

Abstract:

Aim: To develop and test a mobile phone application (app) for graduate nurses on the use and care of central venous catheters.

Design: A randomized controlled trial was conducted at a teaching hospital in the central east coast of Taiwan.

Methods: Recruitment occurred from 1 August 2019 -31 October 2019. All graduates (N = 90) attending a 2-week induction program attended a lecture and completed a 10-item questionnaire on central venous catheter assessment and care at the end of Week 1 (Time 1). Volunteers were then randomly allocated to receive a link to the learning app on their mobile phone (n = 39 Group A) or control condition (N = 40 Group B). One week later, all graduates completed the knowledge assessment (Time 2) and a simulated clinical assessment with a mannequin. Skills were assessed using an 11-item, direct observation of procedural skills form. Only data from consenting participants were analysed.

Results: Compared with controls, nurses receiving the intervention reported significantly better knowledge ($t = -7.98, p < .001, CI = 20.9\sim34.8$) and skill scores ($t = 2.83, p = .006, CI = 1.14\sim6.61$). More frequent use of the mobile phone app was associated with higher knowledge ($r = 0.39, p = .02, CI = 0.11\sim0.99$) and skills ($r = 0.42, p = .008, CI = 0.17\sim1.03$).

Conclusion: Mobile app instruction for graduate nurses on central venous catheter care increased specific knowledge and skills compared with conventional methods of instruction.

Impact statement: Implementation of mobile phone application technology can be considered a feasible means to proactively provide training and education. Mobile phone apps could be developed for a range of clinical procedures and various settings. Future studies with a larger sample and a longitudinal follow-up are warranted to confirm results.

Reference:

Huang, XL, Tsao, Y, Chung, H-C, Creedy, DK. Effects of a mobile phone application for graduate nurses to improve central venous catheter care: A randomized controlled trial. *J Adv Nurs.* 2021; 00: 1- 11. <https://doi.org/10.1111/jan.14735>