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Modelling end-of-life care practices: Factors associated with critical care nurse engagement in care provision

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Summary
Objective: To identify factors associated with critical care nurses' engagement in end-of-life care practices.
Methods: Multivariable regression modelling was undertaken on 392 responses to an online self-report survey of end-of-life care practices and factors influencing practice by Australian critical care nurses'. Univariate general linear models were built for six end-of-life care practice areas.
Results: Six statistically significant ($p < 0.001$) models were developed: Information sharing $F(3, 377) = 40.53$, adjusted R^2 23.8%; Environmental modification $F(5, 380) = 19.55$, adjusted R^2 19.4%; Emotional support $F(10, 366) = 12.10$, adjusted R^2 22.8%; Patient and family centred decision making $F(8, 362) = 17.61$ adjusted R^2 26.4%; Symptom management $F(8, 376) = 7.10$, adjusted R^2 11.3%; and Spiritual support $F(9, 367) = 14.66$, adjusted R^2 24.6%. Stronger agreement with values consistent with a palliative approach, and greater support for patient and family preferences were associated with higher levels of engagement in end-of-life care practices. Higher levels of preparedness and access to opportunities for knowledge acquisition were associated with engagement in the interpersonal practices of patient and family centred decision making and emotional support.
Conclusion: This study provides evidence for interventions to address factors associated with nurse engagement to increase participation in all end-of-life care practice areas.

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Implications for clinical practice

- Development of positive personal values towards end-of-life care among critical care nurses can contribute to quality care for patients at the end-of-life and their families.
- Targeted interventions to assist critical care nurses to identify and support patient and family preferences can contribute to increased participation in the end-of-life care practice areas identified in this study.
- Participation in professional development opportunities incorporating experiential learning strategies, as well as supported clinical experiences in the provision of end-of-life care, can equip critical care nurses with the knowledge, skills and ability to engage in interpersonal caring practices.

Introduction

The provision of end-of-life care (EOLC) comprises a significant component of work for critical care nurses and EOLC has been identified as a research priority area in an international delphi study (Blackwood et al., 2011). Despite the frequency with which critical care nurses provide end-of-life care, evidence indicates nurses are not adequately prepared to provide this care to patients and their families (Kirchhoff and Kowalkowski, 2010). To improve the care that patients and their families receive and to support nurses in the provision of this care, a better understanding of the factors associated with specific EOLC practices are required.

Nurses are in a privileged position of accompanying the patient and the patient's family during their final journey in life together and the value of participating in this phase of care has been identified in previous qualitative studies (Calvin et al., 2007; Fridh et al., 2009; Ranse et al., 2012; Vanderspank-Wright et al., 2011). The provision of EOLC presents an opportunity for critical care nurses to achieve a good death for the patient and a positive memorable experience of EOLC for the family. Qualitative research exploring these aspects of critical care nurses' experiences of EOLC have been reported (Efstathiou and Walker, 2014; Espinosa et al., 2010; Fridh et al., 2009; McMillen, 2008; Ranse et al., 2012; Vanderspank-Wright et al., 2011).

There are however, few studies that have specifically focused on the actual practice of critical care nurses during the provision of EOLC. Cross-sectional surveys of critical care nurses have been undertaken that have assessed agreement with a small number of select EOLC practices (Langley et al., 2014; Latour et al., 2009; Puntillo et al., 2001) and perceptions of select barriers to and facilitators of EOLC (Beckstrand et al., 2006; Beckstrand and Kirchhoff, 2005; Kinoshita and Miyashita, 2011; Kirchhoff and Beckstrand, 2000; Nelson et al., 2006). It is important to note that analysis of data from these surveys has generally been limited to descriptive statistics.

Whilst a number of studies have investigated either the EOLC practices or the barriers and facilitators of EOLC, the objective of this study is to identify key factors associated with critical care nurses' engagement in specific areas of EOLC practice. Knowledge gained from this study will provide evidence for targeted interventions to support nurse engagement and increase participation in all areas of EOLC practice.

Methods

This paper presents the findings of multivariable analysis of data obtained as a component of a larger mixed methods study into the EOLC practices of critical care nurses and the factors influencing these practices. The outcome and explanatory variables used in regression modelling were obtained through exploratory factor analysis (EFA) of critical care nurses' responses to an online survey. The development of the survey instrument and results of exploratory factor analysis have been reported elsewhere (Ranse et al., 2015; Ranse et al., 2016).

Setting, sample and procedure

The Australian College of Critical Care Nurses (ACCCN) provided an accessible subset of the target population in this study. During May 2011, all ACCCN members whom had agreed to be contacted for research purposes ($n = 1580$) were sent an email containing a link to the online survey. The survey remained open for a period of six weeks and potential participants were sent a reminder to participate during this period.

The survey comprised three sections. Section 1 collected demographic information. Section two consisted of 58 statements about factors influencing EOLC and the 15 item Death Anxiety Scale (DAS; Templer, 1970). Participants rated their agreement to each item in section two on a five-point Likert scale (strongly agree to strongly disagree). Section three comprised of 51 items and required participants to rate the frequency with which they engage in select practices during the provision of EOLC on a five-point rating scale (always, often, sometimes, rarely and never).

Data analysis

Multivariable regression modelling was undertaken for the primary purpose of identifying the explanatory variables that contribute to changes in the outcome variable. The univariate general linear model procedure in PASW software version 18 was used to build a model for six EOLC practice areas: information sharing, environmental modification, emotional support, patient and family centred decision making, symptom management and spiritual support. These six practice areas were identified through