

Perceptions of the Neonatal Intensive Care Unit team and the nursery about newborn pain

Percepções da equipe de enfermagem da Unidade de Terapia Intensiva Neonatal e do berçário sobre a dor do recém-nascido

Larissa Caroline Bonato¹, Catia Cristiane Matte Dezordi¹, Cibele Thomé da Cruz Rebelato¹

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ABSTRACT

BACKGROUND AND OBJECTIVES: This study is justified by the interest of the area in question and the curiosity to know what methods and procedures are carried out on newborn pain, to help professionals and students to better understand the subject, in addition to showing the results obtained and help to improve care for this public. The objective of this study was to know the perceptions of nursing professionals working in the Neonatal Intensive Care Unit (NICU) and in the nursery about newborn (NB) pain and its management.

METHODS: A descriptive, exploratory study with a qualitative approach. Technicians, assistants, and nurses who worked for at least three months in the NICU and nursery units of a philanthropic hospital participated in the research. Professionals who were on leave due to vacation or leave of any kind during the study period were excluded. A semi-structured interview was used, and a data analysis was carried out according to the content analysis proposed by Bardin.

RESULTS: Twelve professionals, nine nursing technicians and three nurses participated in the research, of these, seven professionals working in the NICU and five in the nursery. From the analysis of the statements of the study participants, two categories emerged: perceptions of professionals regarding the identification and cause of pain in the NB; and NB pain assessment and management.

CONCLUSION: The present study reveals the importance of identifying pain in the NB and its effective management, as the lack of appreciation for it can lead to more stress for the NB. Crying was the main characteristic identified by professionals when there is a NB with pain or some discomfort, therefore, mainly non-pharmacological methods are used for relief. Effective management should be seen as an indicator of the quality of care provided, ensuring humanized care, free from damage and with quality.

Keywords: Neonatal nursing, Newborn, Pain, Pain management.

RESUMO

JUSTIFICATIVA E OBJETIVOS: Este estudo se justifica pelo interesse da área em questão e pela curiosidade de saber quais os métodos e procedimentos realizados sobre a dor do recém-nascido, a fim de auxiliar profissionais e estudantes a entenderem melhor sobre o assunto, além de mostrar os resultados obtidos para ajudar na melhora do cuidado deste público. O objetivo deste estudo foi conhecer as percepções dos profissionais de enfermagem que atuam na Unidade de Terapia Intensiva Neonatal (UTIN) e no Berçário acerca da dor dos recém-nascidos (RN) e seu manejo.

MÉTODOS: Estudo descritivo, exploratório, de abordagem qualitativa. Participaram da pesquisa técnicos, auxiliares e enfermeiros que atuavam, no mínimo, três meses nas UTIN e Berçário de um hospital filantrópico. Foram excluídos os profissionais que estavam afastados por motivo de férias ou licença de qualquer natureza durante o período do estudo. Utilizou-se a entrevista semiestruturada e a análise dos dados foi realizada de acordo com o proposto por Bardin.

RESULTADOS: Participaram da pesquisa 12 profissionais, nove técnicas de enfermagem e três enfermeiras, destes, sete profissionais atuam na UTIN e cinco no berçário. A partir da análise dos depoimentos das participantes do estudo, emergiram duas categorias: percepções dos profissionais quanto à identificação e causa da dor do RN; e avaliação e manejo da dor.

CONCLUSÃO: O presente estudo revelou a importância da identificação da dor no RN e o manejo eficaz, visto que a não valorização deste pode resultar em mais estresse para o RN. Notou-se que o choro é a principal característica identificada pelas profissionais quando se tem um RN com dor ou algum desconforto e que são utilizados principalmente os métodos não farma-

Larissa Caroline Bonato – <https://orcid.org/0000-0002-8430-2262>;
Catia Cristiane Matte Dezordi – <https://orcid.org/0000-0001-5540-4393>;
Cibele Thomé da Cruz Rebelato – <https://orcid.org/0000-0002-1875-8309>.

1. Rio Grande do Sul Northwestern State Regional University, Ijuí, RS, Brazil.

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HIGHLIGHTS

- Professionals' perceptions regarding the identification and cause of newborn pain
- Professionals' assessment and management of newborn pain
- Newborn pain

Associate editor in charge: Maria Belén Salazar Posso

<https://orcid.org/0000-0003-3221-6124>

Correspondence to:

Cibele Thomé da Cruz Rebelato

E-mail: ci_thome@hotmail.com



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cológicos para o alívio. O manejo efetivo deve ser visto como um indicador de qualidade da assistência oferecida, garantindo um atendimento humanizado, livre de lesões e com qualidade.

Descritores: Dor, Enfermagem neonatal, Manejo da dor, Recém-nascido.

