

## Title:

The effects of an e-learning educational programme on cardiopulmonary resuscitation skills, knowledge and self-efficacy for nursing assistants in the nursing homes in Hong Kong during COVID-19 pandemic: A pilot study.

## Aims:

To examine the preliminary effect of an e-learning educational programme on cardiopulmonary skills, knowledge and self-efficacy for nursing assistants in the nursing homes during COVID-19 pandemic.

## Methods:

A prospective pilot experimental study was carried out with two CPR educational programmes including self-instruction e-learning or conventional (instructor-led training) approach. Subjects were invited to participate for the study if they were working as nursing assistants in the nursing homes and not attending formal CPR training within 3 years. The participants were cluster randomised to 30-minute educational intervention either self-instruction e-learning training or conventional instructor-led training. In the e-learning group, the participant received a self-instruction kit containing self-instruction video and an inflatable self-practice manikin. After the self-learning class, the participants could access the teaching video unlimited via internet and use the inflatable self-practice manikin for practice in either nursing homes or their residential homes. In the instructor-led group, the instructor delivered face-to-face lecture with skill demonstration and practice under supervision while lecture notes was provided after the class. All training programme are adopted AHA BLS guideline. Measures comprised of CPR performance score by real-time training software (Laerdal QCPR system) (primary outcome), CPR skill checklist, CPR knowledge test and general self-efficacy scale (GSES) were collected at baseline (T1), immediately after intervention (T2) and 1 month after intervention (T3).

## Results:

Eighty participants (40 e-Learning vs 40 instructor-led) completed the study with only 2 drop out at control and intervention arm. Significant improvement for all measured scores was found in both study groups at T2. At T3, the intervention group performed better in QCPR score ( $M=52.43$ ,  $SD=16.23$  vs  $M=24.67$ ,  $SD=16.82$ ,  $p<0.05$ ), higher CPR skill checklist score ( $M=8.65$ ,  $SD=0.94$  vs  $M=6.82$ ,  $SD=1.83$ ,  $p<0.05$ ), CPR knowledge score ( $M=8.17$ ,  $SD=0.80$  vs  $M=6.15$ ,  $SD=1.20$ ,  $p<0.05$ ) and GSES score ( $M=33.75$ ,  $SD=3.78$  vs  $M=29.85$ ,  $SD=4.27$ ,  $p<0.05$ ). It showed significant improvement in terms of CPR skill, knowledge and general self-efficacy.

## Conclusion:

Self-instruction e-learning educational programme on cardiopulmonary resuscitation was a feasible and effective teaching and learning method for CPR training for nursing assistants in

the nursing homes in Hong Kong. It may be a good approach for continuous training programme in nursing homes especially in Covid-19 period.

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