



EFFECTIVENESS OF EDUCATIONAL PROGRAM ON KNOWLEDGE AND PRACTICE REGARDING BASIC LIFE SUPPORT AMONG NURSING OFFICER IN SELECTED HOSPITAL AT DELHI

Psychiatry

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ABSTRACT

Nursing Officers are usually the first to identify the need for and initiate cardiopulmonary resuscitation (CPR) on patients with cardiopulmonary arrest in the hospital setting. Cardiopulmonary resuscitation has been shown to reduce in-hospital deaths when received from adequately trained health care professionals. Poor CPR knowledge and skills among registered nurses may impede the survival and management of cardiac arrest victims. Employers and nursing professional bodies should encourage and monitor regular CPR refresher courses.

KEYWORDS

Cardiopulmonary resuscitation, Basic Life Support, Respiratory Arrest, Cardiac Arrest.

INTRODUCTION:

Life is a most precious one for each individual, saving life of a person is noble thing in the entire world, now a day most of the death occurs due to the improper management of client, especially in the emergency situation. Once the heart ceases to function, a healthy human brain may survive without oxygen for up to 4 minutes without suffering any permanent damage. According to recent statistics sudden cardiac arrest is rapidly becoming the leading cause of death. And if properly instructed, almost anyone can learn and perform CPR. It is during those critical minutes that CPR (Cardio Pulmonary Resuscitation) can provide oxygenated blood to the victim's brain and the heart, dramatically increasing his chance of survival. Resuscitation includes all measures that are applied to revive patients who have stopped breathing suddenly and unexpectedly due to either respiratory or cardiac failure. Resuscitation "is the art of restoring life or consciousness of one apparently dead. Resuscitation attempts date way back in time. Cardiopulmonary resuscitation (CPR) is one of the most evolving areas of saving actions that improve the survival rates. The preliminary steps of CPR, as defined by the American Heart Association are calling for help, establishing unresponsiveness in the victim by tapping or gently shaking and shouting at him or her, positioning the victim in a supine position on a hard surface, giving two breaths and checking the pulse.

Basic Life Support (BLS) refers to the care healthcare providers and public safety professionals provide to patients who are experiencing **respiratory arrest, cardiac arrest or airway obstruction.**

BLS includes psychomotor skills for performing high-quality cardiopulmonary resuscitation (CPR), using an automated external defibrillator (AED) and relieving an obstructed airway for patients of all ages.

Respiratory Arrest:

If the patient is not breathing but has a definitive pulse, the patient is in respiratory arrest.

Cardiac Arrest:

Cessation of mechanical cardiac activity with no clinical evidence of cardiac output. Cardiac arrest is a life-threatening situation in which the electrical and/or mechanical system of the heart malfunctions resulting in complete cessation of the heart's ability to function and circulate blood efficiently. If there is no breathing, no pulse and the patient is unresponsive, the patient is in cardiac arrest.

Check the adult for a carotid pulse and breathing simultaneously for 5-10 seconds. Do not check for more than 10 seconds

BLS focuses on these components: **Airway, Breathing, Circulation and Defibrillation.**

- **Airway:** Ensure open airway (jaw thrust or head-tilt-chin-lift), clearing the airway allows air into the body
- **Breathing:** providing rescue breaths (breathing for the victim) provides oxygen. Agonal breathing (or gasping) may be present in

up to 40% of adults in the first minutes after cardiac arrest. can be interpreted incorrectly as evidence of a circulation and that CPR is not needed

- **Circulation:** The carotid pulse (or any other pulse) is an inaccurate method for confirming the presence or absence of circulation assume that the adult who is breathing normally has a pulse chest compressions push blood around the body and slow down the rate of deterioration of the brain
- **Defibrillation:** is the use of an Automated External Defibrillator (an AED) to try to restart the heart.

Defibrillation Safety

- Do Not use in an explosive environment
- Do Not use if they lay in a pool of water
- Do Not use in Heavy rain
- In good working order
- Patches (NTG) AED
- Damp/Wet skin
- Hair on chest
- Jewellery
- Pacemaker

Cardiac arrest can happen anywhere –on the street, at home, or in a hospital emergency department, intensive care unit (ICU), or in patient bed. The system of care is different depending on whether the patient has an arrest inside or outside the hospital.

The 2 distinct adult chains of survival, which reflects the setting as well as the availability of rescuers and resources, are

- In-hospital cardiac arrest (IHCA)
- Out-of-hospital cardiac arrest (OHCA)

Adult Chain of Survival:

- Early access: Establish Unresponsiveness/no breathing then activate EMS
- Early CPR: Provide BLS/CPR within 4 minutes
- Early defibrillation: Have an AED on them and shocking within 5 minutes of the arrest
- Early advanced care: EMS/code team arriving soon thereafter.

Adult 1 rescuer CPR

- Check responsiveness (tap and shout), if no response:
- Check for no breathing (minimum 5 seconds; maximum 10 seconds)
- Activate emergency medical system and call for an AED
- Check for carotid pulse for (minimum 5 seconds; maximum 10 seconds)
- If there is no detectable pulse, start chest compressions at the lower part of the breastbone with the help of one hand on top of the other. Do 30 compressions at least 2 inches deep.
- Give 2 breaths (1 second each) watching chest rise. Do not over ventilate.
- Deliver second cycle of 30 compressions.
- Give 2 breaths (1 second each)

- Continue CPR until help arrives or the victim is revived. Push Hard, and Push Fast: compress at a minimum rate of at least 100 compressions per minute and a depth of at least 2 inches, and allow full chest recoil after each compression. Minimize interruptions in chest compressions.

