The effects of retraining on practical skills of cardiopulmonary resuscitation: a simple statistical method of evaluation

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PURPOSE OF THE STUDY:

Retraining improves practical abilities in cardiopulmonary resuscitation (CPR). The aim of this work is to evaluate and quantify the impact of retraining on CPR skills. If any effects were identified, new approaches could be developed to make retraining more effective as regards the practice of basic life support (BLS).

MATERIALS AND METHODS:

During 2016 and early 2017, BLS courses were held for 226 student nurses (age: 19-34, median=21) according to 2015 guidelines. For nearly half of them (122) it was a retraining course (RC); for the others it was the first course (FC). 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 a total and four categorical scores. R statistical program was used.

RESULTS:

Median skill test score was 15. Median scores were 14.5 and 16, respectively in FC and RC group. A significant difference exists between the two groups (Mann-Whitney-Wilcoxon test, $P < .001$). With respect to categories of skill test (A,B,C,D), all scores were higher in RC than in FC, except for "A" abilities. Retraining significantly enhanced "B" abilities ($P = .03$), as well as "C" ($P = .002$) and "D" skills ($P = .004$).

CONCLUSIONS:

CPR courses significantly increase practical abilities of BLS. Participants who attend a retraining get better results at skill test because they retain important abilities from previous courses. One course fails to fully compensate for the advantages of previous competencies. Relevant benefits are evident during all the sequence of BLS, except in the initial control of airways. Only the latter is easy enough to reach good results at FC and for whom RC does not add any further significant abilities.