INTRODUCTION

Pain is an unpleasant sensory and emotional experience associated with or similar to that associated with actual or potential tissue damage¹. In the newborn (NB), pain is also a complex, subjective and multidimensional phenomenon, accompanied by the challenge of the impossibility of verbal communication². In addition, much of the care provided to hospitalized NB includes invasive and painful interventions that can result in damage to the nervous system, which is still in formation².

For a long time there was a belief that NB were incapable of feeling or expressing themselves in the face of painful discomfort, but studies³ by the University of Oxford in the UK have allowed to break this paradigm by pointing out that NB are sufficiently capable of detecting and transmitting information about the presence of painful stimuli thanks to their nervous system, which develops progressively over time³.

The scientific literature encourages the assessment of neonatal pain using various instruments; however, these instruments still have their limitations as they rely on subjective indicators, such as behavioral and contextual parameters⁴.

Although some health professionals, especially nurses, recognize the occurrence of pain in the neonatal population, its assessment is still carried out empirically in care settings, especially through the isolated assessment of physiological and behavioral parameters, mainly crying².

In recent decades, it has been identified that NB have all the necessary components for pain perception, including anatomical, functional and neurochemical ones⁵. During their stay in hospitals, NB often undergo various painful and stressful procedures on a daily basis. Identifying, assessing and measuring pain in NB requires professionals to have scientific knowledge, as well as the sensitivity to prioritize quality of assistance⁶.

NB are exposed to several phenomena of discomfort and pain, both as a result of institutional standards for care and this type of work process, which can involve light, temperature, noise and handling. These factors can generate stress and pain. Included as the fifth vital sign, pain requires systematic assessment and monitoring, which are not simple, as professionals always need patient reports, an additional difficulty in the case of NB, added to the limits of pain assessment methods in NB⁷.

It is recognized that NB in pain show signs that identify the presence of pain or discomfort through both physiological and behavioral changes, in general: crying, facial expressions, changes in eating and sleep habits, muscle stiffness, changes in heart rate, respiratory rate, blood pressure and oxygen saturation⁸. Avoiding and minimizing the intensity of pain is important, not only for ethical reasons, but also because of the potential consequences of repeatedly exposing the NB to pain. These

consequences can include altered sensitivity, behavioral and physiological changes⁹.

The care needed to manage neonatal pain should include a physical assessment and pharmacological and non-pharmacological interventions that are effective in preventing and relieving pain in NB¹⁰. These include breastfeeding, skin-to-skin contact and non-nutritive suction, all of which have been proven to be effective and present a low risk for NB. These methods of pain relief are essential for ensuring qualified and humanized care for NB¹¹.

Despite the existence of interventions for the management and relief of NB pain, there is still a lot of controversy about the most effective way to treat pain¹² in this population. The lack of specificity in assessing NB pain reinforces the importance of adopting systematic methods to identify this pain². Thus, it is necessary to identify the perceptions and knowledge of health teams about neonatal pain management and to promote educational activities with the aim of providing knowledge and developing skills in the assessment and treatment of pain in NB. Due to the lack of specificity in the assessment of NB pain, this study is important in terms of supporting future research and actions in the health service to improve neonatal care in relation to proper pain management in the neonatal intensive care unit (NICU) and the nursery. In particular, as this is an individual who is unable to verbalize their pain, greater sensitivity, training and humanization are needed for more efficient and effective management, regardless of the hospitalization unit.

Therefore, considering some issues in the routine of the units that provide care to NB can facilitate the adoption of measures that include pain management, as these facilitators may be related to the knowledge and perceptions of health professionals and/or their practice, so this study had the following guiding question: "What are the perceptions of nursing professionals who work in the NICU and Nursery about pain in NB and its management"? Faced with this question, the present study's objective is to find out the perceptions of nursing professionals working in the NICU and nursery about pain in NB and its management. The aim is to support future research and actions in the health service and to improve neonatal care in relation to the proper management of pain in the NICU and nursery.

METHODS

This is a descriptive, exploratory study with a qualitative approach, carried out in the NICU and nursery of a philanthropic hospital, size IV, located in the southern region of Brazil, being a macro-regional reference for the *Missioneira* region of the state of Rio Grande do Sul for more than 120 municipalities, with a referenced population estimated at more than one and a half million people. This institution has 250 inpatient beds, 10 of which are in the NICU, including an isolation bed. The nursery has three beds.

Data collection took place between September and November 2021 and included technicians, assistants and nurses who had worked in the NICU and nursery for at least three months. The

reason for this period was that after three months' experience, professionals are more familiar with the sector, have more links and experience with the team and NB. Professionals who were away on vacation or on leave of any kind during the study period were excluded.

