Cardiopulmonary resuscitation: critical issues in expert and inexperienced trainees

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PURPOSE OF THE STUDY:

Sudden cardiac arrest is a leading cause of death in developed countries. Survival rates are higher when cardiopulmonary resuscitation (CPR) is well-performed, hence the importance of improving CPR abilities. We aimed to evaluate the acquisition of practical abilities in non-expert and expert trainees in order to identify the relative critical issues during training.

MATERIALS AND METHODS:

Thirty-seven CPR courses were held for 122 expert and 104 inexperienced student nurses (age: 19-34, median=21), randomly assigned to each course. After lessons, practical work was conducted on Resusci-Anne manikins with training defibrillators. Finally, instructors used the skill test form by Italian Resuscitation Council to evaluate practical abilities. The 16 items were grouped in 4 categories (A:Airways, B:Breathing, C:Circulation, D:Defibrillation) and summed in four categorical scores. R program was used for statistical analysis.

RESULTS:

A significant difference exists among the 4 categorical scores of skill test (Friedman test, $P < .001$). Post-hoc test according to Nemenyi for multiple joint samples identifies differences between skills. "C" skill differs highly significant ($P < .01$) to "A", "B" and "D" skills. Other contrasts are not significant. Furthermore, Friedman and Nemenyi tests identify a different behavior among nurses with or without previous CPR courses. "A" skill differs significantly to "B" ($P = .05$), "C" ($P < .001$) and "D" skills ($P = .05$) in the inexperienced group. "C" skill differs significantly to "A", "B" and "D" skills ($P = .05$) in the expert group.

CONCLUSIONS:

Overall, scores related to circulation support are lower than other skills. Therefore, during training, instructors should always pay attention to abilities referring to circulation. "A" skills are well acquired also by inexperienced students, for whom abilities related to breath, circulation and defibrillation are more difficult. The expert group reaches high scores in "A", "B" and "D" skills, confirming that "C" abilities should be enhanced also in trainees with previous CPR courses.