

## Abstract

**Introduction:** Cardiopulmonary resuscitation (CPR) is the main treatment for cardiopulmonary arrest, one of the most common causes of death. Training courses must be evaluated to increase the CPR quality. This research aims to determine the effectiveness of CPR training on the performance of nurses based on the Kirkpatrick model.

**Methods:** A randomized controlled trial recruited 94 nurses of the CPR team selected with sequential non-probability sampling at Shahid Rahimi teaching hospital in Khorramabad in 2021-2022. They were divided into intervention (n=47) and control groups (n=47). Both groups had a 2-hour theory class, but only the intervention group had a 4-hour basic and advanced defibrillation and CPR practical class. Level 3 of the Kirkpatrick training evaluation model was used. Data was collected in a researcher-made knowledge and reaction questionnaire using Madden's performance observation checklist. Its validity and reliability of these questions were confirmed. The data were analyzed with Fisher's exact statistical tests, chi-squared independence, pair T-test and analysis of covariance model under the significance level of 0.05 by spss22 software.

**Results:** After the intervention, the average scores of the knowledge and skill level increased in the intervention group and decreased in the control group, but the scores of the reaction level did not change significantly, and no statistically significant difference was observed between the two groups in terms of the average change of the reaction level scores of the nursing staff

( $P=0.455$ ,  $f=0.563$ ). From the point of view of the average change in electroshock knowledge scores ( $P = 0.038$ ,  $f = 4.433$ ), basic and advanced cardiopulmonary resuscitation knowledge ( $P = 0.007$ ,  $f = 7.550$ ) and electroshock skills ( $p = 0.007$ ,  $f = 118.757$ ).  $P < 0.001$ ) and basic and advanced cardiopulmonary resuscitation of the nursing staff ( $P < 0.001$ ,  $f = 98.752$ ), a statistically significant difference was observed.

**Conclusion:** Holding theoretical and practical training courses together and evaluation based on Kirkpatrick's model increases satisfaction, knowledge and performance. Therefore, in order to make training more effective, it is better to conduct evaluations according to Kirkpatrick's model. It is also suggested to check the effectiveness of continuing education courses on the skills and knowledge of nursing staff in the real environment.

**Keywords:** Cardiopulmonary resuscitation, Education, Kirk Patrick evaluation model, Performance