The NICU nursing professionals were invited to take part in the research during a team meeting and those who worked in the nursery were invited by the sector itself, by the researcher, who explained the topic, its objectives, how the data collection and interviews would be carried out. Of the 50 professionals working in the NICU and the nursery, 21 agreed to take part in the study, of which only 12 contacted the researcher to be interviewed. Participants were selected for convenience and the number was limited according to data saturation.

A semi-structured interview was used as the data collection technique. This instrument included specific sociodemographic elements for the professionals, as well as open questions in which the subjects had the opportunity to discuss the topic. The questions asked of the professionals included the length of experience of each professional, their opinion on NB pain, as well as their perception of the use of pain scales, the characteristics of a NB in pain and the interventions they use to ease the patient's pain.

The interviews were conducted by video and voice call via the Google Meet platform and lasted between five and 15 minutes on average. The professionals were identified in the study by the letter N for nurses and T for nursing technicians, NN and TN for those working in the Nursery, and NI and TI for those working in the NICU. All the acronyms are followed by a number established according to the order of the interviews carried out, thus maintaining the anonymity of the participants.

Content analysis was used to analyze the data, which began with listening to the interviews, followed by their full transcription. After transcription, the methodological path proposed by Bardin¹³ was followed: pre-analysis, in which all the data was read to obtain a sense of the whole; exploration of the material in which categories were defined by coding, which were not previously established and grouped by similarities; and treatment of the results in which the information was condensed and analyzed.

The research with the content identified was returned to the hospital's nursing team in a meeting, demonstrating the results obtained and an educational action regarding the nursing team's perceptions of NB pain management.

The project was approved by UNIJUÍ's Research Ethics Committee, Opinion Number: 4.932.467, CAAE: 49079021.0.0000.5350. Throughout the research, according to Resolution No. 466/2012 of the National Health Council, Ministry of Health, the Free and Informed Consent Term (FICT) was read and signed after the research had been presented and explained.

RESULTS

Twelve professionals took part in this study, nine nursing technicians and three nurses, all female, aged between 25 and 45.

Seven professionals worked in the NICU and five in the nursery. Of the 12 participants, nine have more than nine years' experience in nursing, one has between four and six years, and two have between one and three years of professional experience. As for their time working with NB, five of them had more than nine years of experience, one had between four and six years, and six had between one and three years. It can be seen that the study population has more than one year's professional experience specializing in neonatology.

From the analysis of the study participants' statements, two categories emerged: perceptions of professionals regarding the identification and cause of pain in the NB; and professionals' assessment and management of NB pain.

Professionals' perceptions of the identification and cause of newborn pain

When the participants were asked if they believed that NB felt pain, it was found that all of them recognized this fact, mainly because of the manipulation and invasive procedures to which they are exposed, but not all of them identified the physiological changes and the harmful effects of pain in the long term, according to the statements:

"[...] because of the handling, invasive procedures, puncture, catheterization, intubation, all that stuff" (TN 01).

"[...] they feel a lot of pain, I think because of the handling, invasive procedures" (TI 04).

"[...] the HGT sting that we do, the venous access, the punctures, so we see that they feel that pain, they cry, they have that reflex, the moment we're going to do any kind of invasive procedure that takes them out of their comfort too" (TN 02).

"[...] because of the handling, they're handled a lot, because we need to check their vital signs, there's the handling of the doctor, the physiotherapist, the speech therapist, so in a six-hour period, they're handled every two hours, so in the end sometimes it's not even because it's some diagnosis or some disease, but because they feel pain, they must feel it" (TN 06).

As for the apparent characteristics that NB express when they are in pain, health professionals report crying and facial expressions as the main ways in which NB show discomfort, according to the statements:

"[...] crying is more intense, it's a continuous cry... usually the baby cries and the mother offers the breast, to calm them down, and when it doesn't work, when she offers the breast and they let go and keep crying, and it's a strong cry, it's probably something related to pain, right?" (TI 04).

"We can identify pain by visualizing it, of course, they can't express it in any other way, it's like any other baby who doesn't communicate, right? So through the crying of those who aren't intubated, but even the intubated ones, with sedation, that's not so expressive, but the babies, we can see it through their facial expression, when they stretch, bend over, but it's more through their facial expression, their crying, and over time we can identify it" (TN 05).

“The first thing is that they moan, cry, twitch, get restless, with their arms and legs, these are signs that appear more often, that I could notice” (TN 11).

“Easy expression, changes in heart rate, respiratory rate, movement of the arms and legs, when they’re very agitated it’s because there’s something wrong and it’s often pain or stress, in short” (NI 09).

When the participants were asked about the management they used to relieve the NB’s pain, most of them mentioned non-pharmacological interventions, as identified in the following statements:

“Containment, right? Wrapping the baby, we do non-nutritive suction with glucose, when the baby can be held, they receive a cuddle, [...] mainly non-nutritive suction and containment and wrapping the baby” (TN 02).

