

**Knowledge about the management of neonatal pain in the nursing professional****Conocimiento sobre el manejo del dolor neonatal en el profesional de enfermería**

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**Abstract**

In daily practice in the neonatal intensive care unit (NICU), newborns are subjected to a series of procedures and therapeutic interventions that cause pain; Pain management in the newborn is important within specialized care in neonatology (Gallegos-Martínez & Salazar-Juárez, 2010). Patricia Benner in her theory points out that, as the professional acquires this experience, clinical knowledge becomes a mixture of practical and theoretical knowledge. It is important to mention that nursing sees the human being as a holistic being in each of the stages of his life. Objective: Identify the level of knowledge about pain management in the Neonatal Intensive Care area by the nursing professional. Methodology: A quantitative, descriptive study was carried out, its type of research is prospective, longitudinal. The subjects were nursing staff. With a universe of 35 nurses from all shifts and a sample of 20 participants at the convenience of the NICU area from different shifts (morning, afternoon, night and cumulative shift). An instrument was used to measure knowledge of neonatal pain by nursing professionals in neonatal intensive care units carried out by Edwin Millán Flores and validated by the Ana G. Méndez University System (SUAGM) in Puerto, Rico. Results: The level of knowledge about neonatal pain management education was 35.0% of the nursing staff had a good level of knowledge and 45.0% had an excellent level. Conclusions: Although we have the knowledge, the nursing professional Benner tells us that we must reach the experts, therefore, it is necessary to design tools or strategies that take us to the experts, to apply the knowledge and share it with the other personnel in the area.

**Resumen**

En la práctica cotidiana en la unidad de cuidados intensivos neonatales (UCIN) los recién nacidos son sometidos a una serie de procedimientos e intervenciones terapéuticas que ocasionan dolor; el manejo del dolor en el neonato es importante dentro de los cuidados especializados en neonatología (Gallegos-Martínez & Salazar-Juárez, 2010). Patricia Benner (García, 2007), en su teoría señala que, a medida que el profesional adquiere esta experiencia, el conocimiento clínico se convierte en una mezcla de conocimiento práctico y teórico. Es importante mencionar que enfermería ve al ser humano, como un ser holístico en cada una de las etapas de su vida. Objetivo: Identificar el nivel de conocimiento sobre manejo del dolor en el área de Cuidados Intensivos Neonatales por el profesional de enfermería. Metodología: Se realizó un estudio cuantitativo, descriptivo, su tipo de investigación es prospectivo, longitudinal. Los sujetos fueron el personal de enfermería. Con un universo de 35 enfermeros de todos los turnos y una muestra de 20 participantes a conveniencia del área de UCIN de diferentes turnos (matutino, vespertino, nocturno y jornada acumulada). Se utilizó un instrumento para medir el conocimiento del dolor neonatal por profesionales de enfermería en las unidades de intensivo neonatales realizado por Edwin Millán Flores y validado por el Sistema Universitario Ana G. Méndez (SUAGM) en Puerto, Rico. Resultados: El nivel de conocimiento sobre el manejo del dolor neonatal educativa fue de 35.0% del personal de enfermería tuvo un nivel de conocimiento bueno y el 45.0% un nivel excelente. Conclusiones: Si bien se tiene el conocimiento, por parte del profesional de enfermería Benner nos dice que debemos llegar a la expertes, por lo tanto, es necesario diseñar herramientas o estrategias que nos lleven a la expertes, para aplicar los conocimientos y se compartan con el demás personal del área.

**Nursing, Pain, Nonate****Enfermería, Dolor, Neonato**

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## Introduction

The management of pain in neonates by nursing staff has been observed to be very limited and goes unnoticed, due to work overload, excess of patients and lack of information. It is important to emphasise this issue, as this will help to avoid the suffering of the neonate in the hospital ward, as well as the neurodevelopment of the patient. This will promote knowledge in the staff in their professional training, having more skills to detect pain; as a discipline being specialised health professionals and focused on the comprehensive care of the newborn. There are many factors that are not taken into account in assessment, such as applying an appropriate pain scale for the newborn, as well as implementing a technique to reduce or alleviate pain.

