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Nurses' knowledge of the principles of acute pain assessment in critically ill adult patients who are able to self-report



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ABSTRACT

Introduction: Nurses play a critical role in managing and alleviating acute pain among critically ill adult patients (CIAP). The purpose of this study was to determine nurses' level of knowledge about principles of acute pain assessment in CIAP.

Methods: A descriptive cross-sectional study design and questionnaire survey were employed to collect data from 170 nurses caring for CIAP at Uganda's national hospital.

Results: The mean knowledge score of nurses was 71% indicating adequate knowledge levels. However, a large proportion of nurses was not knowledgeable about aspects related to pre-emptive analgesia when performing procedures for CIAP such as; airway suctioning (45.3%); invasive line placement (46.5%); and spontaneous breathing trials (63.5%). A large number of nurses did not know or believe that a patient can rate their pain accurately (43.5%). Nurses' knowledge about pain assessment principles was significantly associated with their understanding of the need to assess for pain and pre-emptive analgesia for physical procedures such as; patient repositioning (OR = 0.103, CI = 0.031–0.345); drain removal (OR = 0.088, CI = 0.025–0.314); and invasive line placement (OR = 0.039, CI = 0.011–0.140).

Conclusion: The nurses had adequate general knowledge about the principles of acute pain assessment in CIAP. However, some knowledge gaps exist about key concepts in pain assessment and these can curtail the efforts to ensure quality pain assessment and management in CIAP. The findings entrench the need for focused professional training and continuing professional education about best practices for pain assessment and management in CIAP.

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1. Introduction and background

Alleviating patients' suffering is a core ethical and legal obligation for all health care professionals (Brennan, Carr, & Cousins, 2007). However, discomfort due to moderate or severe levels of acute pain remains prevalent and affects between 40% and 77% of adult patients in critical care settings (Gelin, 2007; Li & Puntillo, 2006). Available evidence shows that critically ill adult patients (CIAP) suffer from pain during rest and routine care (Barr et al., 2013). The degree of suffering due to pain in CIAP is a challenge to the concerted efforts devoted to the advancement of knowledge and technology, development of valid and reliable pain assessment tools and practice guidelines (Polomano,

Rathmell, Krenzischek, & Dunwoody, 2008a). Therefore, the extent of global failure in pain control is disproportionate to the level of scientific advancement with the greatest discrepancy existing in the developing nations (Brennan et al., 2007).

Lack of adequate pain management is a common phenomenon among CIAP. Studies conducted overtime have shown that procedures commonly performed on CIAP such as repositioning, suctioning of the artificial airway, removal of drains, wound dressings, and insertion of invasive lines, are associated with intense pain (Gelin, 2007; Puntillo et al., 2004, 2014; Vazquez et al., 2013). Indeed, CIAP suffer unrelieved severe procedural pain regardless of the type of disease affecting them or their level of consciousness (Vazquez et al., 2013). And the presence of inadequately controlled pain before a procedure increases the likelihood of procedure related pain (Puntillo et al., 2014).

The psychological, physiological, social and economic effects that stem from unrelieved pain not only affect the CIAP, but also

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their families (Brennan et al., 2007; Dunwoody, Krenzischek, Pasero, Rathmell, & Polomano, 2008). Hence, the call for all aspects of health care systems especially in developing countries to illuminate the need to prioritize pain control. Realization of better pain relief is feasible even in resource limited settings, if health care providers and health care systems consistently apply proven strategies that address knowledge, cultural, attitudinal and practice gaps (Brennan et al., 2007). In situations of limited resources, it has been reported that strategies such as availability of guidelines and algorithms enhance informed decision making during pain assessment and management (Shannon & Bucknall, 2003; Twycross, 2013).

In an effort to ensure improved level of physical and psychological comfort among CIAP, the American College of Critical Care Medicine through its guidelines, recommends approaches such as assessment and monitoring of pain in CIAP using reliable and valid tools, use of both pharmacological and non-pharmacological approaches, and the practice of pre-emptive analgesia for known painful procedures (Barr et al., 2013). To achieve adequate procedural pain control, clinicians are required to assess for pain before the procedure, during, and after the procedures (Barr et al., 2013). In addition, clinicians are expected to elicit patient's input during pain assessment and management, because patients provide the most accurate rating of their experience given the subjective nature of pain (Dunwoody et al., 2008; Erstad et al., 2009). In the critical care settings, where it may not always be possible to have patients' input due communication barriers (altered neurological state and cognition), the clinicians are expected to presume presence of pain based on their knowledge of pain and associated factors (Erstad et al., 2009).

