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Critical care nurses' use of non-pharmacological pain management methods in Egypt

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ABSTRACT

Aim: To examine Critical Care Nurses' Practices of Non-pharmacological Pain Management Interventions in Egypt.

Methods: Descriptive exploratory design was utilized in the current study with a convenience sample of 60 critical care nurses working in three intensive care units at Al Manial university Hospital, Egypt. The questionnaires included; nurses' demographic data, non-pharmacological pain management checklist utilizing likert scale, and perceived barriers to the practice of non-pharmacological pain management interventions. Comparisons were made between the nurses' responses about practices of non-pharmacological pain management and selected demographic variables.

Results: The non-pharmacological methods used by few nurses were putting the patient in comfortable position, communication with the patients and their families and using comfort devices. Moreover, nurses' education, work experience and the work area showed no statistically significant association with the few of non-pharmacological pain relief interventions they used. Finally, the barriers that hindered non-pharmacological pain practices from being used by nurses were lack of nurses' knowledge, lack of time, nurses' workload and patients' instability.

Conclusion: Most of the critical care nurses didn't apply non-pharmacological pain interventions practices with their patients in pain. The approaches used by a few nurses were changing position and the use of some comfort devices. Moreover, no significant correlations were found between nurse' application of non-pharmacological pain measures and either educational level and work area.

Recommendations: Barriers need to be explored and continuing education is needed to eliminate some of these perceived barriers. Moreover, theoretical and practical non-pharmacological pain management interventions should be incorporated in nursing curricula.

1. Introduction

Pain is one of the principal complaints of many patients seen in critical care and emergency units. Although appropriate relief from pain is a human right (Sallum, Garcia, & Sanches, 2012; Souza, da Costa, Barbosa, and Pereira, 2013), nurses' knowledge and performance of pain assessment, relief, and monitoring at these units is still rare. The paucity of studies hinders the spread of knowledge concerning the significance of pain assessment, feasible management control techniques, and overcoming the perceived hindrances to the practice of evidence-based nursing (Calil & Pimenta, 2010).

Furthermore, inappropriate acute pain management may potentiate catecholamine release, which causes rapid pulse, elevated blood

pressure, and increased myocardial oxygen consumption demands, causing myocardial ischemia. These changes may compromise the clinical picture of patients in emergency situations (Dunwoody, Krenzischek, Pasero, Rathmell, & Polomano, 2008). Although there is more evidence about the reality of pain in the ICU, pain remains undertreated for many patients (Topolovec-Vranic et al., 2010; Van Gulik et al., 2010). Therefore, there is a need to search for other strategies to maximize patients' comfort and induce pain relief in critical care settings (Lavery, 2004).

In this issue, non-pharmacological approaches are interesting strategies to explore. Non-pharmacological interventions are therapies and measures that do not involve taking medication and are used in common practice by nurses—e.g., breathing exercises, massage,

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positioning, and music therapy (Boldt, Eriks-Hoogland, Brinkhof, Bie, and von Elm, 2011), as well as diet, exercise, relaxation techniques, and prayer (Tracy et al., 2005). Moreover, using a calming voice, providing information, and deep breathing were the most frequently used practices during painful procedures (Faigles et al., 2013).

Non-pharmacological pain intervention measures used by critical care nurses aim to treat the affective, cognitive, behavioural and sociocultural dimensions of the pain (Yavuz, 2006). They are likely to complement pharmacological interventions and may provide alternative therapeutic measures to treat symptoms of diseases, including pain (Bausewein, Booth, Gysels, and Higginson, 2009). These measures increase the tolerance of experienced pain, decrease physical stress, reduce the feeling of weakness, and reduce the use of analgesic drugs (Yildirim, 2006).

Although non-pharmacological measures such as deep breathing, massage, music therapy, and positioning were noted to be used by critical care nurses for the management of pain in the ICU (Faigles et al., 2013; Tracy et al., 2005), scarce studies have attended to their effectiveness at pain reduction in critically ill patients (Erstad et al., 2009). "One non-pharmacological pain relief intervention is music therapy. It decreases pain intensity and the frequency of analgesic drug administration in postoperative ICU patients during mobilization and following percutaneous coronary interventions (Chan, 2007). Moreover, two previous studies investigated the effect of listening to music on pain and recorded remarkable results (Cooke, Chaboyerw, Foster, Harris, and Teakle, 2010; Iblher et al., 2011).

