

#### Title:

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

#### Aims:

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

#### Methods:

In a single-blinded, parallel-group, randomized controlled trial, eighty nursing assistants were randomized to either the intervention group receiving one-session self-directed e-learning programme on CPR or the control group receiving one-session instructor-led CPR training program. The intervention group would further receive a self-learning kit containing demonstrative video and an inflatable self-practice manikin to practice after the training while the control group would only be provided with the lecture notes after the training. All the training materials followed the AHA BLS guideline. Various outcomes including CPR performance score (measured by real-time training software Laerdal QCPR system, primary outcome), CPR skill adherence score, CPR knowledge and general self-efficacy scale (GSES) were collected and compared at baseline (T1), immediately after intervention (T2) and 1 month after intervention (T3).

#### Results:

Intervention feasibility was established with a high completion rate of 97.56%. The result showed no significant difference for all measured scores in both study groups at T2. Over 100% of participants in the intervention group conducted their self-practice using the toolkits after the training. The intervention groups demonstrated significant improvement in QCPR score ( $p < 0.01$ ); CPR skill score ( $p < 0.01$ ); CPR knowledge score ( $p < 0.01$ ) and GSES ( $p < 0.01$ ) at the post-test (T3) compared with the control.

#### Conclusion:

The findings supported the feasibility and preliminary effects of using self-directed e-learning approach for CPR training among nursing assistants in nursing homes during the COVID-19 pandemic. A future study with a larger and more diverse sample is proposed to confirm its longer-term effects.

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