility. Unless the students and HCPs are constantly exposed to cardiac/respiratory arrest scenario there is a possibility that they forget the essential steps of necessary skills.

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1. Senior Consultant of Paediatrics  
Evercare Hospital, Chattogram.

2. Junior Consultant of Radiology & Imaging  
Chittagong Medical College Hospital, Chattogram.

\*Correspondence: Dr. Pranab Kanti Mallick  
Cell : 01759 39 27 77  
E-mail: pranab.mallick.2010@gmail.com

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Considering all these aspects Bangladesh Medical and Dental Council (BMDC) in collaboration with DGHS, Bangladesh has to play pivotal role regarding achieving mandatory cardio pulmonary resuscitation competencies for undergraduate medical students and Health Care Personnel (HCPs) in Bangladesh. There should be stepwise approach starting from CPR training in the 3rd year of medical life with an annual refresh up to ALS training for 5th year medical students. HCPs have to give also training about essential lifesaving skills including CPR with a refresher course periodically which is to be included updated guidelines of different skills. This can be achieved by conducting simulation based exercising on a regular basis at the hospital to this group. This approach for the lifesaving maneuvers to train medical students and HCPs should be encouraged all round the world so those future generations of health care professionals who have all the tools to ensure the best chance of survival for their patients who need CPR.

#### References

1. Baldi E, Contri E, Bailoni A, Rendic K, Turcan V, Donchev N et al. Final year medical students' knowledge of cardiac arrest and CPR, we must do more! *Int J Cardiol* 2019; 296:76-80.  
DOI:10.1016/j.ijcard.2019.07.016.
2. Chandran KV, Abraham SV. Basic life support: Need of the hour-A study on the knowledge of basic life support among young doctors in India. *Indian J Crit Care Med.* 2020; 24(5):332.  
DOI:10.5005/jp-journals-10071-23442.
3. Roshana S, Batajoo KH, Piryani RM, Sharma MW. Basic life support: Knowledge and attitude of medical/paramedical professionals. *World J Emerg Med.* 2012; 3(2):141-145.  
DOI:10.5847/wjem,j.i.ssn.1920-8642.2012.02.011.
4. Baldi E, Savastano S, Contri E, Locki A, Conaghan P, Hulme J et al. Mandatoru cardio pulmonary resuscitation competencies for undergraduate health care students in Europe : A European resuscitation council guidance note. *Euer J Aneasthesiol.* 2020;37(10):1-3.  
DOI:10.1097/EJA.0000000000001272.
5. Suseel A, Panchu P, Abraham SV, Varghese S, George T, Joy L. An analysis of the efficacy of different teaching modalities in imparting adult cardio pulmonary resuscitation skills among first-year medical students: A pilot study. *Indian J Crit Care Med.* 2019; 23(11):509.  
DOI: 10.5005/jp-journalas-10071-23284.