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Journal of Nursing Techniques and Health

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The works must be unpublished and refer to topics of Surgical techniques, technological innovation in nursing, drug management quality in patient care, first aid techniques, patient management and Control, patient grooming techniques and other topics related to Medicine and Health Sciences.

Presentation of Content

As first article we present, *Nursing care plan on gas exchange impairment due to SARS-CoV-2: case report*, by PÉREZ-LÓPEZ, Mónica Carolina, GALLEGOS-GARCÍA, Verónica and MEDINA-DE-LA-CRUZ, Omar, with affiliation at the Universidad Autónoma de San Luis Potosí; as second article we present, *Levels of depression in pregnant women attending the Ticul community hospital, Yucatan, Mexico*, by RODRÍGUEZ-ANGULO, Elsa, GIL-GUZMÁN, Jimena, OJEDA-RODRÍGUEZ, Ricardo and ANDUEZA-PECH, Guadalupe, with adscription in the Universidad Autónoma de Yucatán, as third article we present, *Parents' knowledge of nutritional labeling and its impact on food choices*, by SOLÍS-LEAÑOS, Karla, GUTIÉRREZ-HERNÁNDEZ, Rosalinda, REYES-ESTRADA, Claudia Araceli and LAZALDE-RAMOS, Blanca Patricia, with secondment at the Universidad Autónoma de Zacatecas, as last article we present, *Knowledge about the management of neonatal pain in the nursing professional*, by TOTOMOL-YOVAL, Blanca Estela & PARRA-ARCOS, María Fernanda, with affiliation at the Universidad Veracruzana.

Content

Article **Journal of Nursing Techniques and Health**
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Nursing care plan on gas exchange impairment due to SARS-CoV-2: case report

Plan de cuidados de enfermería sobre deterioro del intercambio gaseoso por SARS-CoV-2: reporte de caso

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Abstract

INTRODUCTION: Over the years, mankind has been in contact with several viruses, which have threatened human existence by becoming pandemics such as influenza in 1918. However, in January 2020, the Chinese Centre for Disease Control and Prevention identified SARS-CoV-2 as the etiological agent of the 2019 coronavirus. So far it is known that 5% of patients with severe COVID-19 will require attention in intensive care units. To this end, critical care nursing staff use the nursing care process to prioritize the care of the critically ill patient. OBJECTIVE: To develop a nursing care plan by analyzing a clinical case of an adult patient with a diagnosis of COVID-19. METHODOLOGY: The case of a patient with a diagnosis of COVID-19 was analyzed to develop a nursing care process using the taxonomies of the North American Nursing Diagnosis Association, Nursing Interventions Classification and Nursing Outcomes Classification. Documentary research was carried out through a literature search in databases such as: Scielo, Medicgraphic, Google Scholar and PubMed. RESULTS: Three real nursing diagnoses and seven risk diagnoses were identified. The priority nursing diagnostic label based on Maslow's pyramid of needs was deterioration of related gas exchange. CONCLUSIONS: The critical care nurse takes a leading role in the care of patients with a diagnosis of COVID-19, the development of the nursing care process contributes to providing quality care focused on the well-being of the user.

COVID-19, intervections

Resumen

INTRODUCCIÓN: A lo largo de los años la humanidad ha estado en contacto con diversos virus, los cuales han amenazado la existencia del ser humano al convertirse en pandemia como el de la influenza en 1918. Sin embargo, en enero de 2020 el Centro Chino para el Control y la Prevención de Enfermedades identificó al SARS-CoV-2 como el agente etiológico del coronavirus 2019. Hasta el momento se sabe que el 5% de los pacientes con COVID-19 grave requerirán de cuidados en las unidades de cuidados intensivos. Para ello el personal de enfermería en cuidado crítico utiliza el proceso cuidado enfermero para priorizar la atención del paciente crítico. OBJETIVO: Elaborar un plan de cuidados de enfermería mediante el análisis de un caso clínico de paciente adulto con diagnóstico de COVID-19. METODOLOGÍA: Se analizó el caso de un paciente con diagnóstico de COVID-19 para el desarrollo de un proceso cuidado enfermero implementado las taxonomías de la North American Nursing Diagnosis Association, Nursing Interventions Classification y Nursing Outcomes Classification. Se realizó investigación documental mediante una búsqueda bibliográfica en bases de datos como: Scielo, Medicgraphic, Google académico y PubMed. RESULTADOS: Se identificaron tres diagnósticos de enfermería reales y siete de riesgo. La etiqueta diagnóstica de enfermería prioritaria con base a la pirámide de las necesidades de Maslow fue deterioro del intercambio de gases relacionado CONCLUSIONES: La enfermera en cuidado critico se posiciona como líder en el cuidado de pacientes con diagnóstico de COVID-19, el desarrollo del proceso cuidado enfermero contribuye para brindar una atención de calidad enfocada en el bienestar del usuario.

COVID-19, Intervenciones

Citation: PÉREZ-LÓPEZ, Mónica Carolina, GALLEGOS-GARCÍA, Verónica and MEDINA-DE-LA-CRUZ, Omar. Nursing care plan on gas exchange impairment due to SARS-CoV-2: case report. Journal of Nursing Techniques and Health. 2023. 7-18:1-8.

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Introduction

Coronaviruses (CoV) are a family of viruses that can cause multiple conditions, ranging from the common cold to different complications such as those caused by SARS-CoV-1 (Severe Acute Respiratory Syndrome Coronavirus 1) (Rossi, Sacco, Mancino, Cristiani , Midulla , 2020). However, during 2019, the SARS-CoV-2 virus that causes coronavirus disease 2019 (COVID-19) emerged, which is different from the coronaviruses that commonly cause mild human illness, as it is suggested that SARS-CoV-2 may evade the immune system more effectively than SARS-CoV-1 and thus cause pneumonia whose main feature on Computer Axial Tomography (CAT) is ground-glass opacity (Rossi et al, 2020), (Wiersinga, Rhodes, Cheng, Peacock, Prescott, 2019).

On December 31st 2019, a cluster of pneumonia cases with unknown etiology was reported in Wuhan, the capital of the Hubei province, China. On 9 January 2020, the Chinese Centre for Disease Control and Prevention identified the novel SARS-CoV-2 coronavirus as the causative agent of this outbreak. On 30 January 2020, the Director-General of the World Health Organization (WHO) declared the outbreak to be a public health emergency of international concern (Carvalho, Krammer, Iwasaki, 2021).

On 11 February 2020, the WHO officially named the disease COVID-19. In this abbreviation COVID-19, "CO" stands for "corona", "VI" for "virus" and "D" for "disease". Previously, the way to refer to this disease was "new coronavirus 2019" or "2019-nCoV"(Parlakpinar, Gunata, 2021). By March 2020, the epidemic is classified as a pandemic (Megna, 2020).

Transmission of SARS-CoV-2 is primarily respiratory-mediated, i.e. it is spread by virions suspended in large droplets (>5μm) or sprays (<5μm) that are expelled from the primary patient's respiratory tract by talking, coughing or sneezing (Meyerowitz, Richterman, Gandhi, 2021), (Greenhalgh et al, 2021). Although the evidence suggesting transmission by direct contact or fomites is inconclusive, transmission can occur due to poor hand hygiene by touching surfaces containing viral particles and direct conjunctival inoculation or contact with the respiratory mucosa (Heneghan et al, 2021), (Karia, Gupta, Khandait, Yadav, Yadav, 2020).

For all these reasons, it is a virus with a high rate of contagiousness and lethality, especially in older adults (>65 years). This lethality may be due to the comorbidities of the patients, the pathogenicity of the virus, the immunity of the population and the host's response to infection; it should be mentioned that depending on the country, this lethality rate may be modified (Piroth, Cottenet, Mariet, 2021). It is known that some of the comorbidities that increase the risk of death due to the development of hypoxemia generated by SARS-CoV-2 are arterial hypertension, obesity and diabetes (Fernández-Rojas, et al 2021).

