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Original article

Video education for critical care nurses to assess pain with a behavioural pain assessment tool: A descriptive comparative study

Annika Björn [a,b,*,1], Sanna-Mari Pudas-Tähkä [a], Sanna Salanterä [a,c], Anna Axelin [a]

[a] University of Turku, Department of Nursing Science, Turku FIN-20014, Finland
[b] Helsinki University Hospital, HUCH Perioperative, Intensive Care and Pain Medicine, Helsinki, Finland
[c] Turku University Hospital, Hospital District of South-West Finland, Finland

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ABSTRACT

Aim: To evaluate the impact of video education on critical care nurses' knowledge and skills in using a behavioural pain assessment tool for intensive care patients and to explore the nurses' experiences with video education.
Methods: Forty-eight nurses in one intensive care unit watched an educational video on the use of the Critical-Care Pain Observation Tool, then assessed pain in two patients with the tool and took a knowledge test. The researcher made parallel pain assessments. Interrater reliability of patients' pain assessment between nurses and the researcher was determined to examine nurses' skills in using the tool after education. Twenty nurses were interviewed about their experiences with the video education. Interviews were analysed with deductive thematic analysis.
Results: The knowledge test scores indicated that the nurses learned the principles of how to use the tool. The interrater reliability of pain assessments reached a moderate level of agreement during the painful procedure, with a weighted kappa coefficient value of 0.48, CL [0.37, 0.58]. The nurses perceived video education positively, but requested additional interaction.
Conclusions: Video education is useful in teaching the principles of using a pain assessment tool. Additional clinical training is required for nurses to reach adequate skills in using the tool.

Implications for Clinical Practice

- Adequate, standardised education is required for accurate pain assessment using the CPOT.
- Video education is a useful method to teach critical care nurses the principles of using a behavioural pain assessment tool, but further training including interaction and feedback is required for these nurses to develop adequate skills in using the tool.
- After video education on the use of a behavioural pain assessment tool, the assessment of skills in using the tool is important to ensure the tool is appropriately used.

Introduction

Pain is a common problem among patients in intensive care units (ICUs) (Barr et al., 2013; Puntillo et al., 2014). The incidence of moderate to severe pain at rest is over 50% among these patients (Chanques et al., 2007), and patients are recurrently exposed to procedures known to be painful (Puntillo et al., 2014). Recognition and assessment are the first steps in the appropriate treatment of pain (Abu-Saad Huijer et al., 2012). Therefore all patients should be systematically assessed for pain (Barr et al., 2013; Herr et al., 2011).

Patient's self-report of pain is considered the "gold standard" of pain assessment. Intensive care patients' ability to communicate is often compromised and a self-report difficult to obtain. Health care professionals are recommended to use a valid behavioural pain scale (Barr et al., 2013). Several behavioural pain scales for

* Corresponding author at: University of Turku, Department of Nursing Science, Turku, Finland.
E-mail address: annika.bjorn@hus.fi (A. Björn).
[1] Present address: HUCH Perioperative, Intensive Care and Pain Medicine, Critical Care Clinic, Helsinki University Hospital, P.O. Box 340, 00029 HUS, Finland.

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ICU patients have been developed (Pudas-Tähkä et al., 2009), but of these, the Behavioural Pain Scale (BPS) (Payen et al., 2001) and the Critical-Care Pain Observation Tool (CPOT) (Gélinas et al., 2006) are considered the most valid and reliable (Barr et al., 2013). These tools support decision-making in pain management (Gélinas, 2016; Wøien and Bjørk, 2013), and by implementing such tools, pain recognition and assessment can be improved (Arbour et al., 2011).

Critical care nurses (CCNs) play an important role in pain assessment, especially when patients are unable to communicate (Herr et al., 2011). Every CCN should be able to assess and manage pain based on evidence and existing guidelines (Abu-Saad Huijer et al., 2012). CCNs not only need knowledge of pain physiology and effective pain management but also require knowledge of reliable pain assessment tools (Abu-Saad Huijer et al., 2012) and of how to use them (Gélinas, 2011; Gélinas, 2016). Studies show deficiencies in CCNs' current knowledge, skills (Schreiber et al., 2014; Wang and Tsai, 2010) and attitudes (Lewis et al., 2015) regarding pain assessment. CCNs find pain assessment to be especially challenging when patients are sedated and are unable to self-report pain (Rose et al., 2011; Wøien and Bjørk, 2013). Even though behavioural pain scales exist, CCNs rarely use them (Payen et al., 2007; Rose et al., 2012).

