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ORIGINAL ARTICLE

The effect of nonpharmacological training on delirium identification and intervention strategies of intensive care nurses

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KEYWORDS
Delirium;
Intensive care unit;
Nonpharmacological intervention;
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Abstract
Objective: This study aims to investigate the effect of nonpharmacological intervention training on delirium recognition and the intervention strategies of intensive care (ICU) nurses.
Method: This is a quasi-experimental study conducted using a pretest–posttest design. The study sample included a total of 95 patients staying in the medical ICU of a university hospital and 19 nurses working in these units. The data were collected using the Patient and Nurse Introduction, Confusion Assessment Method for the ICU, and Delirium Risk Factors, and Non-pharmacological Interventions in Delirium Prevention Forms.
Results: Delirium was identified in 26.5% and 20.9% of the patients in the pre- and posttraining phase, respectively. Patients with delirium had a longer duration of stay in the ICU, lower mean Glasgow Coma Scale score and a higher number of medications in daily treatment ($p < 0.05$). The risk of delirium increased 8.5-fold by physical restriction and 3.4-fold by the presence of hypo/hypernatremia. The delirium recognition rate of nurses increased from 7.7% to 33.3% in the post-training phase.
Conclusion: Our study results show that training can increase the efficiency of ICU nurses in the management of delirium.
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Implications for clinical practice

- Delirium is usually confused with depression and dementia and is a difficult syndrome to diagnose because of the presence of sedation and hypoactive delirium.
- Delirium negatively affects intensive care unit patients as regular cognitive evaluation is not performed and a formal assessment tool for delirium monitoring is not used.
- Intensive care unit nurses need training to improve their capabilities for recognition, prevention and management of delirium.
- Utilising the Non-pharmacological Interventions in Delirium Prevention Form can decrease delirium incidence in intensive care units.

Introduction

Delirium is an acute or subacute syndrome with a tendency to fluctuate during the day and is characterised by disturbances in consciousness, attention and perception (Truman and Ely, 2003). It is associated with an increased mortality rate (van den Boogaard et al., 2012; Hamdan-Mansour et al., 2010), frequent complications (van den Boogaard et al., 2012), prolonged length of stay in hospital and the intensive care unit (ICU) (Ely et al., 2001a), and increased care costs (Jackson and Khan, 2015).

The incidence of delirium in the ICU is reported to be between 45% and 87% (Jackson and Khan, 2015). The incidence of delirium is higher among patients receiving mechanical ventilation (Sharma et al., 2012; Tsuruta et al., 2010), and delirium is a prognostic indicator of 6-month mortality (van den Boogaard et al., 2012). Although the incidence of delirium is high in ICU, the level of delirium diagnosis and awareness is unsatisfactory (Panitchote et al., 2015; Rice et al., 2011; Hamdan-Mansour et al., 2010). Lack of a regular cognitive assessment in the ICU patients, the difficulty in establishing communication with patients receiving mechanical ventilation, the presence of hypoactive delirium and lack of a formal assessment tool to monitor delirium are reported to affect the recognition rate of delirium (Balas et al., 2016; Eastwood et al., 2012; Solberg et al., 2013). The confusion of hypoactive delirium with depression and dementia and the difficulties in assessing patients under sedation are serious obstacles to the recognition of delirium (Breitbart and Alici, 2008; Cole et al., 2012). Hyperactive delirium is usually associated with agitation and can be more easily recognised than the hypoactive type (Flagg et al., 2010; Pun and Ely, 2007). However, it poses a major problem in terms of ensuring the patient's safety and maintaining patient care (Meagher et al., 2011; Pun and Ely, 2007).

Interventional training programmes to improve the skills of diagnosing and managing delirium increase the efficiency of nurses and improve the patient outcomes (Mistarz et al., 2011; Gesin et al., 2012; Van de Steeg et al., 2014). In the prevention and management of delirium, it is of utmost importance to identify risk factors, evaluate the patient's environment, maintain basic nursing care activities and initially implement nonpharmacological interventions rather than pharmacological therapies in patients with delirium (Holly et al., 2014; Martin et al., 2010; Celis-Rodriguez et al., 2013; Balas et al., 2012; Reston and Schoelles, 2013). Studies have shown that nonpharmacological interventions decreased the incidence (Colombo et al., 2012; Wand et al., 2014; Barr et al., 2013), duration (Brycakowski et al., 2014; Engel et al., 2013; Zaal et al., 2013), and severity of delirium (Irwin et al., 2013; Milisen et al., 2001). In this study, we aimed to investigate the effect of nonpharmacological interventional training on delirium recognition and intervention strategies in ICU nurses.

Method

This is a quasi-experimental study that used a pretest–posttest design. The study was conducted in the medical ICU of a university hospital. The study population consisted of nurses working in and patients admitted to the ICU between December 1, 2012 and April 13, 2014 and between August 1 and November 30, 2014. The total number of nurses and patients in the study population was 23 and 135, respectively. The ICU principal nurse (2), nurses on maternity leave (1), and those who left the ICU due to a change of position (1) were not included in the analysis. Therefore, the number of nurses included in the study was 19. All nurses willingly participated in the study (Fig. 1).

Patients aged $\geq$18 years who were fluent in Turkish and who were hospitalised in the ICU for more than 48 h were included in the patient sample of the study, whereas patients with dementia, neurological dysfunction and associated aphasia and coma, and hearing loss that would affect communication were excluded. Among the 135 patients included in the study, 73 patients were evaluated in the pretraining phases and 62 patients were evaluated in the posttraining phases. Of these, 22 patients in the pretraining and 18 patients in the posttraining were excluded from the analysis for the reasons indicated above. Consequently, 51 patients in the pre-training phase and 44 patients in the posttraining phase were included in the study, making a total of 95 patients (Fig. 1).

Ethical approval

Ethical and scientific approval for the study was obtained from Sivas Cumhuriyet University Clinic Research Ethics Committee on June 12, 2012, with approval number as 2012-06/10. Each patient or his/her caregiver were informed about the study before the data collection. A written informed consent was obtained from each patient or his/her caregiver (for confused patients) and each nurse.

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