Among the main complications that COVID-19 patients develop is severe acute respiratory distress syndrome, which is considered a major predictor of intensive care unit (ICU) admission, mechanical ventilation and death (Bickler, Feiner, Lipnick, McKleroy, 2021). Intrapulmonary derivation and ventilation/perfusion imbalance are the main causes of impaired gas exchange leading to hypoxemia in patients with COVID-19, if not resolved with supplemental oxygen it indicates that the deterioration has progressed beyond ventilation/perfusion mismatch, (Bickler, Feiner, Lipnick, McKleroy, 2021),(Dhont, Derom, Van Braeckel, Depuydt, Lambrecht, 2020), (Diehl, Peron, Chocron, 2020); approximately 50-85% of patients with ICU admission developed hypoxemia or respiratory exhaustion, (Haouzi, Zamir, Villarreal-Fernandez, 2020), (Ouyang L, Yu M, Zhu Y, Gong, 2021).

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PÉREZ-LÓPEZ, Mónica Carolina, GALLEGOS-GARCÍA, Verónica and MEDINA-DE-LA-CRUZ, Omar. Nursing care plan on gas exchange impairment due to SARS-CoV-2: case report. Journal of Nursing Techniques and Health. 2023

Evidence from other countries estimates that 5% of patients who develop severe COVID-19 will require ICU care, consequently, this has led to critical care nurses becoming more skilled in recognizing, preventing and intensifying care in a holistic manner for patients with this condition (Carter, Notter, 2020). Nursing staff, compared to other healthcare professionals, spend more time in contact with patients and therefore play a key role in their care and attention (Bayih, Ayalew, Belay, 2021).

This care provided by nurses is based on the nursing care process, which is a practical tool that guides the critical thinking of these professionals for the development of Nursing Care Plans (NCP) (Bayih, Ayalew, Belay, 2021). For all of the above reasons, an NCP was developed in the present study, which focuses on a clinical case of an adult patient with a diagnosis of COVID-19, who was hospitalized in an ICU and whose priority nursing diagnosis was deterioration of gas exchange.

Methodology

A clinical case was identified of a patient with a diagnosis of COVID-19 who was hospitalized in an ICU in a private hospital in the city of San Luis Potosí, Mexico. Subsequently, a nursing assessment was carried out using Marjory Gordon's functional patterns, which made it possible to identify the main nursing diagnoses according to the taxonomy of the North American Nursing Diagnosis Association (NANDA), (Kamitsuru, Herdman, 2018) and the diagnoses were prioritized based on Maslow's pyramid of needs (Desmet P, Fokkinga, 2020) in order to plan nursing interventions through the Nursing Interventions Classification (NIC), (Butcher, Bulechek, Dochterman, 2018) and the expected results were established according to the Nursing Outcomes Classification (NOC) (Moorhead, 2018).

The analysis and substantiation of the clinical case was carried out by consulting the literature through the review of various articles in indexed, refereed journals and *Journal Citation Reports*. The literature search was carried out in databases such as: Sciense Direct, Scielo, Medicgraphic, Medic Latina, Clinical Key, Elsevier, Google Scholar and PubMed. The characteristics of the articles consulted were no less than three years old in English and Spanish.

Results

Clinical findings

The following is the nursing assessment data obtained from the clinical case patient using Marjory Gordon's functional patterns:

Health perception and health management.

Patient with a diagnosis of diabetes mellitus and arterial hypertension (the time of evolution of both pathologies is unknown) with pharmacological treatment. A CAT scan was performed (Figure 1).

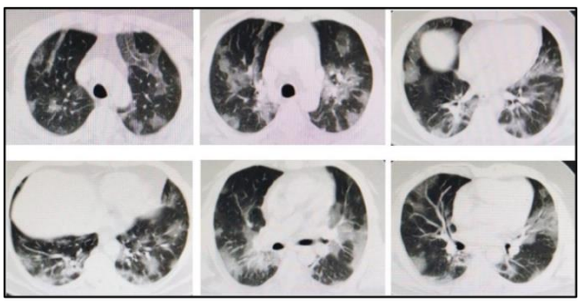

Figure 1 Lung CAT scan of the patient with a diagnosis of COVID-19. The image shows in both lungs the main characteristic of this pathology, which is ground-glass opacity in both lungs
Source: Own elaboration

Nutrition and metabolism

Dry oral mucosa, pale gums, weight 105 kg, height 165 cm and body mass index of 38,5. On admission with fever of 38.4°C and dysthermia. Laboratory studies at the time of initial evaluation showed some data out of normal ranges: blood biometry: leukocytes 13,23 k/µL, lymphocytes 8%, segmented neutrophils 90%; blood chemistry: blood glucose 336 mg/dl and urea in blood 79,18 mg/dl.

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Elimination

Urinary catheter is installed to shunt, managing a urine output of 0.6 ml/kg/h, diuresis is observed concentrated with slight sediment. The patient is diaphoretic, with a balance in turn of -412 ml; without defecation in the last 48 hours.

Activity-exercise

Hypotensive patient with blood pressure of 90/50 mmHg with BPM (76 mmHg), tachycardic (121x'1), eupneic (20x'1), oxygen saturation 77% by pulse oximetry, pulmonary auscultation reveals hypoventilation, capillary filling of 3 secs, distal and peribuccal cyanosis. Patient on invasive mechanical ventilation with the following programming: A/C mode, pressure management with a frequency of 20 l/min. PEEP 14, pressure support of 16 and a sensitivity of 2 l/min. His acid-base balance was monitored **(Figure 2).**

Parameters	Admission	Before MV	Post MV	Normal parameters
pH	7,441	7,460	7,378	7,32-7,43
$PaCO_2$ (mmHg)	31,1	34,5	40	35-48
PaO_2 (mmHg)	31,3	31	42	83-108
HCO_3 (mmol/L)	21,2	24,5	23,6	21-28
StO_2	63,9%	60%	77%	94-98%

Figure 2. Blood gas parameters of the patient with a diagnosis of COVID-19. The difference between the patient's blood gas parameters on admission to the ICU before mechanical ventilation (MV) and after MV can be seen

Cognitive-perceptual

Under sedoanalgesia with fentanyl and midazolam (200ml of 0.9% saline + 200mg of midazolam + 2gr of fentanyl), with -4 RASS (Richmond Agitation-Sedation Scale) points, normoreflexic isochoric pupils.

Roles and relationships

Relatives at home, but in constant communication to be informed about the patient's health status.

Values and beliefs

In his unit he has a religious image.

Main nursing diagnoses in the patient

Ten nursing diagnoses were identified in the patient with a diagnosis of COVID19 (Table 1) of which seven are risk and three are actual.

Functional health patterns	NANDA Domain	Type	Nursing diagnosis
Nutritional Metabolic	2. Nutrition	4. Metabolism	(00179) Risk of blood glucose level r/f physical health condition.
Nutritional Metabolic	2. Nutrition	5. Hydration	(00028) Risk of fluid volume deficit r/f (risk factor) situation affecting access, intake or absorption of liquids.
Elimination	3. Eliminatio n	4.Respiratory function	(00030) Impaired gas exchange r/t (related to) alveolar capillary membrane changes s/b/ (shown by) abnormal skin color, diaphoresis, abnormal gasometry, hypoxemia, hypoxia, tachycardia
Activity Exercise	4. Activity/ rest	4.Cardiovascular/pulmonary responses	(00200) Risk of decreased cardiac output r/t alteration in preload.
Nutritional Metabolic	11. Safety protection	6. Thermoregulation	(00007) Hyperthermia r/t disease s/b hypotension, tachycardia, warm skin to touch.
Nutritional Metabolic	11. Safety protection	2. Physical injury	(00045) Deterioration of oral mucosa r/f dehydration s/b gum paleness.
Nutritional Metabolic	11. Safety protection	2. Physical injury	(00047) Risk of deterioration of skin integrity r/f hyperthermia, humidity, alteration in fluid volume.
Activity Exercise	11. Safety protection	2. Physical injury	(00205) Risk of shock r/t systemic inflammation response syndrome.
Activity Exercise	11. Safety protection	2. Physical injury	(00206) Risk of bleeding r/f therapeutic regimen s/b hypotension, hypovolemia, hypoxemia, hypoxia, systemic inflammatory response syndrome.
Nutritional Metabolic	11. Safety protectio n	2. Physical injury	(00249) Risk of pressure sore r/f dehydration, hyperthermia, skin moisture, decreased mobility.

Table 1 Nursing diagnoses identified in the patient with COVID-2019 diagnosis

Priority nursing care process on the deterioration of gas exchange in a patient with a diagnosis of COVID-19

Table 2 shows the NCP of the deterioration of gas exchange in the patient diagnosed with COVID-19, which was prioritized according to Maslow's pyramid, in the section of physiological needs in which we can include the respiratory aspect.