The implementation of a neonatal pain assessment register can help to improve and unify criteria in the assessment that each professional applies when carrying out a painful procedure in this type of patient. Failure to assess and control pain in newborns can have negative consequences for short- and long-term health, including: behavioural problems, learning problems, hormonal alterations, among others, which is why current recommendations are that pain should be considered as the fifth vital sign to be assessed in the comprehensive and holistic care of newborns (San Martín, Valenzuela, Huaiquian & Luengo, 2017).

Pain is a subjective sensation, its manifestation in neonates is difficult to identify, which leads to it not being considered during medical practice. It is an "unpleasant sensory and emotional experience associated with actual or potential tissue damage" (International Association for the Study of Pain Subcommittee on Taxonomy [IASP], 1986) (Romero, Artemo & Galindo, 2015).

Pain management in the neonate is a very important issue in neonatal specialised care, as neonates often have to undergo repetitive invasive and non-invasive interventions that are painful procedures, yet no measures have been taken to avoid pain in the neonate.

According to Romero et al (2015) newborns in NICU experience between 14 to 16 painful procedures per day, most of which are performed without effective pain control measures only 20.3% receive specific analgesic treatment.

## Materials and methods

### *Classification of the research*

This is a research that due to its nature is considered quantitative, according to Hernández (2014) and due to its origin it is a descriptive study, as it exposes the observable and general characteristics of the phenomenon that will be measured. With the aim of describing the level of neonatal pain management in the nursing professional.

### *Participants*

From a universe of 30 nurses from a tertiary care hospital, the instrument was applied to a convenience sample of 20 nurses from the NICU area from different shifts (morning, afternoon, evening, night and accumulated shift) of indistinct sex, who agreed to participate and sign the informed consent form; those participants who did not comply with the indications and did not answer the entire instrument were excluded from the research.

Instrument validation: An instrument entitled: "Instrument to measure knowledge of neonatal pain by nursing professionals in neonatal intensive care units", validated and developed by Edwin Millán Flores and validated by the Ana G. Méndez University System (SUAGM) in Puerto Rico, was used.

It is made up of 4 parts: the first is socio-demographic data with 7 items, marking with an (X) the one that best fits their reality; the second part measures the management of pain in neonatal units with 6 items in which they also mark with (X); the third part measures how nursing professionals identify neonatal pain and is made up of 11 items where participants use a Likert-type scale: the scale is as follows 1= strongly agree, 2= agree, 3= neutral (neither agree nor disagree), 4= disagree, 5= strongly disagree.

The fourth part is a true and a false to measure the knowledge of the nursing staff on the management of neonatal pain which is composed of 20 premises where the participants will answer with an (X). There will be a total of 44 statements in all. The scale will be 100-90 very good, 89-80 good, 79-70 fair and 69 or less poor.

**Data collection:** Data collection was conducted with the approval of the local ethics and research committee of the Universidad Veracruzana, in accordance with the principles of ethics and Helsinki declarations. Data collection was non-probabilistic by convenience, with a sample of 20 nurses from a tertiary care hospital who agreed to participate and signed the informed consent form; data analysis was performed with the SPSS17 statistical programme.

**Results and discussion**

For the descriptive analysis of the variables, bar and pie charts with percentages were obtained, and for the quantitative variables, summary tables with median and standard deviation were obtained.

The results showed that 90.0% of the nursing staff is female, the most common age is between 26 and 30 years with 40.0%.

Regarding the length of experience, 45.0% of the nursing staff has 1 to 5 years. The percentage is the same for staff with 11 or more years of experience. 55.0% have a postgraduate degree, 30.0% a bachelor's degree. Only 20.0% have taken courses where the topic of neonatal pain is considered. 50.0% have taken the neonatal resuscitation course 7th edition and 60.0% have taken courses related to the management of the neonatal patient.

