Introduction:
Simulation teaching is a modern type of critical care (CC) education. The aim of this study was to assess the effect of simulation teaching of CC on a comparison of final examination in different model levels of cardiopulmonary resuscitation (CPR) after the first (CC1) and third, final CC3.

Methods:
The success rate of CPR was tested in prospective study (2017-2018) on two groups with a total of 66 students in CC1 and CC3 at the Faculty of Health Studies. Three semester of undergraduate nursing simulation education (lectures and training) used the Laerdal SimMan 3G. Quality of CPR was evaluated according to 4 parameters: compression depth, compression rate, chest release and time of correct frequency. We tested if CPR quality differed between the two groups. For the compression depth and compression rate parameters, first the conformity of variance was verified and then two-sample t-test. As the chest release and time of correct frequency are recorded as percentages, the Wilcoxon rank-sum test was conducted for these parameters. To ensure good resuscitation, all recorded parameters must be properly performed during resuscitation. Thus, pivot tables were used to generate statistics and test if the number of correctly performed resuscitation parameters for CC1 and CC3 differ.

Results:
The compression depth parameter was statistically significantly higher for the CC3 than for the CC1 (p=0.016). There were no differences in compression rate (p=0.210), chest release (p=0.514) and time of correct frequency (p=0.586). It was also tested how many of the parameters were performed correctly by students at CPR. The chi-square test shows the relative frequency of CPR success is higher for the CC3 group than for the CC1 group. At least 3 out of 4 parameters were correctly performed by 13% of CC1 students compared to 28% of CC3 students.

Conclusion:
The study showed a significant improvement of CPR in the final CC3 and supported the three semester simulation education.