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Domain:0004 Elimination	**Type:** 0004 Respiratory function	**Expected result**		
Nursing Diagnosis (NANDA)	**Result (NOC)**	**Indicator**	**Measurement scale**	**Target score**
Label (Problem) (P) (00030) Deterioration of gas exchange **Related factors (causes) (E)** Capillary alveolar membrane changes **Defining Characteristics (Signs and Symptoms)** Abnormal skin color, diaphoresis, abnormal blood gas, hypoxemia, hypoxia, tachycardia.	Mechanical ventilation response: adult (0411)	Respiratory rate in expected range (040301) Breathing depth (040303)	1. Grave 2.Substantial 3.Moderate 4.Mild 5.None	**Maintain: 3** **Increase: 4** **Result: 5**
	Respiratory status: ventilation (0410)	Absence of accessory muscles use (040309) Absence of fever (041001) Absence of anxiety (041002) Respiratory rate in the expected range (041004)	1.Extremely 2.Substantially 3.Moderately 4.Slightly 5.Not compromised	**Maintain: 2** **Increase: 3** **Result: 5**
	Vital signs status (0802)	Sputum movement out of airway (041006) Temperature (080201) Apical pulse rate (080202) Respiratory rate (080204) Systolic blood pressure (080205)	1.Extremely 2.Substantially 3.Moderate 4.Mild 5.No deviation	**Maintain: 2** **Increase: 4** **Result: 5**

Nursing intervention (NIC) Respiratory monitoring (3350)	**Nursing intervention (NIC)** Caution to avoid aspiration (3200)
Activities: - Placement of continuous non-invasive oxygen sensors, with an appropriate alarm system. - Continuous monitoring of oxygen saturation levels. - Auscultation of respiratory sounds, noting areas of decreased ventilation and presence of adventitious sounds. - Determining if there is a need for aspiration by auscultation. - Monitoring and recording mechanical ventilator readings. - Observing changes in arterial blood gas values. - Frequent monitoring of the patient's respiratory status. - Follow up on radiology reports.	**Activities:** - Keep head of bed elevated 30-45 degrees. - Keep endotracheal tube balloon inflated. - Keep aspiration equipment available. - Check NG tube placement. - Check gastric residue before starting feeding.
Nursing intervention (NIC) Management of mechanical ventilation: invasive (3300)	**Nursing intervention (NIC)** Management of artificial airways (3180)
Activities: - Consulting with other healthcare professionals on ventilator mode selection. - Make sure ventilator alarms are turned on. - Routinely check ventilator settings, including temperature and humidification of inhaled air. - Regularly check all ventilator connections. - Observe for a decrease in exhaled volume and an increase in inspiratory pressure. - Administer appropriate muscle relaxants, sedatives and narcotic analgesics. - Control activities that increase O2 consumption (fever, chills, pain, basic nursing activities) that may overwhelm ventilatory support settings and cause O2 desaturation. - Control factors that increase patient/ventilator work of breathing (morbid obesity, lowered head of bed, obstructed ET, condensation on ventilator tubing, occluded filters. - Monitor for symptoms indicating increased work of breathing (tachycardia, hypertension, diaphoresis, change in mental state. - Monitor efficacy of mechanical ventilation on the patient's physiological state. - Provide care to relieve patient discomfort. - Monitor ventilator pressure readings, patient/ventilator synchrony and patient's vesicular murmur. - Monitor patient progress with current ventilator settings and make appropriate changes according to physician order. - Monitor for oral, nasal, tracheal, or laryngeal mucosal injury from artificial airway pressure, elevated balloon pressure or unscheduled extubation. - Use tube holders or strips to secure the artificial airway to prevent unscheduled extubation. - Place the patient in a manner that facilitates ventilation/perfusion matching. - Routinely set up oral care with moist soft gauze, antiseptic and gentle suctioning. - Monitor the effects of ventilator changes on oxygenation: arterial blood gases, as well as the patient's subjective response. Document all ventilator setting changes with their justification. Document all patient responses to the ventilator and ventilator changes. Monitor for complications following extubation. Ensure the presence of the emergency equipment at the patient's bedside at all times.	**Activities:** - Wash hands. - Use universal precautions. - Correct and complete use of personal protective gear. - Provide 100% humidification. - Inflate ET balloon using a minimally occlusive technique or minimal leak technique. - Keep ET balloon inflated to 15-20 mmHg during mechanical ventilation. - Check balloon pressure immediately after handling the ET balloon. - Mark the reference in cm on the ET to check for possible shifts. - Help in the radiological examination of the chest, if necessary to control the position of the ET. - Minimize leverage and airway traction by suspending ventilator tubing from overhead holders, using flexible catheter swivel mounts, and supporting tubing during rotation, aspiration, and ventilator disconnection and reconnection. - Check secretions for color, quantity and consistency. - Perform oral care. - Monitor for decreased exhaled volume and increased inspiratory pressure in patients receiving mechanical ventilation. - Implement measures to prevent extubation. - Prepare additional intubation equipment and an ambu in a readily available location.

Nursing intervention (NIC) Management of basic acid balance: respiratory alkalosis (1914)
Activities: - Keep airway permeable. - Monitor respiratory status. - Keep IV access permeable. - Reduce oxygen consumption. - Manage sedation to reduce hyperventilation. - Monitor venous blood gas trends to determine efficacy of interventions. - Monitor for worsening symptoms of respiratory alkalosis. - Obtain samples for laboratory analysis of basic acid balance. - Place the patient to facilitate adequate ventilation. - Water balance. - Monitor for the presence of cardiopulmonary manifestations of respiratory alkalosis (arrhythmias, decreased cardiac output). - Facilitate stress reduction. - Provide frequent oral hygiene.

Table 2 NCP of the deterioration of gas exchange in the patient diagnosed with COVID-19

Despite providing continuous care, the evolution of the disease was not satisfactory as in the following days the patient presented a progressive deterioration in his health condition which led to his death; this coincides with different studies showing that people with COVID-19 with comorbidities are more at risk of developing complications which end in a fatal outcome.

Discussion

Alteration of gas exchange was one of the most frequent nursing diagnoses in patients with SARS-CoV-2, and at the beginning of the pandemic it caused a large percentage of deaths, a situation that has currently changed since its frequency has decreased thanks to vaccination.

Globally, as of May 2023, approximately a total of 13,350,487,934 vaccine doses have been administered and 765,903,278 confirmed cases of COVID-19 have been reported and of which 6,927,378 correspond to deaths, as reported by the WHO (World Health Organization, 2023).

However, it is important to mention that in addition to vaccination, a series of actions have contributed not only to prevention, but also to providing care to the population during the pandemic through the training of nursing staff in: use of medical equipment. protection, techniques for the care of critical patients, in addition to collaborating in the reconversion of COVID-19 hospitals, participating in the communication of patients with their families through electronic devices, courses for the development of resilience, to mention a few.

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However, even now there are areas of opportunity in relation to post-COVID conditions in patients and health personnel who present Bournot syndrome, these becoming new areas of opportunity.to implement health strategies, and thus continue providing quality care to users (Danesh, Garosi, Golmohamadpour, 2021), (Roberts, Kelly, Lippiett, Ray, Welch, 2021).

The current challenges derived from the pandemic are the physical and emotional rehabilitation of patients with long COVID or post-COVID-19 syndrome, as well as health personnel and the restructuring of health services to be prepared for a future pandemic, as well as reduce barriers to access to health (Bauer S, Eglseer D, Hödl, 2020), (Løkke, F. B, et al, 2023), (Pujolar G, Oliver-Anglès A, Vargas I, Vázquez, 2022), (Yong,2021), (Zhang, 2023).

Conclusion

When the patient with a diagnosis of COVID-19 is admitted to the ICU, the critical care nurse specialist becomes a leader in providing care. Thus she plays a very important role in patient management, therefore putting her theoretical and practical knowledge on trial, the management of a critically ill patient involves specialized care whose objective is to provide quality care aimed at improving and maintaining health. The implementation of NCP, such as the one developed in this study, allows improvement in the planning of nursing care to be provided to critically ill patients with a diagnosis of deterioration of gas exchange due to SARS-CoV-2.

Conflict of interest

The authors have no conflicts of interest to declare.

