# Original Article

# Status of Neonatal Pain Assessment and Management in Jordan



From the \*Department of Mother and Child Health Nursing, School of Nursing, University of Jordan, Amman, Jordan; †Leicester Royal Infirmary, Leicester, UK; †Department of Nursing, College of Human and Health Sciences, Swansea University, Swansea, UK.

Address correspondence to Nadin M. Abdel Razeq, PbD, RN, Department of Mother and Child Health Nursing, School of Nursing, University of Jordan, Queen Rania Street - 11942, Amman, Jordan. E-mail: nmians@ yaboo.com

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1524-9042/\$36.00 © 2016 by the American Society for Pain Management Nursing http://dx.doi.org/10.1016/ j.pmn.2016.02.050 Nadin M. Abdel Razeq, AAUW Fellow, NIDCAP Professional, PhD, RN,\* Akuma O. Akuma, MBBS, MSc, FRCPCH,<sup>†</sup> and Sue Jordan, MBBCb, PhD, PGCE (FE)<sup>‡</sup>

### ■ ABSTRACT:

Current pain assessment and management in neonates need to be fully described before neonatal pain care can be optimized. This study's purpose was to report neonatal nurses' knowledge, existing pain assessment practice, and pharmacological pain management of neonates in Jordan. A cross-sectional descriptive study was conducted. Eighteen neonatal intensive care units in Jordan were included in the study. One hundred eighty-four neonatal nurses participated. Questionnaires were distributed by and returned to the neonatal intensive care units' managers between June and August 2014. Descriptive and inferential statistics were used to present study results. Of 240 questionnaires distributed, 184 useable responses were returned. Nurses' knowledge regarding neonates' neurological development, nociception, and need for neonatal pain management was suboptimal. The analgesics most commonly used to treat neonatal pain were acetaminophen (52%) and lidocaine (45%). Benzodiazepines, phenobarbitone, and muscles relaxants were also used. Most nurses (54%-97%) reported that pain emanating from most painful procedures was never or rarely treated. Circumcision, lumbar punctures, and chest tube insertion were assigned the highest pain scores ( $\geq 9$ ), but were rarely accompanied by analgesia. Pain assessment scales were more likely to be used, and procedural pain was more likely to be treated, in private hospitals than public hospitals. Neonates who require special care still suffer unnecessary pain that could be avoided and managed by following best practice recommendations. Disparities between developed and developing countries in quality of neonatal pain care appear to exist. Resources for education and routine care are needed to address these discrepancies.

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#### **BACKGROUND**

Repeated exposure of neonates to stressful events, such as painful procedures, adversely affects their physiologic and neurologic status and results in long-term harm, including changes to brain microstructure and function, neurodevelopment, stress systems, and stress-sensitive behaviors (Grunau, 2013; Johnston, Fernandes, & Campbell-Yeo, 2011). Every neonate should be protected from pain, because neonates, unlike adults, cannot request adequate analgesia (Guimaraes, Sanchez-Luna, Bellieni & Buonocore, 2011). Nurses are the primary advocates for premature and critically ill neonates, and advocating for neonates' rights to adequate pain management is a recognized responsibility of neonatal nurses (Cong, Delaney, & Vazquez, 2013).

Nurses' neonatal pain assessment and management have improved over the years (Gradin & Eriksson, 2011; Lago et al., 2013). Yet, pain management in critically ill and premature neonates, especially during painful procedures, has been consistently reported as inadequate and suboptimal worldwide (Lago et al., 2013; Mosalli, Shaiba, AlFaleh & Paes, 2012). Studies from developing countries, in particular, indicated suboptimal uptake of pain management guidelines, as well as less than adequate assessment and treatment of most painful daily procedures for hospitalized neonates (Britto et al., 2014; Khoza & Tjale, 2014; Martins, Dias, Enumo & Paula, 2013; Stevens, Gastaldo, & Gisore, 2014). It is a priority to describe existing practices before attempting to translate evidence into practice and improve the effectiveness and quality of pain management of neonates.

Jordan is a developing country in the Middle East with a population of more than nine million (Department of Statistics, Jordan, 2015) and an annual birth rate of 27 per 1,000 people (The World Bank, 2010-2014). Interest in palliative care and pain management has increased in the past few years. Most work on pain in Jordan has covered pain among adults or cancer patients (Al Qadire, Tubaishat & Aljezawi, 2013, 2014; Darawad, Al-Hussami, Saleh, & Al-Sutari, 2014), adult nurses (Al Khalaileh & Al Qadire, 2012, 2014), and nursing students (Al-Khawaldeh, Al-Hussami, & Darawad, 2013). Most recent studies in Jordan indicate that nurses demonstrate less knowledge about pain management than their international counterparts (Al Qadire & Al Khalaileh, 2014). Most patients who needed pain relief received either insufficient treatment or no treatment for their pain (Al Qadire, Tubaishat & Aljezawi, 2013). However, few studies that describe the knowledge and practice of pain management

among neonatal nurses were located, and none was from Jordan. Therefore, the purposes of this paper are to: 1) assess nurses' knowledge of neonatal pain, 2) describe current pain management practice in Jordan's neonatal intensive care units (NICUs), and 3) make recommendations to improve nursing care in NICU in Jordan. Specifically the study's objectives were to:

- Identify levels of knowledge regarding neonatal pain among neonatal nurses.
- Identify the most common pain indicators and pain assessment tools used.
- Describe nurses' perceptions of neonates' pain associated with clinical procedures performed in NICUs.
- Identify the most common pain medications used to manage pain in NICUs.
- 5. Evaluate the frequency of the use of local and systemic analgesia when managing procedure- related pain.

#### MATERIALS AND METHODS

#### Design

This was a cross-sectional survey, using an established questionnaire (Akuma & Jordan, 2012).

#### **Setting and Participants**

Nineteen NICUs in Jordan were approached and agreed to participate. However, one unit experienced delay in obtaining approval and questionnaires were not received by the end of the planned data collection period; therefore, it was excluded.

The numbers of registered nurses working in each NICU were obtained, and the appropriate numbers of questionnaires, with self-seal envelopes for their return when completed, were handed to each unit manager for distribution. In all, 240 registered nurses were employed across the 18 NICUs. All nurses employed in NICUs work full time across both day and night shifts.

All neonatal nurses and head nurses working in the 18 NICUs were asked to complete a self-administered questionnaire. Twelve NICUs were located in private hospitals and two were in public hospitals located in Amman; while four were in major public hospitals located in north Jordan.

#### **Data Collection Instrument**

Data presented in this paper are part of a larger study designed to assess neonatal pain management reported here and barriers to pain care practice reported elsewhere. Nurses were handed an invitation letter that included study information and two questionnaires with a section on demographic data, but not the respondent's name or institutional affiliation. The two survey questionnaires related to neonatal pain care;

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