The concept of pre-emptive analgesia requires utilizing analgesic techniques in a timely manner before a painful stimulus and maintaining the effects during and after the procedure through active management (Polomano et al., 2008a). However, it has been reported that clinicians inconsistently apply the recommended practice guidelines and provide analgesia too early or do not administer analgesia during the procedure when the CIAP experiences the worst pain level (Vazquez et al., 2013). The inconsistencies and variations in practices related to pain assessment and management show that the related key principles are undermined (Erstad et al., 2009).

Reports of very limited post-procedural pain assessment and inadequate documentation even when patients can verbalize pain are also common in literature (Gelinias, Fortier, Viens, Fillion, & Puntillo, 2004). It has been reported that CIAP with medical diagnosis and those undergoing airway suctioning are less likely to receive analgesics during the procedures (Puntillo et al., 2002). This shows that practice guidelines may not guarantee better practices especially when they are not specific to the nurses' local practice settings (Shannon & Bucknall, 2003). Duignan and Dunn (2008, 2009) identified several contextual factors categorized as healthcare-related, clinician-related and patient-related, which preclude nurses' ability to adequately assess pain and contribute to pain control among CIAP. The factors include lack of time to assess and control pain, urgent nature of patients' physical needs, limited nurses' knowledge and low priority given to pain management by the health care system (Duignan & Dunn, 2008, 2009). The patient factors include the fear of the effects of analgesics such as tolerance and addiction, fear of redirecting clinicians' attention from the disease to pain, the belief that a good patient must tolerate pain, and use of alcohol and drugs which affect patients' communication and the quality of assessment. All these factors contribute to under assessment of pain, doctors' reluctance to prescribe analgesics, and unfavorable nurses' attitudes, beliefs and misconceptions about pain and its management (Duignan & Dunn, 2009).

Nurses play a pivotal role in managing patients' pain and the associated distress which affects the comfort of CIAP. The nurses' roles in pain management such as assessment, implementation of evidence-based management strategies, monitoring patients' response, documentation and educating of the patients and their families are key to successful pain control (Dunwoody et al., 2008; Shannon & Bucknall, 2003; Twycross, 2013). Quality pain assessment by nurses is a major attribute of effective pain management in CIAP because physicians' prescription and selection of other pain control strategies are reliant on findings from nurses' on-going holistic pain assessment (Erstad et al., 2009). Although knowledge may not necessarily translate to expected performance (Cope, Cuttbertson, & Stoddart, 2000) or correlate with nurses' practices in the critical care settings (Buckley & Andrews, 2011), quality assessment requires nurses to be knowledgeable about pain, its consequences, and the key principles embedded in the current best evidence (Polomano, Dunwoody, Krenzischek, & Rathmell, 2008b; Vallerand, Musto, & Polomano, 2011).

The multidisciplinary approach used to achieve adequate pain control in CIAP requires nurses to make informed decisions, collaborate with the health care team and advocate for patients (Shannon & Bucknall, 2003). Nurses cannot function effectively in the multidisciplinary health care team unless they are knowledgeable (Glynn & Ahern, 2000). Nurses' theoretical knowledge influences their ability to meet practice expectations (Khomeiran, Yekta, Kiger, & Ahmadi, 2006). Available studies show that a large number (50%) of nurses working in critical care settings such as emergency departments lack knowledge on key aspects related to pain assessment (Moceri & Drevdahl, 2014). In Uganda, no studies have been done to evaluate the nurses' knowledge regarding pain assessment or the curricula used to train nurses in regard to content related to pain assessment and management. Additionally, reports shows that in Uganda nurses' engagement in lifelong learning activities such as attending continuing educational activities is limited and curtailed by factors such as workload, lack of computer skills and access to resources (Muliira, Etyang, Muliira, & Kizza, 2012). Therefore in resource limited settings, nurses struggle to keep abreast with knowledge updates and only a few highly motivated and persistent individuals manage to gain or access the new knowledge (Khomeiran et al., 2006). Given the prevailing situation, an inquiry into the knowledge nurses have regarding acute pain assessment and management is justified especially in resource limited settings like Uganda.

1.1. Purpose of the study

The study was designed to explore the knowledge of nurses regarding the principles of pain assessment in CIAP. In this study, knowledge is defined as the facts and insights nurses have about recommended pain assessment practices among CIAP.

2. Methods

2.1. Study participants and setting

A descriptive cross-sectional design was used to collect data from nurses working in units which take care of CIAP at Mulago Hospital (MH). MH is Uganda's national referral and teaching hospital with a capacity of 1500 beds. The hospital employs an estimated total of 2057 health care professionals and the majority (42%) of these are nurses. The participants for this study were nurses working on clinical units which take care of CIAP and these were; the burns unit, intensive care unit (ICU), post-operative care unit, high dependency unit, neurology unit and emergency unit. The patients are admitted on the above units as emergency cases

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