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Levels of depression in pregnant women attending the Ticul community hospital, Yucatan, Mexico

Niveles de depresión en mujeres embarazadas que acuden al hospital comunitario de Ticul, Yucatán, México

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Abstract

Objective. To describe levels of depression in pregnant women treated at the Ticul community hospital, Yucatan, Mexico. Methodology. Cross-sectional design. The participants were pregnant women who attended their prenatal check-ups at the community hospital in Ticul, Yucatán, Mexico, to whom the Aron T. Beck Depression Inventory (BDI-II) was applied. Results. 121 pregnant women participated. The age range was from 16 to 42 years old. 81.5% of pregnant women were in the third trimester of pregnancy. 85% presented levels of depression with ups and downs considered normal, 5% mild disturbance in mood, 10% presented levels of depression located between intermittent states of depression, moderate depression and severe depression which are indicators that it can need professional help. Contribution. This study contributes with results that show that levels of depression occur during pregnancy that may require professional support as preventive measures for serious complications.

Level, Prenatal, Preventive

Resumen

Objetivo. Describir niveles de depresión en mujeres embarazadas atendidas en el hospital comunitario de Ticul, Yucatán, México. Metodología. Diseño transversal. Participaron mujeres embarazadas que acudieron a sus controles prenatales al hospital comunitario de Ticul, Yucatán, México, a quienes se aplicó el inventario de depresión de Aron T. Beck (BDI-II). Resultados. Participaron 121 mujeres embarazadas. El rango de edad fue de 16 a 42 años. El 81.5% de las embarazadas se encontraba en el tercer trimestre de gestación. El 85% presentó niveles de depresión con altibajos considerados como normales, el 5% leve perturbación en el estado de ánimo, el 10% presentó niveles de depresión situados entre estados intermitentes de depresión, depresión moderada y depresión grave los cuales son indicadores de que puede necesitar ayuda profesional. Contribución. Este estudio contribuye con resultados que demuestran que durante el embarazo se presentan niveles de depresión que pueden requerir de apoyo profesional como medidas preventivas de complicaciones graves.

Nivel, Prenatal, Preventivo

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Introduction

Pregnant women are considered a vulnerable group, as they are susceptible to various life-threatening morbidities and complications during pregnancy. The causes of depression in pregnancy have been little studied, compared to the study of biological causes, of which the scientific literature has published extensively. Although pregnancy is considered a physiological stage in a woman's reproductive life, the chemical and biochemical changes that occur during pregnancy, as well as the influence of the unfavourable context and environment in which the pregnant woman lives, influence her mood, which can lead to depression. Among the main morbidities related to mental health in pregnant women, depression is the most prevalent, affecting more than 13% of them (1).

Depression is a state of mind in which feelings of sadness, frequent crying, social distancing, among others, predominate and can last for weeks or months. Major depression or major depressive disorder (MDD) is a debilitating illness characterised by a feeling of profound sadness, diminished interest, impaired cognitive functions and vegetative symptoms, such as disturbed sleep or appetite. All these symptoms can affect pregnant women and cause disability (2, 3).

Depression is a global problem, responsible for more "annual losses" due to disability than any other condition.

Disability than any other condition; because so many people suffer from it, an estimated 350 million according to the World Health million, according to the World Health Organisation; when ranked by disability and death combined, depression is the death combined, depression ranks ninth behind heart disease, stroke and HIV.

Stroke and HIV. However, depression goes undiagnosed and untreated due to a lack of effective therapies and resources.

Effective therapies and inadequate mental health resources (4).

Depression in pregnant women may be present during pregnancy, childbirth and postpartum. In the latter stage, depression has been most studied. However, among the three trimesters of pregnancy, the prevalence is highest during the second and third trimesters. According to CDC reports, the rate of women with depression at the time of delivery increased 7-fold between 2000 and 2015 (5).

In Mexico, it is one of the most prevalent mental disorders and the leading cause of disability (6).

(6); and it has been reported that 2 out of 10 women have depression in pregnancy, which is not diagnosed in a timely manner. Women living in rural areas find it more difficult to seek help for the diagnosis of depression, due to a lack of resources, both in terms of personnel who can apply the instrument and specialised personnel who can confirm the diagnosis of depression. There are validated instruments that can be applied to pregnant women to help the doctor diagnose depression, such as the Beck Depression Inventory (7).

The objective of this study is to describe the levels of depression in pregnant women residing in rural communities in the State of Yucatan, Mexico.

Methodology

A cross-sectional survey-type study was designed. Pregnant women were selected for consultations at the community hospital in the municipality of Ticul, Yucatán. This hospital is attended by pregnant women from the municipal capital and its commissariats; in addition, the hospital provides consultations to pregnant women from other municipalities and commissariats located in the same southern region of the state of Yucatán. The instrument applied to detect levels of depression in women was the Beck Depression Inventory (BDI), developed to assess the severity of depression in normal and psychiatric populations; it is based on the theory of negative cognitive distortions as a central element of depression (7).

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The questionnaire was administered to each of the women participants after informed consent was requested and signed voluntarily. The version of the questionnaire used was the BID-II, which contains 21 items on a 4-point scale from 0 (no symptoms) to 3 (severe symptoms). It does not assess anxiety symptoms, but does assess affective, cognitive, somatic and vegetative symptoms, reflecting major depression. Scoring is achieved by summing the highest scores for the 21 items. The minimum score is 0 and the maximum score is 63. Higher scores indicate greater symptom severity. In non-clinical populations, scores above 20 indicate depression (8). For diagnostic levels of depression for the purposes of this study, scores of 0 to 10 indicated ups and downs considered normal, 11 to 16 indicated mild mood disturbance, 17 to 20 indicated intermittent depressive states, 21 to 30 moderate depression, 31 to 40 severe depression, and over 40 indicated extreme depression (9). Persistent scores of 17 points or more were indicators for professional help. Scores for each participant and the total were summed to classify them by level of depression. Percentages of depression levels were calculated.

Results

A total of 121 pregnant women from 12 communities in the southern area of the state of Yucatan, who attended the community hospital for prenatal care, participated. The women came mainly from the municipalities of Ticul and Tekax, with 23.14% and 22.21%, respectively (Fig. 1, Table 1).

Key-municipality	No	%
Chapab-018	3	2.48
Chumayel-024	3	2.48
Dzán-025	9	7.44
Mama-046	3	2.48
Maní-047	9	7.44
Muna-053	9	7.44
Oxkutzcab-056	9	7.44
Sacalum-062	3	2.48
Santa Elena-066	9	7.44
Teabo-075	9	7.44
Tekax-079	27	22.31
Ticul-089	28	23.14
TOTAL	121	100

Table 1 Number of participating pregnant women by municipality in Yucatan, Mexico

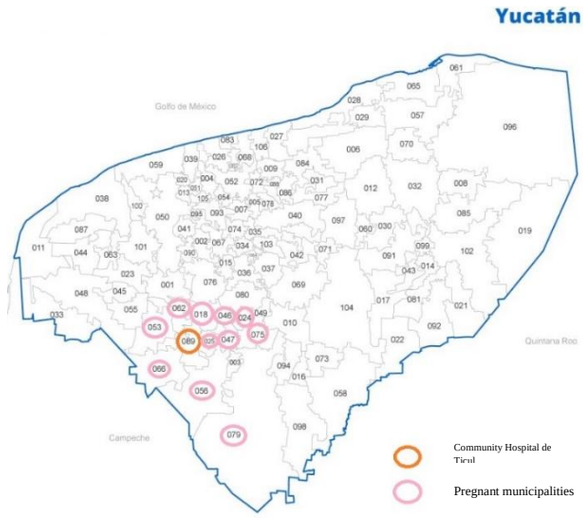

Figure 1 Map of the state of Yucatan. Location of the community hospital and participating pregnant municipalities

Among the socio-demographic characteristics of the pregnant women, the age range was 16 to 42 years, with 85% in the 15 to 34 age groups; 90% were housewives, 41.32% had completed basic education and 58.68% were married (Table 2).