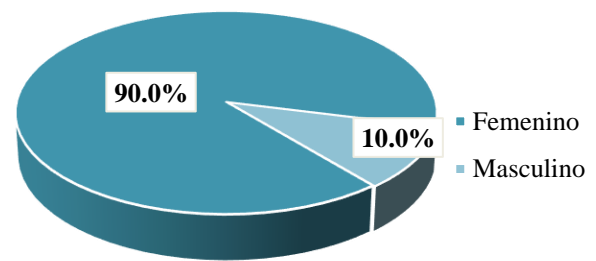
45.0% of the nursing staff do use pain measurement scales such as: PPIP (Premature Infant Pain Profile or Scale), NFCS (Neoanatal Facial Coding System), CONFORT Scale, EVA and/or WONG BAKER. Among the most common care or measures offered when identifying neonatal pain are: Allowing parental visits (cuddling, cuddling, etc.), Decreasing excessive light, Decreasing excessive noise, Cuddling.

Nursing staff identify signs of pain in neonatal patients; use of behavioural measures to identify neonatal pain; and use of oral, IV or topical medication are the most common actions used by nursing staff to identify neonatal pain.

The level of knowledge of neonatal pain management was 35.0% of the nursing staff had a good level of knowledge and 45.0% an excellent level.

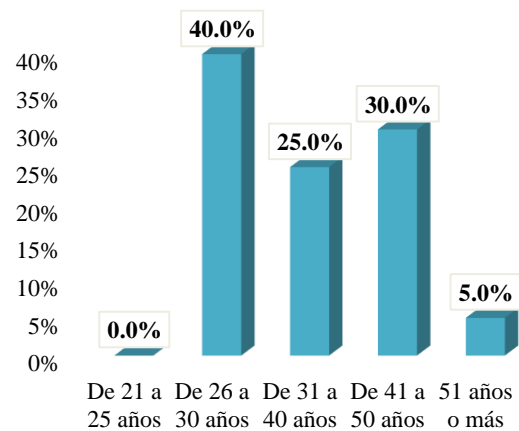
*Socio-demographic variables*

90.0% of the nursing staff were female.



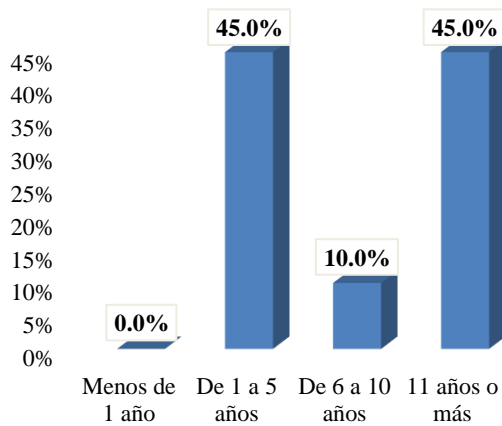
**Graphic 1** Gender of nursing staff  
*Source: Own elaboration*

The most common age among nursing staff is 26-30 years with 40.0%, the least common is 51 years and older with 5.0%. No age between 21 and 25 years was found.



**Graphic 2** Age of nursing staff  
*Source: Own elaboration*

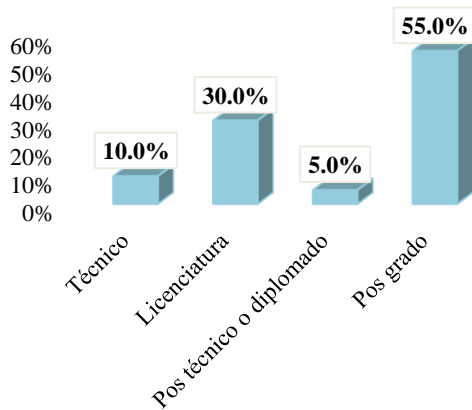
45.0% of staff have 1 to 5 years of experience in neonatal areas; the percentage is the same for staff with 11 or more years of experience. No experience of less than 1 year was found.