To improve the systematic assessment of the pain of ICU patients, guidelines and education on pain assessment and the use of pain assessment tools are needed (Payen et al., 2007). Education increases CCNs' knowledge of pain care (Erkes et al., 2001; Lewis et al., 2015; McNamara et al., 2012), decreases their negative biases related to pain management (Lewis et al., 2015) and motivates CCNs to improve pain management (Brockopp et al., 2004). Importantly, education should motivate CCNs to understand and use pain assessment tools (Payen et al., 2007; Rose et al., 2012). Effective education is also the prerequisite for the reliable use of pain assessment tools. Albeit, quality control regarding users' skills, such as using interrater reliability calculations, is also needed. (Gélinas, 2011).

The challenge concerning education is to find effective methods of increasing CCNs' knowledge and decreasing their biases (Schreiber et al., 2014). Furthermore, even though nurses perceive education to be important, barriers to its realisation, such as time constraints, obligations of patient care (Govranos and Newton, 2014), financial constraints and a lack of leadership support (Santos, 2012), have to be acknowledged. Education must be easily available, accessible (Govranos and Newton, 2014) and suitable for the clinical context (Horbury et al., 2005). From a nurses' perspective, video education is considered a flexible (Kelly et al., 2009; O'Dowd Bell, 2012) and self-directed (Klingbeil et al., 2009) education method. Educational videos have been used to demonstrate patient behaviour in teaching nurses to use assessment tools (Lucas and Knobel, 2012; Riekerk et al., 2009). Education on CPOT use has also previously included video education (Gélinas et al., 2011). However, whether nurses are able to implement knowledge gained through video education into their assessment skills is not well known. This study aimed to evaluate the impact of video education on CCNs' knowledge and skills in using the CPOT and to explore CCNs' experiences with video education.

Methods

Aims and objectives

The aim of this study was to evaluate the impact of a video education method on CCNs' knowledge and skills in using a pain assessment tool for non-communicative ICU patients and to explore their experiences with this method.

The objectives were:

- to evaluate CCNs' knowledge of CPOT after video education.
- to examine CCNs' skills in using CPOT after video education by measuring agreement (interrater reliability) of pain assessment between the video-educated CCNs and an expert.
- to explore CCNs' experiences of video education as a learning method.

Design

A descriptive comparative study design using quantitative and qualitative research methods was used to measure the impact of video education on CCNs' knowledge and skills in assessing the pain of non-communicative ICU patients and to explore CCNs' experiences with video education. Deductive thematic analysis of the qualitative data enabled the context of the quantitative measurements to be understood (Schumacher et al., 2005).

Study setting and sample

The study was conducted in an ICU providing the highest level of care (III) (Valentin and Ferdinande, 2011). The patient population in the 16-bed ICU consisted of acute non-surgical as well as acute and elective surgical patients. Behavioural pain assessment tools were not used in the unit.

The total population of 122 CCNs working in the ICU were all invited to participate in the study and eventually 48 CCNs (39%) were recruited and agreed to participate. The CCNs were recruited by the researcher and the ward contact person through information sessions. Forty-two of the 48 who agreed to participate volunteered to be interviewed. In the end 20 CCNs were interviewed during 13 interview sessions, either individually (n = 6) or in pairs (n = 14), since interviews were conducted until saturation of the qualitative data was reached, i.e., when no new information emerged.

The CPOT and video education method

The CPOT was chosen for this study as it is a valid, reliable and clinically feasible tool (Barr et al., 2013). The CPOT was developed for assessing pain in critically ill adult patients unable to self-report pain. The CPOT includes four behavioural pain indicators: facial expression, body movements, compliance with ventilator (vocalisation for extubated patients) and muscle tension. Each indicator is scored on a scale from 0 to 2, with the total score varying from 0 to 8 (Gélinas et al., 2006). The CPOT is to be used when a patient is at rest to obtain a baseline value, during painful procedures, and before and after administering analgesics to assess the effectiveness of treatment (Gélinas, 2010). The CPOT has demonstrated moderate to high interrater reliability (Gélinas et al., 2006; Gélinas and Johnston, 2007; Marmo and Fowler, 2010), satisfactory sensitivity and specificity (Gélinas et al., 2009) and ability to discriminate between non-painful and painful procedures (Rijkenberg et al., 2015). Permission to use the CPOT was obtained from its developer, Dr Gélinas, and the Finnish translation of the tool was used (Pudas-Tähkä et al., 2013).

A 15-minute educational video on CPOT use was developed for the study. The researcher (AB) studied the use of the CPOT carefully with another researcher (SMPT) and watched the original CPOT education video to gain expertise in its use. A Finnish version of the video was important to ensure the best quality educational video suitable for the Finnish context. The script and structure of the video was based on the original education video made by the developers of the CPOT, who permitted translation and use of the video as an educational material. The video included an introduction explaining why pain assessment is important (2 minutes), a section introducing the CPOT (2.5 minutes), demonstration of its use with actors (4 minutes) and real patient

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