Feature Age	No	%
15-19	24	19.83
20-24	27	22.31
25-29	27	22.31
30-34	25	20.66
35-39	13	10.74
40 y +	5	4.13
TOTAL	121	100
Occupation	**No**	**%**
Employee	8	6.61
Housewife	109	90.08
Student	4	3.31
TOTAL	121	100
Schooling	**No**	**%**
Primary	24	19.83
Secondary	50	41.32
Prepa	37	30.58
Professional	10	8.26
TOTAL	121	100
Marital Status	**No.**	**%**
Married	71	58.68
Single	46	38.02
Free Union	4	3.31
TOTAL	121	100

Table 2 Socio-demographic characteristics of pregnant women participants

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Regarding the stage of gestation of the women at the time of the interview, the highest percentage corresponded to those in the third trimester of pregnancy with 81.82%; and there were no primigravidae (Table 3).

Weeks of pregnancy	No	%
First Trimester (1-13 weeks)	0	-
Second Trimester (14-27 weeks)	22	18.18
Third Trimester (28-40 weeks)	99	81.82
Total	121	100

Table 3 Stages of pregnancy of participating women

The average number of antenatal visits per pregnant woman was 3 in the second trimester and 4 in the third trimester; and on average they had had 2 children (Table 4).

Weeks of pregnancy	Number of enquiries	Average
1-13 (First Quarter)	0	0
14-27 (Second Quarter)	46	3.07
28-40 (Third Quarter)	320	4.85
Average number of children= 2		

Table 4 Number and average number of consultations by trimester of participating pregnant women. Ticul, Yuc.

In relation to the diagnosis of depression in women, 85.12% were found to have ups and downs considered normal; but 5.79% had moderate depression and 1.65% had severe depression (Fig.2).

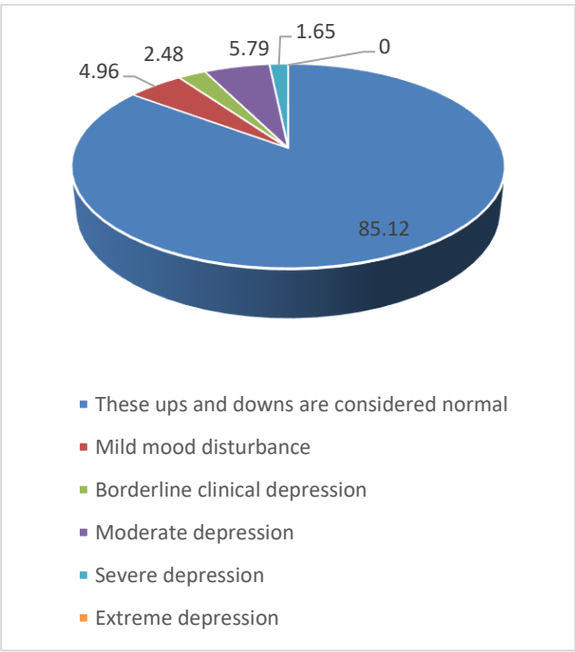

Figure 2 Percentages of depression levels in pregnant women in Ticul, Yuc. 2022

Conclusions

The present study aims to contribute to the diagnosis of depression levels in rural pregnant women who attended prenatal consultations at a community hospital in Yucatan. The results showed that depression is present in pregnancy, even in pregnant women under 18 years of age. Considering that there has been an increase in early pregnancies, the risk of depression in the population increases, and as such, the risk of more serious complications as a consequence, such as suicide, which is linked to depression (10). The state of Yucatan ranks number one in suicides among all the states of the Mexican Republic, so it will be very important to direct the actions of timely diagnosis for suicide prevention. It is also important to carry out more studies in pregnant women to identify this mental disorder in time for its treatment. Although in this study most of the women were found to be within normal parameters, there were 15% in states of depression; and almost 8% were found in moderate to severe states, which put the women at risk of suffering incapacity to perform in daily life as socially adapted persons for their family, work and coexistence. Routine screening for depression in pregnancy will be of great preventive importance, as has been suggested in recent studies (11).

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Parents' knowledge of nutritional labeling and its impact on food choices

Conocimiento de los padres de familia sobre el etiquetado nutricional y su impacto en la elección de alimentos

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Abstract

The nutritional label is a tool that helps parents to make decisions about their eating plan, in order to make safe purchases. The objective was to analyze the knowledge that parents have about nutritional labeling and its impact on food choices, for which an observational, prospective and analytical study was used. A questionnaire made up of 14 questions was applied to 36 settlers from a community in the State of Zacatecas. As a result, it was obtained that 97% do know the nutritional information table, and of these 69% if it seems important to read and understand the label, which influences when making the choice of food purchases, more than half of the population considers that the current design greatly favors reading. It was concluded that although the majority of the population already knows it, it is of vital importance that the totality of this, in addition to knowing it, fully understand it and take into account all the nutrients or substances that may harm it and thus be able to choose the best products for their diet and that of the family and thus have a better nutritional status.

Knowledge, Nutritional Labeling, Food choice

Resumen

La etiqueta nutricional es una herramienta que ayuda a los padres de familia a tomar decisiones acerca de su plan de alimentación, con el fin de realizar compras seguras. El objetivo fue analizar el conocimiento que tienen los padres de familia sobre el etiquetado nutricional y su impacto en la elección de alimentos, para eso se utilizó un estudio de tipo observacional, prospectivo y analítico. Se aplicó un cuestionario conformado de 14 preguntas a 36 colonos de una comunidad del Estado de Zacatecas. Como resultado se obtuvo que el 97 % si conoce la tabla de información nutricional, y de estos el 69% si le parece importante leer y entender la etiqueta, la cual influye a la hora de realizar la elección compras de alimentos, más de la mitad de la población considera que el diseño actual favorece mucho a la lectura. Se concluyó que aunque la mayoría de la población ya la conoce es de vital importancia que el total de esta además de conocerla, la entiendan completamente y tomen en cuenta todos los nutrientes o sustancias que puedan llegar a perjudicar y así poder elegir los mejores productos para su alimentación y la de la familia y con ello tener un mejor estado nutricional.

Conocimiento, Etiquetado Nutricional, Elección de alimento

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Introduction

The World Health Organization (WHO) recommends promoting a healthy diet for the control and prevention of chronic diseases, which can go hand in hand with the implementation of nutritional labeling on foods. There is evidence that people have little nutritional knowledge and this means that at the time of purchase they are not guaranteed to obtain products that have macro and micro nutrients necessary for a good diet (Millán, Núñez & Riveros, 2023).

The Food and Agriculture Organization of the United Nations (FAO) (2021) promotes the use of food labels as an effective way to protect the health of consumers in terms of food safety and nutrition (Martín-López & Fillol-Mazo, 2021). Food labeling provides information about the product and its contents, as well as instructions on how to handle, prepare and consume it safely. With the increase in global trade and the reduction of the direct relationship between food producers and consumers, there is a need for reliable food labels (García, 2021).

The importance of labeling food products lies in raising awareness of their high fat, sugar, sodium and low nutritional content, since most of them use a large amount of preservatives. According to studies, consuming processed foods is one of the primary factors for overweight and obesity. According to the Medical College of Mexico (2018), the consumption of ultra-processed foods in Mexico: has a high impact since the country in Latin America ranks first in the consumption of sugary drinks, snacks, snacks, cereals and sweets due to its high consumption. On average, each person consumes around 214 kilos of these products per year (Franco, 2020).

Inadequate use of the foods that are available and making the wrong decisions about how to consume them is due to sociocultural factors, such as ingrained customs, habitual lifestyles, and culinary or food traditions. In addition, economic, social, political and cultural conditions also influence the food problem. Another important factor is the lack of education on dietary issues to promote healthy habits and a healthy life.

Despite the lack of resources in many poor countries to access food in a safe and stable manner, it is of concern that many families, due to lack of information, spend their limited resources on food products that lack nutritional value. For example, bottled soft drinks, junk food and foods with intense flavors, which may satisfy the palate, do not provide the necessary nutrients and serve only to deceive the organism (Montaño, 2023).

Therefore, many countries have implemented different types of labeling, seeking to provide a complete, clear and very easy to understand tool for the entire population, without differentiating socioeconomic strata and seeking to impact in order to contribute in a favorable way to the health of the population in general. This work seeks to investigate the knowledge and understanding of nutritional labeling by parents, in addition to the use they make of it when choosing and buying their food.

Nutritional knowledge

Among the capacities that human beings possess is knowledge, since it allows them to understand the nature of their environment, the relationships between things and their qualities through reasoning. Knowledge can be acquired in different ways: one of them is "a priori"; this means that it is independent of experience and only reasoning is required to obtain it. On the other hand, knowledge can also be obtained "a posteriori", but in order to acquire it, experience is necessary (Tolentino-Mayo et al., 2018).

