Preparedness of pre-registration nursing students for blood pressure measurement during clinical practice using human patient simulators

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Aims: The aims of the study are:

1. to investigate the effectiveness of specific blood pressure measurement training sessions for pre-registration nursing students, using human patient simulators in the development of measurement accuracy for clinical practice.

2. to evaluate nursing students confidence levels in blood pressure measurement performance before and during clinical practice.

Background:
Traditionally, nursing students obtain clinical skill acquisition through theory and practice before attending clinical practice. This is undertaken in an attempt to develop beginning level competence in generic clinical skills before students are exposed to patients in the clinical setting.

Blood pressure measurement is a frequent, essential clinical skill that nursing students often have difficulty performing, relating to deficits in knowledge and correct measurement techniques (Torrance & Serginson, 1996; González-López et al., 2009).

Increasingly, medium to high-fidelity mannequins are being used in nursing education to replicate patient’s physiological responses in a safe learning environment (Jeffries, 2005; Alinier et al., 2006; Lasater, 2007; Cant & Cooper, 2010). This study provides students with tuition and practice in the
measurement of blood pressure, using human patient simulators to replicate the variability of blood pressure measurements in patients that students will encounter in clinical practice. The effectiveness of these sessions will be measured by assessing student’s accuracy, confidence and technical ability in the measurement of blood pressure before and during clinical practice.

Method:

Phase 1: Students in the first semester of their pre-registration nursing program (approximately 200 students) will be asked to participate in the study. All students will undertake 4 hours of lectures and tutorials on the theory of blood pressure measurement and 2 hours of the practical aspects of blood pressure measurement in the clinical simulation laboratories.

Phase 2: Students will be randomly allocated into groups and one half of the cohort will receive extra blood pressure training sessions (2 x 1 hour) on the assessment and measurement of abnormal blood pressure. These sessions will be conducted using human patient simulators (Nursing Anne VitalSimTM Capable Manikin). The sessions will be conducted mid semester. The other half of the cohort will receive no further formal tuition.

Phase 3: At the end of semester, all students enrolled in the study, will be tested for the accuracy of blood pressure measurement on human subjects. This will be quantified by clinical educators using double-headed stethoscopes. Participants will also complete a survey to determine their understanding of the technical aspects of blood pressure measurement, their confidence level and efficacy of
teaching methods.

Phase 4: All pre-registration nursing students enrolled in the study will be tested again for accuracy of blood pressure measurement. The participants will again complete a survey exploring their understanding of the technical aspects of blood pressure measurement, their confidence level and efficacy of teaching methods.

**Results:** The study will be completed by June 2011 and the results from the study will be presented.

**Conclusions:** We will report our findings of the study.

**References:**