Another non-pharmacological nursing intervention for pain management tested in the ICU is ice therapy. The most common implementation is ice pack applications, which have been mentioned by many authors to relieve post-operative pain (Algaflly & George, 2007), which has been explained by the fact that application of local ice packs blocks nerve conduction velocity and increases pain tolerance. Recently, Khalil (2017) investigated the effect of applying local ice packs for 10 min on reducing arterial puncture pain and recorded remarkable decrease in pain scores among the experimental group.

As well, deep breathing has also produced remarkable relief of pain when used in combination with analgesics following chest tube removal compared with those who only received an analgesic (Friesner, Miles Curry, and Moddeman, 2006). Another non-pharmacological pain management intervention is applying body massage. It relieves the mind and muscles and increases the pain threshold (Karagz, 2006). Because non-pharmacological practices are useful for pain relief in the ICU, and because they are cheap, feasible, and safe, many nurses can apply them with ease (Erstad et al., 2009). To this day, few non-pharmacological approaches for pain relief have been investigated in an ICU context (Lindquist, Tracy, Savik, and Watanuki, 2005; Tracy et al., 2005).

The utilization of such complementary care approaches relies on critical care nurses' knowledge, experience, and training (Tagharrobi, Kermanshahi & Mohammadi, 2016). Additionally, Lindberg and Engström (2011) found that critical care nurses believe that pain is mainly handled with drug therapy, but when this type of treatment is not adequate, they try various non-pharmacological approaches. Indeed, a large number of nurses were found to be eager to learn more about less traditional interventions for pain control (Tracy et al., 2005).

Moreover, the nurse has a responsibility to find out the experience of pain and initiate pain relief measures that help patients learn to cope with it. However, guidelines for use of these measures are commonly inadequate or absent. Nurses can educate patients and their families to utilize non-pharmacological measures to relieve pain, such as relaxation, massage, and heat/cold applications (Horgas & Yoon, 2008; Williams, Davies, & Griffiths, 2009). As a result, the dosage of analgesic drugs needed can be reduced, decreasing the side-effects of the treatment and reducing healthcare costs by reducing doctor visits and reliance on costly medications. Therefore, the aim of this study was to describe current critical care nurses' use of non-pharmacological pain

management interventions and perceived barriers to the use of such approaches.

2. Aim of the study

The aim of this study was to examine critical care nurses' use of non-pharmacological pain interventions methods and perceived barriers to the use of non-pharmacological pain Interventions methods as reported by critical care nurses.

3. Material and methods

3.1. Research design

A descriptive exploratory design was utilized in the current study.

3.2. Sample

All critical care nurses working at selected medical, neurosurgery, and emergency critical care units were recruited to participate in the study.

3.3. Research questions

1. What methods of non-pharmacological pain interventions do nurses use in practice?
2. What is the relationship between nurses' practices and nurses' background regarding non-pharmacological pain interventions?
3. What are the perceived barriers that prevent nurses from using non-pharmacological interventions with their patients in pain?

3.4. Data collection and instruments

Background data were collected that covered critical care nurses' age, sex, educational level, working areas, and years of experience in the ICU (tool 1). A non-pharmacological pain management checklist was utilized to investigate the frequency of critical care nurses' use of non-pharmacological pain interventions methods with their patients in pain. This checklist was developed and created by the researcher after a literature review. It consisted of a list of 16 interventions methods related to non-pharmacological pain management (tool 2).

The checklist was reviewed and validated by a panel of experts in critical care nursing and pain management. The nurses were asked to complete that checklist and mention the frequency of use of non-pharmacological pain interventions methods on a Likert scale that ranging from frequently to never use. Test and retest were carried out, and the correlation coefficient was 0.7. Finally, data related to nurses' self-reported barriers to the use of non-pharmacological pain interventions were collected (tool 3).

3.5. Pilot study

A pilot study was carried out on seven critical care nurses to test the feasibility, objectivity, and applicability of the study tools. Based on the results of the pilot study, needed refinements and modifications were made.

3.6. Ethical consideration and protection of human rights

After the approval of the Institutional Review Board for the Protection of Human Rights at the Faculty of Nursing, Cairo University was obtained, the nurses were contacted, and each potential subject in the study was informed about the purpose, procedure, benefits, and nature of the study. They ensured that participation in this study was voluntary, the confidentiality and anonymity of each subject were assured through coding of all data, and the subjects had the right to

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