Adult 2 Rescuers CPR:

- Ratio of 30 compressions to 2 breaths, Rate 100/minute or 5 cycles in 2 minutes (Ventilator) the rescuer at the head, (Compressor) the rescuer at the chest
- Ventilator determines responsiveness, if no response:
- Ventilator checks for no breathing or normal breathing (minimum 5 seconds; maximum 10 seconds)
- Compressor or bystander activates emergency medical system and calls for an AED
- Ventilator checks for circulation, carotid pulse (minimum 5 seconds; maximum 10 seconds)

If Victim has Pulse:

- Ventilator will provide rescue breaths for them:
- 1 breath every 5-6 seconds or about 10-12 per minute (each breath should be delivered over 1 second making the chest rise)

If Victim has No Pulse:

- Compressor will start chest compressions, with the heel of two hands at a ratio of:
- 30 compressions by the compressor to 2 ventilations by the Ventilator at a rate of at least 100 per minute and a depth of at least 2” or deeper for larger person
- The Ventilator can check for a pulse during compressions to make sure they are effective by feeling a pulse every compression.
- After every 5 cycles or 2 minutes of CPR switch to maintain effective CPR.

Important Facts about CPR you need to know

- For chest compressions for all ages, it's better to push too deep than not deep enough.
- Watching the chest rise is the best way to tell your rescue breaths are effective.
- Do not over-ventilate your patient when giving rescue breaths.
- A non-breathing child with a pulse above 60 beats per minute needs rescue breaths without compressions. Reassess pulse every 2 minutes. Begin compressions if pulse drops below 60 beats per minute.
- In the presence of an Advanced Airway do continuous compressions and non-stop rescue breathing at a rate of 1 breath every 6 to 8 seconds.
- Bag masks should only used in a two person rescue.
- After an AED delivers a shock immediately begin CPR. Do NOT reassess the victim.
- Place hands on the lower part of the breast bone for chest compressions.
- The 2 thumb technique for infant compressions is only used for 2 person rescue.
- 100 compressions per minute is the standard rate for all ages.
- Adult compression depth is “at least” 2 inches. Child “about” 2 inches, Infant “about 1.5 inches.
- Child and Infant use 15:2 compressions to breaths ratio when there are 2 rescuers.
- It is important to compress to correct depth to create adequate blood flow during compressions. When in doubt, push deeper. If you aren't sure you are pushing deep enough, push deeper.
- The first step when using an AED is to turn the Device ON.
- For a choking victim who becomes unresponsive: Look in the mouth before providing a rescue breath. If you see anything in the mouth removes it.
- First step of any rescue is to “Make sure the scene is Safe”
- Check for pulse no more than 10 seconds. If there is no pulse or you're not sure start CPR.
- CPR should be started within 10 seconds if there is no response, no breathing and no pulse.
- 2 person rescue one person does compressions the other does rescue breaths while maintaining open airway.

REFERENCES

1. History of the American Heart Association [Internet] [Updated 2011, Mar 7; cited 2012 Nov. 27] Available from: http://www.heart.org/HEARTORG/General/History-of-the-American-Heart-Association_UCM_308120_Article.jsp
2. American Heart Association Guidelines for Cardiopulmonary Resuscitation and

Emergency Cardiovascular Care (AHA) Part I Executive Summary, Circulation. 2010. P.640-656.

3. AHA Certification [Internet] [cited 2012 Nov. 27] Available from: <http://www.aha.org/certificenter/index.shtml>
4. Cooper JA, Cooper JD, Cooper JM .Cardiopulmonary resuscitation: history, current practice, and future direction. Circulation 2016; 14(15):239-249.
5. Lynch B, Einspruch EL, Nichol G, Aufderheide TP. Assessment of BLS skills: optimizing use of instructor and manikin measures. Resuscitation 2008; 76(2):233-243.
6. Weaver FJ, Ramirez AG, Dorfman SB, Raizner AE. Trainees' retention of cardiopulmonary resuscitation. How quickly they forget. JAMA 1979;241(9):901-903.
7. Abella BS, Alvarado JP, Myklebust H, Edelson DP, Barry A, O'Hearn N, VandenHoek TL, Becker LB. Quality of cardiopulmonary resuscitation during in-hospital cardiac arrest. JAMA 2005; 293:3305-310.
8. Jones A & Lee RYW. Rescuer's position & energy composition, spinal kinetics, & effectiveness of simulated cardiac compression. American Journal of Critical Care 2008; 17:417-427
9. Arshid M, Lo TY, Reynolds F. Quality of cardio-pulmonary resuscitation (CPR) during paediatric resuscitation training: time to stop the blind leading the blind. Resuscitation 2009, 80(5): 558-60
10. Na JU, Sim MS, Jo JJ, Song HG, Song KJ. Basic life support skill retention of medical interns and the effect of clinical experience of cardiopulmonary resuscitation. Emergency Medicine Jr 2012 Oct;29(10):833-7