Nutritional knowledge provides a guideline for people to understand the different components of food, such as essential macro and micro nutrients, fats, carbohydrates, proteins, vitamins and minerals. It also provides an understanding of how these nutrients can affect health, well-being, physical and cognitive performance.

By incorporating nutritional knowledge when purchasing food products, one can select foods that meet individual family nutritional needs and thus have a healthy, complete and balanced diet.

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Nutritional knowledge plays a fundamental role in the interpretation and application of nutritional information on food labels, which is why it is necessary to have a solid foundation of nutritional knowledge in order to make healthy choices and select products that fit individual and family needs.

On the other hand, ignorance of nutritional guidelines can lead to misinterpretation of labels, which can result in poor choices of shelf-stable products for human consumption. Thus, nutritional knowledge plays a crucial role in food choices. A study by Spiteri-Cornish & Moraes (2015) found that when people have poor nutritional knowledge, they tend to make unhealthy choices, despite having the motivation and opportunity to choose healthy products. Likewise, even in cases where consumers have high nutritional knowledge, label consultation is still maintained to make informed food choices. This provides further evidence of the importance of nutrition knowledge in promoting healthy eating habits.

Nutritional knowledge contributes to the modification of healthy habits but that does not mean that it changes eating habits, food in their labels alone should provide information to the consumer useful and easy to understand, without complications for the choice of food, nutritional knowledge has a significant impact on three fundamental stages: the understanding of the nutritional information present on the labels, the proper reading of such information and, finally, its practical application in daily life (Sanchez, 2018).

If a parent is nutritionally literate, he or she is more likely to consult, read and use the information on food labels to make purchasing decisions. In addition, the information summarized on labels can help consumers understand and compare the nutritional differences between various products. According to a study by Savoi et al. (2013), it was found that between 39% and 49% of the participants stated that front labels had changed their perception of a healthy diet.

Therefore, the nutrition label can favor the mother or father of the family, even educate them to improve their knowledge and understanding, it is also mentioned that there must be understanding of the information that is being read on the labels, because this will allow when selecting a food to already have the knowledge based on the contribution that this will have to the body and will result in an individual and family benefit (Sanchez, 2018).

Food choices are influenced by several factors that may vary depending on the stage of life of a person and also of an individual or group of people. Therefore, there is no single intervention that guarantees success in all population groups to modify this behavior, it is necessary to carry out different interventions aimed at different population groups, considering the many factors that influence their decisions when choosing food (Jáuregui et al., 2020).

Nutritional labelling

The nutrition label can be considered as an important tool to help mothers and fathers to make conscious and comprehensive decisions about their food plan, in order to improve the choice of food for consumption and thus have better quality of life. In recent times people are interested in knowing what they consume and that allows that at the time of choosing products of all kinds the label is consulted, and in the case of food is greater concern to see the nutritional contribution, also in this choice are considered those foods that do not involve favoring the development or increase the prevalence of chronic degenerative diseases such as diabetes mellitus and systemic hypertension, being the main risk factor the presence of overweight and obesity from an early age (Martínez-Ramos, 2018).

Nutrition labeling refers to the information provided to the consumer on the nutritional properties of a food product, which can be found on food and beverage containers or packaging. Nutritional labeling consists of three essential components that must be identified:

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A) **Table of nutritional information**: This section indicates the energy value and nutrients provided by the food per serving, specifying the amounts of proteins, fats, carbohydrates, fiber, sugars, vitamins and minerals present in the product, using the international system of equivalents, and can be shown in grams, milligrams and/or per piece (see image 1), this is very useful for those people who have allergies, intolerance or dietary restrictions; B) Front labeling: is a system designed to promote a better healthy choice in industrialized foods, with the aim of improving the health of the population facing increasing problems of overweight and obesity, and C) List of ingredients: this section shows the list of ingredients contained in the product, in descending order according to their quantity, also a distinction is made between total and added sugars so that the parent can identify the amount of sugars that have been added by the manufacturer, which are those that have health risks (Martinez-Ramos, 2018).

Información nutricional
Tamaño de la porción 1/4 de taza (113 g)
Porciones por envase 8

Cantidad por porción	
Calorías 100	Calorías de las grasas 20
	% de valor diario *
Grasa total 2g	**3%**
Grasas saturadas 1.5g	**7%**
Grasas *trans* 0g	
Colesterol 10mg	**3%**
Sodio 460mg	**19%**
Total de carbohidratos 4g	**1%**
Fibra 0g	**0%**
Azúcares 4g	
Proteína 16g	
Vitamina A 0% •	Vitamina C 0%
Calcio 8% •	Hierro 0%

*Los porcentajes de valores diarios se basan en una dieta de 2.000 calorías

Image 1 Nutritional table of foods
Source: Bialab, 2023.

In Mexico as of 2014, guidelines were implemented requiring food and non-alcoholic beverage products to include certain information on the front of the packaging. These guidelines also established the creation of a manual containing reference values for nutrients and energy. The objective was to provide clear and transparent information on the nutritional content and energy intake of prepackaged foods and beverages to the consumer.

The modification to the labeling came into force in 2015, establishing that the front-of-package labeling of industrialized foods and beverages (EFABI) is based on the daily dietary guidelines (GDA), since then, this type of labeling is in use (Tolentino-Mayo et al., 2018).

Front-of-pack labeling of industrialized foods and beverages (EFABI) is regulated by Mexican Official Standard-051. Effective until October 2020. The labeling information in terms of GDAs is presented on the front of industrialized food products and the information it contains in terms of nutrients is: saturated fat, other fats, total sugars, sodium and energy.

The system used for this has been the subject of many observations since its design, since it is based on intake percentages that are calculated based on a diet of 2,000 calories for a healthy adult; however, these percentages are exaggerated for populations with lower energy requirements, as in the case of children. Furthermore, this system establishes a fixed limit of 90 grams of sugar, despite the fact that the WHO recommends consuming less than 10% of total calories in the form of sugars, which is equivalent to approximately 50 grams for an adult. This system has proven to be difficult to understand, as it requires people to have knowledge of nutrition and certain mathematical skills. Several investigations have been conducted to determine the usefulness of the GDA label, but very few of them have evaluated its comprehensibility in an objective manner. However, objective studies show that a smaller proportion of people understand this information, which may be explained by the ability to understand such information and assign a value to it in relation to other necessary elements, such as knowledge (Tolentino-Mayo et al., 2021).

New labeling in Mexico

As a result of the obesity epidemic, new public policies have emerged that aim to improve the population's diet through the use of food nutrition labeling strategies. The Front-of-Food Labeling System (FFLS) has been identified as a relevant intervention to ensure the promotion of healthier diets. This strategy has proven to be effective in informing consumers to make healthier choices.

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In 2017, the Mexican Ministry of Health requested the National Institute of Public Health to form a trained staff or group of experts in food and beverage labeling, who issued a series of recommendations that resulted in the new nutrition warning labeling (Kaufer-Horwitz et al., 2018).

The implementation of this labeling on food and beverages began in October 2020 as a result of the modification to the Mexican Official Standard 051-SCFI/SSA1-2010 on labeling. This modification was published in the Official Journal of the Federation in March 2020. This standard establishes the requirements for a system of front-of-package warning labeling for prepackaged foods and non-alcoholic beverages, with the objective of informing consumers about nutrient ingredients that represent a health risk, such as sugars, saturated and trans fats, sodium and calories.

The EAN was developed as a tool to provide quick and easily understandable visual insights that enable consumers to identify unhealthy food products and, therefore, help them make better food choices.

The EAN takes reference values based on the amount of energy (calories) and the four so-called critical nutrients (CN) (free sugars, saturated fat, trans fat and sodium) provided by 100 g or 100 ml of the product, as these nutrients are considered risk factors associated with Chronic Non-Communicable Diseases (NCDs) (see Figure 16).

Figure 2 Warning labeling and characters aimed at children's audiences
Source: Public Health Institute, 2021

The EAN includes a warning stamp for each excess NC, however, foods packaged with a small display surface (packaging) do not include an individual stamp for each critical nutrient in excess, they only include an individual stamp with the legend "n stamps" (n = number of excess NCs) (see figure 2).

