

Part 8. Cardiopulmonary resuscitation education: 2015 Korean Guidelines for Cardiopulmonary Resuscitation

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Cardiac arrest is a major social and public healthcare issue. According to the 2015 statistics of the Korea Centers for Disease Control and Prevention, 45.1 persons per 100,000 population had a cardiac arrest and the rate of resuscitation for cardiac arrest is 4.8%, which is low in comparison with the economic scale of the country.¹ Moreover, the mean prevalence of patients discharged with cerebral performance categories 1 or 2, which indicate good neurological prognosis for patients who had cardiac arrest, was only 2.3%.² This is also lower than the 9.6% of the overall survival rate to hospital discharge reported in a CARES (Cardiac Arrest Registry to Enhance Survival) research that covered the entire United States of America from 2005 to 2010 and the 8.9% reported for Osaka, Japan, from 2007 to 2009.^{3,4} In addition, resuscitation rates differ by five- to six-fold at the maximum between regions, thus requiring multilateral considerations. In order to successfully apply the newly introduced 2015 cardiopulmonary resuscitation (CPR) guidelines to the society, a well-planned integrated application strategy is required, along with an educational strategy as a core factor.

KEY RECOMMENDATION IN CPR EDUCATION

1. Setting the goal of education

The objective of CPR education should be focused on ensuring that students obtain knowledge and skill in CPR, which can be immediately applied to actual cardiac arrest patients, and to maintain these knowledge and skill for a considerable amount of time. Every educational step should be geared toward helping students effectively achieve this objective.

2. Practice while watching method

In order to minimize the side effects due to alterations of the obtained education according to the performance and skill level of different CPR instructors, video or computer-based (self) learning programs are recommended as media thereby students can obtain knowledge and skill in CPR, with little or no intervention at all by the instructor.^{5,6} Especially in terms of learning the basic

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CPR, including directions for automated external defibrillator, practicing while watching is essential.

3. Skill-learning centralized education

Delivering the knowledge is necessary. However, most of the time, sessions should be allocated and conducted to help students to enable them to repeatedly practice and eventually acquire CPR skills. The objective is to enable the students to learn to effectively perform CPR within a given time during the education without additional out-of-class practice. Unnecessary lectures should be minimized.

4. Re-education cycle

Both the general public and medical personnel who do not often perform CPR easily forget their knowledge and skill in CPR after 3 to 6 months from completing the basic and expert resuscitation courses.^{5,6} In order to maintain their knowledge and performance of the CPR, targets in need of assistance are identified during the education to be introduced with re-educations or re-evaluations via convenient means such as online self-learning program or video sessions, at the longest term of 6-month cycle. Accumulating evidence shows that the existing 2-year cycle for license renewal in basic and expert resuscitation is not adequate. However, this re-education cycle is yet to be optimized because of insufficient basis.

5. Use of a measurable skill evaluation tool

It is recommended that the degrees of depth, frequency, and full relaxation in chest compressions during practice and evaluation in CPR education should be numerically measured in order to monitor the skill CPR level while providing feedbacks by utilizing a prompt or a measuring device. In case a device for feedback is not available, auditory guidance (metronome or music) can be used.^{7,8}

6. Reinforced education for non-technical skills

Considering actual CPR situations, wherein more than two rescuers rather than a single rescuer perform the resuscitation in absolute majority, non-technical skills greatly affect the result of the CPR, such as teamwork between the members of the CPR team, leadership for tuning up the activities within the team, and patient turnover between team members, must be included in the education.^{9,10}

7. Debriefing and seminar-type delivery

Debriefings, inquiries, and discussions at the end of each step or the entire CPR education are strongly recommended, as summary

of the education can greatly improve the CPR performance of an individual or team.¹¹

DEVISING AN EFFECTIVE EDUCATIONAL METHOD

1. Using realistic dummy

As CPR cannot be applied to a real person during skill practice, dummies are used. The currently used dummies are very similar in function to real patients owing to the rapid advancement in scientific technology. A basic dummy is enough for the purpose of delivering and practicing the basic knowledge and skill in CPR. However, when education is aimed at training for expert-level CPR through diversified scenarios, more-realistic dummies are recommended.¹² As a result, the purpose, target, costs, and benefits of education should be equally considered to determine the type of dummy to use.

2. Checklists/means to assist memorization

The use of checklists/means to assist memorization among students shows a positive effect on upskilling their CPR performance. To further utilize this strong point, both the student and the instructor must be well acquainted with using the checklists/means to assist memorization.

3. Feedback device

It is recommended that a device be used for giving direct feedbacks on speed, depth, relaxation, hand position during chest compression in CPR education.^{13,14} If such a feedback device is not available, a feedback device based on auditory guidance such as music or metronome is recommended in order to improve the speed of chest compression.¹⁵

4. Debriefing

Debriefing refers to a time of structuring the educational experience through discussions, debates, and feedbacks at the end of the simulation process. Many studies show that debriefing is the most important step in simulation-type educations.¹⁶ Considering this, debriefing must be essentially included in CPR education and recommended after the students undergo actual cases of CPR.

5. Roles of social media technology

Various social media technologies have been widely used recently. Interest is increasing on a method in which people who are able and willing to conduct CPR would be notified of a nearby out-of-hospital cardiac arrest patient by actively utilizing social media.^{17,18} It is suggested that for this method, scientific technology and so-

cial media should be used to notify people who are able and willing to conduct CPR when they are near a suspected out-of-hospital cardiac arrest patient.

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