**Graphic 3** Nursing staff experience in neonatal areas

Source: Own elaboration

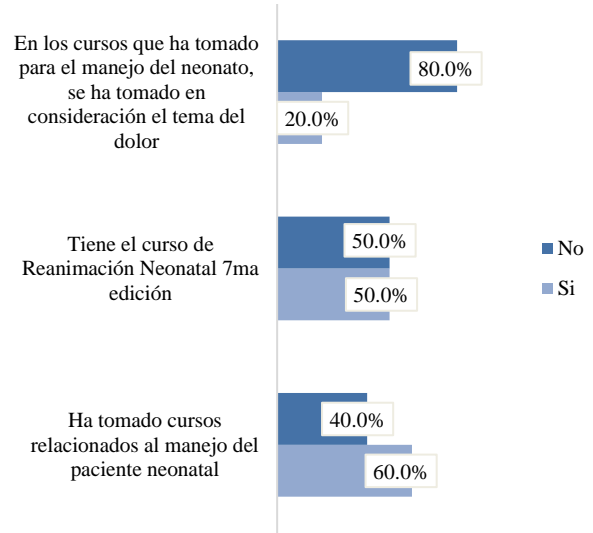
55.0% of the staff have a postgraduate degree, 30.0% a bachelor's degree, 10.0% a technical degree and only 5.0% a post-technical degree or diploma.



**Graphic 4** Academic level of nursing staff

Source: Own elaboration

Graphic 5 shows that 20.0% of the nursing staff have taken courses on the subject of neonatal pain. 50.0% have taken the course on neonatal resuscitation 7th edition. 60.0% have taken courses related to the management of neonatal patients.

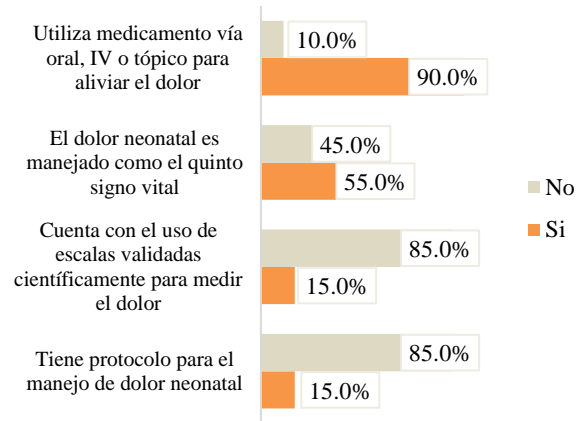


**Graphic 5** Courses taken by nursing staff.

Source: Own elaboration

*Management of neonatal pain in the unit*

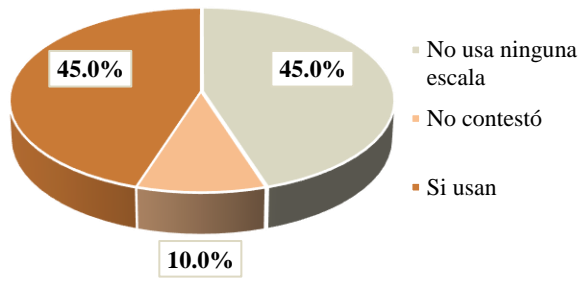
Graphic 6 shows that 90.0% of the staff do use oral, IV or topical medication to relieve pain. 55.0% do manage neonatal pain as the fifth vital sign. 15.0% use scientifically validated scales to measure pain, and the same percentage have a protocol for the management of neonatal pain.



**Graphic 6** Management of neonatal pain by nursing staff

Source: Own elaboration

45.0% of the nursing staff did use scales to measure pain, the same percentage did not use any scale and 10.0% did not answer.



**Graphic 7** Use of scale to measure neonatal pain, by nursing staff

Source: Own elaboration, 2019

Table 1 shows the scales commonly used by nursing staff.

PPIP (Premature Infant Pain Profile or Scale)	2
NFCS (Neonatal Facial Coding System)	2
CONFORT Scale	1
EVA	4
WONG BAKER	2

**Table 1** Scales used to measure neonatal pain

Source: Own elaboration, 2019

The most common care or measures that nurses offer when identifying neonatal pain are presented in Table 2.

Allowing parental visits (cuddling, cuddling, etc.)	65.0%	35.0%	100.0%
Use of the Kangaroo technique	35.0%	65.0%	100.0%
Offer massage	40.0%	60.0%	100.0%

**Table 2** Most common care or measures offered when identifying neonatal pain

After drinking? 68% said never, 24% less than once a month and 4% daily or almost daily. To the question, how often in the course of the last year have you not been able to remember what happened the night before because you had been drinking? 82% mention never having experienced it, but 16% have experienced it.