Figure 3 Warning labeling and characters aimed at children's audiences
Source: Public Health Institute, 2021.

Products for children that have warning seals or sweetener legends are prohibited from having persuasive elements on their packaging, such as: children's characters, brand mascots, drawings, celebrities, athletes or other interactive elements.

With the new labeling, the list of ingredients is maintained, but a modification is introduced in the way the different types of sugar are presented. These are now grouped under the label "added sugars", followed by a list in parentheses specifying the names of the added sugars present in the product. This change is intended to give the parent the ability to more clearly identify the sources of unknown sugars in the product. This information can be found in the new table or nutrition declaration.

Methodology to be Developed

A descriptive, observational, cross-sectional study was conducted in a community called Tabasco in the city of Zacatecas, Zacatecas, a simple random probability sampling was used, 36 parents between 21 and 70 years of age, sex indistinct, living in the community and who signed informed consent to participate in the study were included.

An instrument was applied which was distributed via WhatsApp to the participants in Google Forms formats, this due to the social distancing that was being experienced. An informed consent form was included at the beginning of the form so that people could express their interest in participating in this study.

Ethical considerations

The present study complies with the considerations of the Nuremberg Code of 1947, which speaks of the voluntary consent of the subject, the person involved has the legal capacity to give consent,

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The results obtained were carried out with the purpose of being fruitful for the good of society. The study will avoid unnecessary physical or mental harm. Also adhering to the universal declaration on bioethics and human rights, article 3 of human dignity and human rights, where human dignity, human rights and fundamental freedoms will be fully respected. According to the General Health Law on Health Research of the United Mexican States, this study is considered to be of no risk.

Results and Discussion

Labeling, as already mentioned, is a fundamental tool for people to make conscious decisions about the food they are going to consume and what they need to buy. Over time, changes have been made worldwide in food labeling systems, in order to make them more understandable (Kobayashi, Tolentino & Torres, 2022).

This labeling seeks to facilitate the interpretation of nutritional information in order to have healthy eating habits, the concern is whether parents have the necessary knowledge to understand and make the best decisions when buying the food that will be put on the table of their children.

There are works that have been done in recent years and have left in evidence the significant gap in terms of knowledge that parents have about this new nutrition labeling (Reyes, Perales & Zamora, 2023), this is of concern because parents play a crucial role in the choice of foods that children consume, then they should be the ones who understand the importance that can provide them with the new labels, as this will allow them to buy healthy products (Reyes, Perales & Zamora, 2023), this is of concern because parents play a crucial role in the choice of foods that children consume, then they should be the ones who understand the importance that can provide them with the new labels, as this will allow them to buy healthy products (Reyes, Perales & Zamora, 2023).

The objective of this study was to determine the knowledge that mothers and fathers have about nutrition labeling and its impact on food choices. In this study, 36 responses were obtained from parents, of which 19 were men and 17 were women.

	Frequency	Percentage	Cumulative percentage
Female	17	47.2	47.2
Male	19	52.8	52.8
Total	36	100-0	100.0

Table 1 Respondents to the survey to obtain percentages by sex
Source: Own elaboration based on data collection.

The ages of the parents who participated were grouped into five ranges as shown in Table 2, it was found that the largest number of people who answered the form were from 21 to 30 years old, with a percentage of 33.33%, followed by ages 41-50 years old with 30.55%.

	Frequency	Percentage %	Cumulative percentage
Between 21 and 30 years old	12	33.33	33.33
Between 31 and 40 years old	8	22.22	55.55
Between 41 and 50 years old	11	30.55	86.1
Between 51 and 60 years old	4	11.1	97.2
Between 61 and 70 years of age	1	2.77	99.97
Total	36	100%	

Table 2 Respondents by age range
Source: Own elaboration based on data collection.

Of the people who filled out the survey, 5.55% mentioned that they did not attend school, 66.67% only finished elementary school, 19.45% finished high school, 2.77% had a technical career and only 5.55% had a bachelor's degree. It was considered as a requirement to answer the survey that they were parents, we sought to know if they had children under 18 years of age seeking to know if the knowledge of this labeling also influences the feeding of minors as mentioned in their work Serrano & Beltran (2020), they state that mothers exert a strong influence on the weight of their children and are concerned about the eating behaviors of these; and that parents also play a role in the imposition of child feeding practices.

In this study, 86.2% of parents have children under 18 years of age and only 13.8% do not, which may mean for this study that most parents have knowledge of the labeling that influences the feeding of children.

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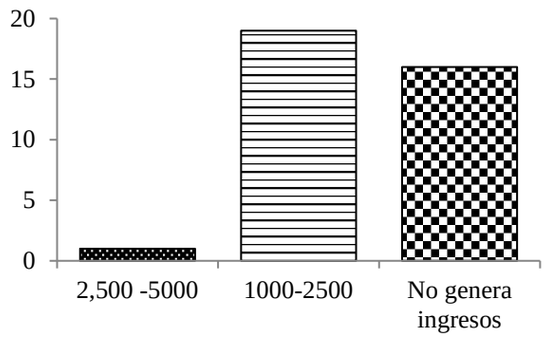
Another factor that can affect the choice of food leaving aside the knowledge is the price, 53% of respondents have a weekly income of between 1000 and 2500 which is considered a minimum wage in Mexico, 44% do not generate weekly income and the remaining 3% generate a weekly income that is between 2500 and 5000 pesos (Graphic 1).



Graphic 1 Household income
Source: Own elaboration based on data collection

They were also asked whether or not they know the nutritional information table or label, 97% said they knew the label and only 3% said they did not (see table 3).

	Frequency	Percentage	Cumulative percentage
If known	35	97	97
Do not know	1	3	3
Total	36	100	100

Table 3 Respondents to the survey to draw percentages by gender
Source: Own elaboration based on data collection.

In Mexico, labelling for pre-packaged food and non-alcoholic beverages of national or foreign manufacture, which are marketed in the country, is mandatory according to NOM-051-SCFI/SSA1-2, which is responsible for establishing the commercial and health information that these products must contain. Based on this, they were asked whether the population is indeed aware that packaged foods must contain a nutritional table, 89% said that they are aware of this and 11% are totally unaware of this information.

When asked if the nutritional table is read when purchasing food, 81% said they do read it and 19% do not, this coincides with the data of the Ministry of Health and Social Development of the Nation within the 2nd National Survey on Nutrition and Health (2019), where it is mentioned that only a third of the population reads nutritional labels and also mentions that of that percentage only half of them manage to understand the information.

Also of the 81%, 69% mentioned that the information contained is of valuable importance and does influence in such a way that it is taken into account during their food choices, however, 31% of the interviewed population, although they read the label, do not take it into account when choosing the food that will be taken home for consumption.

Of the 69% mentioned above, when asked if they agree on the importance of reading and understanding the nutrition facts table in order to choose an appropriate, healthy product, they responded that they totally agree.

As for the people who said they read the nutritional table, they were asked which are the foods or groups of foods on which they most concentrate their reading. Table 4 shows the groups they were provided with, among which were: meats, legumes, dairy products, cereals, etc.

	Frequency	Percentage
All	6	16.67
Some	0	0
Meat	0	0
Legumes	0	0
Bread	0	0
Dairy	5	13.89
Cereals	3	8.33
Preparations	0	0
Delicatessen	0	0
Other	6	16.67

Table 4 Foods where the nutritional table is most often read
Source: Own elaboration based on data collection.

It was found that 30% of these people reported reading the nutritional table of all foods, another 30% said they read it mostly in other foods not found within these options, 25% observed the table especially in dairy products, and 15% in the cereals group.

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We also asked about the current design of the nutritional label, if they consider that this favours the consumer's reading, 60% responded that the design of nutritional information is favourable, but 40% responded that this design is not favourable to them. When obtaining this information, three options were considered for the 40% who responded negatively, they were given three options to favour the reading of the labelling, one of them was to increase the size, another was the format and the last one was the location. The responses were that the best option would be to change the size, followed by the format.

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Conclusions

In this study, parents consider that reading the nutrition label does have an influence on their food choices; they consider the information provided to be of great importance.

Despite the fact that the majority of the population already knows the nutrition facts label, not all of them read it completely, most of them only look at some parts of the table, their main concern being the consumption of fats, followed by calories and carbohydrates.

