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Research article

Identifying barriers to early mobilisation among mechanically ventilated patients in a trauma intensive care unit

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ABSTRACT

Mechanically ventilated patients can be at risk for functional decline (Cameron et al., 2015). Early mobilisation of mechanically ventilated patients can improve outcomes after critical illness to prevent this decline. Although registered nurses understand the importance of early mobilisation there are nurses who are unwilling to mobilise patients.

Aim: The aim of this study is to examine whether nurses' attitudes and beliefs are barriers for early mobilisation and evaluate whether an education intervention can improve early mobilisation.

Method: Pre-test, post-test intervention with registered nurses and charge nurses in a 22 bed trauma intensive care setting.

Procedure: Pre-test, post-test survey assessed perceived barriers in knowledge, attitudes, and behaviours followed by targeted education.

Results: Dependent Sample T-test revealed a statistically significant increase in post-test responses for the subscales knowledge, attitudes, and behaviours with early mobilisation. This over-all increase in post-test results support that understanding barriers can improve patient outcomes.

Conclusion: Use of structured surveys to identify barriers for early mobilisation among nursing can assist in providing targeted education that address nurse's perception. The education intervention appeared to have a positive impact on attitudes but it is unknown if the difference was sustained over time or affected participants practice or patient outcomes.

Implications for Clinical Practice

- Early mobilisation in mechanically ventilated patients has been shown to be both achievable and safe. Despite evidence to support early mobilisation there is difficulty including this into practice in critical care settings.
- The education intervention appeared to have a positive impact on attitudes, but it is unknown if the difference was sustained over time or effected the participants practice or patient outcomes.

Introduction

Critically ill patients who are hospitalised can experience a decrease in mobility placing them at a greater risk for functional decline (Bailey et al., 2009; Jolley et al., 2014; Li et al., 2013; Resnick et al., 2015). This lack of mobility can lead to decreased muscle strength, increased time of mechanical ventilation (MV), and increased length of hospitalisation (Roberts et al., 2014). Mobilisation can be defined as a "physical activity sufficient to elicit acute physiological effects that enhance ventilation, central and peripheral perfusion, muscle metabolism, alertness and are counter measures for venous stasis and deep vein thrombosis" (Cameron et al., 2015, p. 664). Early mobilisation (EM) can be defined as "physical activity within the first two to five days of a critical illness or injury" (Cameron et al., 2015, p. 664). The Institute for Healthcare Improvement (IHI), (2012) identified physical deconditioning as a

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risk factor for hospitalised adults and developed a web based course called "Mobility in the Intensive Care Unit" that presented both the science and strategies for implementing a mobility program for an intensive care setting (IHI, 2012). The European Respiratory Society and European Society of Intensive Care Medicine Task Force on Physiotherapy for Critically Ill Patients conducted a literature review on the effectiveness of physiotherapy for acute and chronic critically ill adult patients (Gosselink et al., 2008). Recommendations included 1) standardising pathways for clinical decision making and education, 2) definition of a professional profile of physiotherapy and 3) increased awareness and benefits of prevention and treatment of immobility and deconditioning for critically ill adult patients" (Gosselink et al., 2008, p.1188). The British Association of Critical Care Nurses (BACCN) recommends physiotherapy as a consistent therapy for patients to provide physical activity for early mobilisation to prevent critical care acquired weakness (Schweickert et al., 2009; Schweickert et al., 2009; Bailey et al., 2007).

Background

Studies have been conducted to understand knowledge and perceived barriers towards EM in critically ill patients among healthcare providers (Eakin et al., 2015; Winkelman and Peereboom, 2010; Jolley et al., 2014; Garzon-Serrano et al., 2011; Hoyer et al., 2015). Jolley et al. (2014) found the majority of nurses, physical therapists, and physicians understood the benefits of EM and reported acceptance of EM for patients who were MV. Identified barriers included inadequate staffing and insufficient nursing time. Eakin et al. (2015) Identified perceived barriers reported by healthcare participants included increased staff workload and safety concerns for both the patient and the healthcare provider. Components identified for a successful EM program included a multidisciplinary team approach, opinion leaders, individual discipline champions, and adequate rehabilitation providers and equipment (Eakin et al., 2015). Reasons for not mobilising patients by nurses included concerns for patient safety with falls or dislodging tubes or lines as reasons for not implementing EM (Winkelman and Peereboom, 2010). Nurse barriers included lack of training, lack of comfort, and not having enough time to mobilise patients. The highest perceived barrier reported by nurses and rehabilitation therapists was "more work for the nurses" (Hoyer et al., 2015).

