Service Priorities and Programmes

Electronic Presentations

Convention ID: 1111
Submitting author: Ms Oi Ying Sarita Chan
Post title: Advanced Practice Nurse, PMH, KWC

Effectiveness of Simulation Training in Performing Subcutaneous Insulin Injection: A Local Pilot Nursing Practice

Chan OYS(1), Tang MKC(1), Wong WKV(1), Wong A(2), Shiu WH(1), Kwok KP(1), Ko HY(1), Yu LME(3)
(1)Department of Medicine and Geriatrics, (2)Central Nursing Division, (3)Clinical Research Centre, Princess Margaret Hospital

Keywords:
Simulation Training
Insulin Injection

Introduction

It is estimated that nurses perform over 100 000 insulin injections yearly in Princess Margaret Hospital (PMH), however, nurses might be unaware of the importance of correct injection technique. Evidences demonstrated that incorrect injection technique & misuse of injection devices may lead to skin lesion, variability of blood glucose & needle stick injury. Effective training should be provided to nurses who administer insulin in daily practice to ensure safe practice and improve clinical outcomes.

Objectives

To compare traditional lecture-based teaching with add-on simulation training after the lecture on theoretical knowledge and injection skills improvement in performing insulin injection among nurses.

Methodology

A randomized controlled trial with pre-post testing on nurses receiving subcutaneous insulin injection training was conducted in PMH from August 2016 to March 2017. Participants were randomly allocated to control group with traditional lecture-based training only or simulation group with add-on scenario-based simulation training All participants received baseline assessment and attended the lecture with video demonstration on insulin injection with immediate post knowledge assessment, while add-on simulation group further received scenario-based simulation training. Eight-week after lecture, participants of both groups underwent repeated assessment on theoretical knowledge and injection skills.

Result

Sixty qualified nurses completed the study. Both groups demonstrated significant theoretical knowledge gain immediately and 8 weeks after the lecture (ps<0.001). The mean knowledge test scores in pre-lecture, immediately and 8-week after lecture were 6.172.36, 10.831.12 and 9.331.54 in add-on simulation group, and 5.971.85, 10.971.03 and 8.631.83 in control group respectively. There was no significant

difference observed across the training modality.
Significant improvements on injection skills in insulin syringe and pen were observed in both groups (ps<0.001), with mean pre- and post-training test score using insulin syringe of 13.22.31 and 17.431.59 in add-on simulation group and 12.51.87 and 15.571.99 in control group; and that using insulin pen of 10.272.83 and 15.331.58 in simulation group and 9.832.36 and 12.32.2 in control group, respectively. However, add-on simulation group exhibited significantly higher post-test scores than control group in terms of overall injection skills, achievement of insulin at right dose and achievement of insulin at right place by both insulin syringe and pen (ps<0.01).
The results support that add-on simulation is more effective in training nurses on insulin administration.