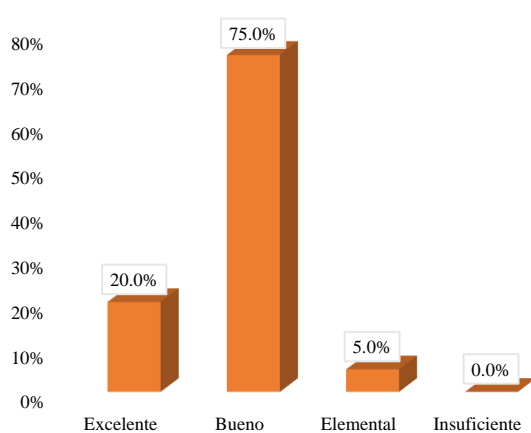
	Yes	No	Total
Allowing parental visits (cuddling, cuddling, etc.)	65.0%	35.0%	100.0%
Use of the Kangaroo technique	35.0%	65.0%	100.0%
Offer massage	40.0%	60.0%	100.0%
Decrease excessive light	85.0%	15.0%	100.0%
Decrease excessive noise	85.0%	15.0%	100.0%
Use of oral glucose solutions	5.0%	95.0%	100.0%
Use of dummy	30.0%	70.0%	100.0%
Holding in arms	35.0%	65.0%	100.0%
Cuddling	60.0%	40.0%	100.0%
Breast milk	15.0%	85.0%	100.0%
Use of water mattresses	10.0%	90.0%	100.0%
Singing	15.0%	85.0%	100.0%
Cuddling	25.0%	75.0%	100.0%
Talking softly	45.0%	55.0%	100.0%
Offer soft music	0.0%	100.0%	100.0%
Use of local anaesthetic, topical application of EMLA cream	5.0%	95.0%	100.0%
Use of local anaesthetic, 4% amethocaine gel for topical use	0.0%	100.0%	100.0%
Use of local anaesthetic, 4% tetracaine gel for topical use	0.0%	100.0%	100.0%
Opioid use, morphine.	15.0%	85.0%	100.0%
Opioid use, codeine	0.0%	100.0%	100.0%
Opioid use, fentanyl.	35.0%	65.0%	100.0%
Opioid use, meperidine.	0.0%	100.0%	100.0%
Opioid use, methadone.	0.0%	100.0%	100.0%
Opioid use, tramadol	15.0%	85.0%	100.0%
Use of non-steroidal anti-inflammatory analgesics, aspirin.	0.0%	100.0%	100.0%
Use of non-steroidal anti-inflammatory analgesics, diclofenac.	5.0%	95.0%	100.0%
Use of non-steroidal anti-inflammatory analgesics, ketorolac.	10.0%	90.0%	100.0%
Use of non-steroidal anti-inflammatory analgesics, ibuprofen.	5.0%	95.0%	100.0%
Use of non-steroidal anti-inflammatory analgesics, naproxen.	0.0%	100.0%	100.0%
Use of non-steroidal anti-inflammatory analgesics, paracetamol.	65.0%	35.0%	100.0%
Keeping the neonate sedated	40.0%	60.0%	100.0%
Other	00.0%	00.0%	100.0%

**Table 3** Most common care or measures offered when identifying neonatal pain

Source: Own elaboration

Overall, 75.0% of nurses have a good use of the neonatal pain rating scale, 20.0% an excellent use and 5.0% an elementary use.

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**Graphic 8** Use of the neonatal pain rating scale by nursing staff.

Source: Own elaboration

### Acknowledgement

We thank the hospital for their openness and the nursing staff who agreed to participate in the research.

### Funding

No funding sources were obtained.

### Conclusions

According to the statistical analysis it was found that the level of knowledge on neonatal pain management 35.0% of the nursing staff had a good level of knowledge, 45.0% an excellent level, 15% an average level and 5% a low level. The nursing staff is characterised by updating and is always looking for continuous preparation, therefore it is necessary to follow up on the management of neonatal pain in the neonatal areas, especially in the NICU, and to implement a manual or a section on the techniques to be used to treat neonatal pain.

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