Summary

Review of the literature identified that EM of MV patients is safe and can improve muscle strength, improve or maintain functional status, reduce length of MV, and intensive care and hospital length of stay (Jolley et al., 2014; Li et al., 2013; Resnick et al., 2015; Cameron et al., 2015). Even with literature to support this intervention, EM does not occur in patients who are intubated and ventilated (Winkelman and Peereboom, 2010; Eakin et al., 2015; Jolley et al., 2014). Identified perceived barriers among critical care nurses included an established ICU culture where EM for mechanically ventilated patients is not practiced, increased workload (time management), safety concerns for the patient and healthcare participant's, and lack of equipment (Hoyer et al., 2015; Garzon-Serrano et al., 2011; Jolley et al., 2014; Winkelman and Peereboom, 2010, Eikin et al., 2015).

Methods

Aim

The aim of this study is to examine whether nurses' attitudes and beliefs are barriers for EM and evaluate whether an education intervention can improve EM.

Design

A pre-test/post-test intervention was chosen to measure nurses' attitudes and beliefs for EM of MV patients to identify barriers to improve EM. The education intervention comprised of targeted education that addressed concerns from the pre-test results and education on the The Mobilisation of Ventilated Patients Early (M.O.V.E.) protocol. The M.O.V.E. protocol provides safe EM guidelines for MV patients through assessing patients to determine the appropriate mobility stage utilizing nursing, respiratory/physical therapy (physiotherapy), and occupational therapy assessments followed by the exercise intervention. The education was delivered by the trauma intensive care unit (TICU) co-investigators for all Registered Nurses (RNs) and charge nurses (CNs) employed in the TICU through walking rounds for both shifts, nursing shift huddles and education poster boards stationed through-out the unit.

Setting

The setting was a 22 bed Trauma Intensive Care Unit at a 266 bed Level One Trauma Rural Hospital in Central Phoenix, Arizona. The 22-bed ICU specializes in trauma and neuroscience critical care. Patients admitted to the ICU are typically involved in a trauma and/or suffered from a neurological insult or injury. The unit is equipped to deliver care to patients involved in any type of trauma with the most prevalent mechanisms of injury for trauma patients being motor vehicle collisions and falls.

Participants and sample

Inclusion criteria included part time and full time RNs and CNs employed in the TICU who worked 12 h shifts, either 7 a.m.–7 p.m. or 7 p.m.–7 a.m., and who were willing to sign informed consent. Exclusion criteria included RNs and CNs who were not employed full or part time in the TICU. A total of 55 registered nurses (RN) and charge nurses (CN) were invited to participate in the study with 33 who met inclusion criteria and agreed. Of the study sample (31/33) (94%) were staff nurses and two of the 33 respondents (6%) were CNs with two declining to participate.

Instruments and measures

Nurse's perception of barriers to mobilising hospitalised patients were measured using a pre-test/post-test survey. The survey was developed by a multidisciplinary team of two physicians, three physical therapists, one occupational therapist, two administrators and four nurses (Hoyer et al., 2015). Permission to use the survey was obtained from the multidisciplinary team of authors who developed the survey (Hoyer et al., 2015). The survey was designed to assess provider barriers to early mobilisation. Three main categories included barriers related to knowledge (four items), barriers related to attitudes (nine items), and barriers that influence behaviour (13 items) for a total of 26 items in the survey (Hoyer et al., 2015). The knowledge subscale assessed provider training and education on mobilising patients. The attitudes subscale assessed providers' lack of agreement, lack of self-efficacy, lack of outcome expectancy and perceptions of other providers' attitudes. The behaviours subscale assessed factors and practice barriers that may prevent the nurse from mobilising a patient (Hoyer et al., 2015). The survey collected demographic characteristics, including professional discipline, age, years of practice, education, and shift worked. For all survey items, a 5-point Likert response scale was used with the following options; 1) strongly disagree, 2) disagree, 3) neutral, 4) agree, and 5) strongly agree (Hoyer et al., 2015). To create consistency among participants and minimise recall error, survey participants were instructed to answer

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