This is why it is still a priority for the whole population to read and understand it completely, which will help them to make better decisions when choosing food, to be able to opt for a better product and thus achieve a better diet and therefore a better nutritional status for both parents and their children.

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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.

Nursing, Pain, Nonate

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 realizo 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.

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.

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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.

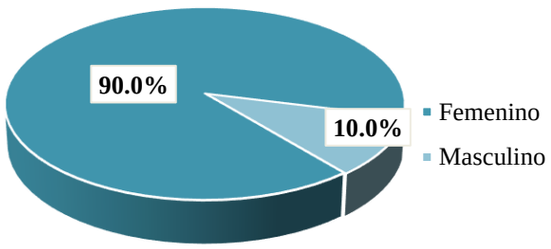
45.0% of the nursing staff do use pain measurement scales such as: PPIP (Premature Infant Pain Profile or Scale), NFCS (Neoanatal Facial Coding System), CONFORT Scale, EVA and/or WONG BAKER. Among the most common care or measures offered when identifying neonatal pain are: Allowing parental visits (cuddling,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

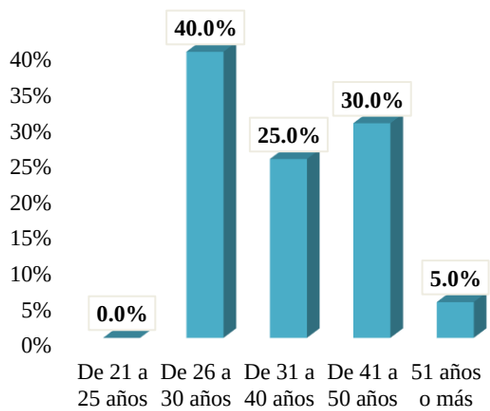
Socio-demographic variables

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

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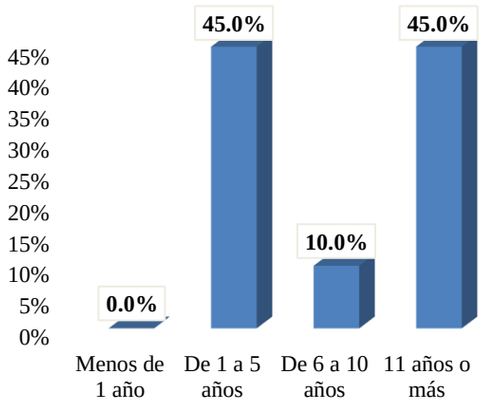
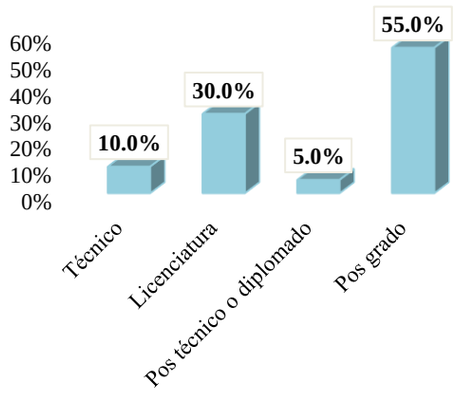
45.0% of staff have 1 to 5 years of experience in neonatal areas; the percentage is the same for staff with 11 or more years of experience. No experience of less than 1 year was found.



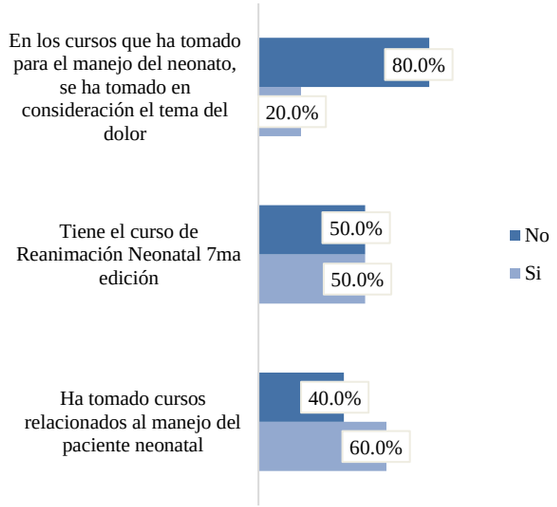
Graphic 3 Nursing staff experience in neonatal areas
Source: Own elaboration

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

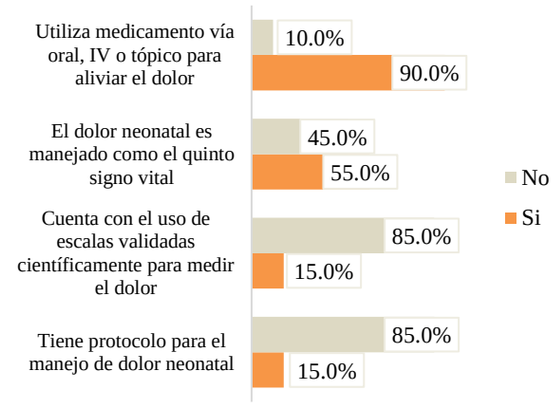
Graphic 5 shows that 20.0% of the nursing staff have taken courses on the subject of neonatal pain. 50.0% have taken the course on neonatal resuscitation 7th edition. 60.0% have taken courses related to the management of neonatal patients.



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.

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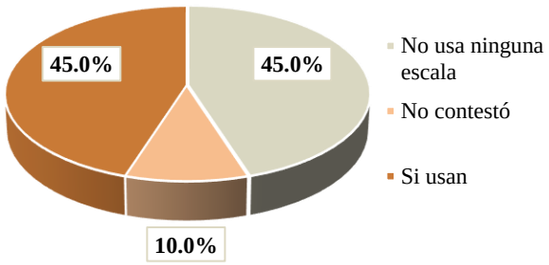

Graphic 7 Use of scale to measure neonatal pain, by nursing staff
Source: Own elaboration, 2019

Table 1 shows the scales commonly used by nursing staff.

PPIP (Premature Infant Pain Profile or Scale)	2
NFCS (Neoanatal 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 Kanguroo 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 Kanguroo 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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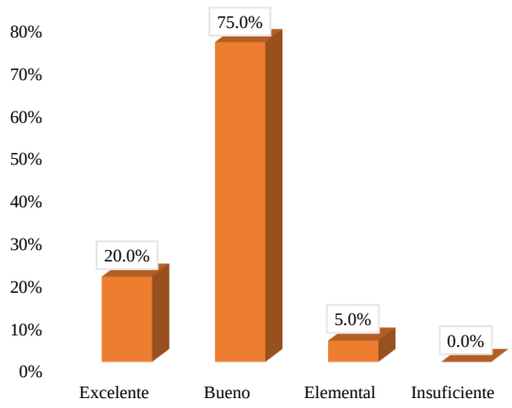

Graphic 8 Use of the neonatal pain rating scale by nursing staff.
Source: Own elaboration

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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Introduction

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General explanation of the subject and explain why it is important.

What is your added value with respect to other techniques?

Clearly focus each of its features

Clearly explain the problem to be solved and the central hypothesis.

Explanation of sections Article.

Development of headings and subheadings of the article with subsequent numbers

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Including graphs, figures and tables-Editable

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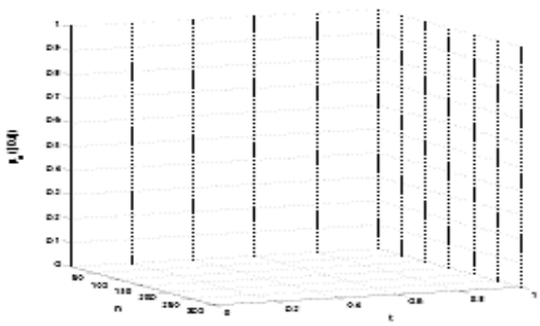

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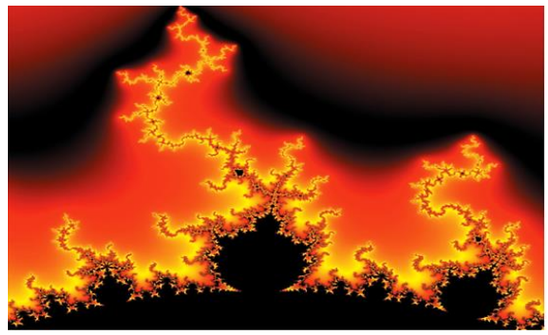

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