“[...] as nurses, we take them on our laps, the ones that can be taken, right? The ones that aren’t intubated, we take them on our laps, we wrap them up, we try to calm them down, we put a warm water glove on them, we hold their little hand, these are comfort measures, now there are the little cuddly toys there too, which calm them down a lot. Comfort measures are what we can do, right?” (TI 10).

“Comfort measures, so that they are comfortable in the crib, in general that’s it [...] for comfort, we have a way of adjusting the crib, right, so that they get more comfortable, and we regulate the temperature of the crib so that they are warmer, we regulate the temperature, that would be it” (TN 11).

The reports show that the identification of pain in NB stimulates professionals to look for ways to ease the pain and use ways to make the NB more comfortable. Crying, facial expressions, heart rate and oxygen saturation are the main forms of assessment.

Professionals’ assessment and management of newborn pain

When questioning the participants about the use of standardized scales to measure NB pain, the interviewees demonstrated that they knew and used some pain scales, even mentioning the Neonatal Infant Pain Scale (NIPS) as one of them. On the other hand, there are also reports of absence of protocols for pharmacological measures and the weak use of non-pharmacological measures, as shown in the following statements:

“We have a scale that we follow there in the NICU [...], from zero to five, how much pain you think they’re in, you know, in the folder behind the newborn there’s a ‘little scale’ to assess pain, you know?” (NI 03).

“The pain scale, where we assess the baby’s expression, the baby’s cry, everything is assessed on this scale.” (TI 07).

“[...] we don’t have an established protocol for drugs, and regarding non-pharmacological measures, we do have a protocol, but it’s not used in practice as it could be used... but we do it, right?” (NI 09).

Scales that were also mentioned by the participants who work in the NICU

“The NIPS, if I’m not mistaken. There’s a scale in the NICU, so when the child is crying a lot, like this, when they’re agitated, there’s

the whole assessment that we do, then there are the points that we add up to the total” (TI 08).

“As far as I know, the NIPS is the most widely used, because it can be used with all newborns [...]” (TI 04).

“Yes, several, there are several, but the teams aren’t always trained to apply them, but we have scales that only apply to premature newborns, right, or there are scales that are broad, that can be applied to all types of newborns, not just premature ones. I know that the NIPS is the most widely used, because it can be used with all newborns, and there’s the PIPP, which is specifically for premature infants. The one we use in the NICU is NIPS” (NI 09).

Some participants who work in the nursery reported not knowing any pain scales or having superficial knowledge of the subject, as shown below:

“Look, I’ve heard of it but I can’t remember the name now, but I remember recently talking about it and we know that there is a pain scale for newborns, I can’t remember the name now but I know there is one” (TN 02).

“No, not a pain scale. We see it by the reaction they make, if we see that it’s not because they want to suck or because they’re hungry, or we change them and change their clothes to see if it’s not something that’s bothering them, change their diaper, these things, we notice it, sometimes it’s just a little pain that they have, which aren’t little things that we can solve at the moment” (TN 05).

“No. I don’t know” (TN 11).

The statements indicate the need to invest in educational strategies on the assessment and treatment of neonatal pain in the search for the changes needed to improve pain management in this sector.

DISCUSSION

For a long time, pain in NB was underestimated because it was believed that they were incapable of perceiving painful stimuli. Research has shown that NB have functional and neurochemical components necessary for the perception and transmission of painful impulses¹⁴. It is estimated that hospitalized babies are exposed to around 70 stressful procedures a day, depending on their situation, and that this can alter their brain development¹⁵. In a study⁶, NB were subjected to an average of 6.6 invasive procedures a day, which shows that many interventions were carried out.

According to the World Health Organization (WHO), in 2018 there were around three million births in Brazil, of which 11% were premature, placing it among the 10 countries with the highest number of premature births. This is reflected in the greater number of NB who need to be admitted to the NICU and who depend on qualified and individualized care such as intubation, thus showing specific concern about pain¹⁶.

In NB, the stress of moving and handling to perform any procedure can increase metabolic demand and the need for oxy-

gen, as well as physiological and behavioral responses⁸, finding resonance with most of the participants' statements.

In addition, the literature shows that prolonged exposure to pain causes a generalized stress response. This situation induces the release of harmful hormones when released in large quantities. The mobilization of substrates and catabolism favors weight loss, as well as changes in vital signs, cardiac arrhythmias, and damage to brain development, such as permanent changes in the organization of the nociceptive system¹⁷.

Painful procedures that are considered small and not very invasive are often not accompanied by pain relief methods, and this painful sensation can cause damage to the NB in the short, medium, and long term. For this reason, handling is always the most frequently mentioned factor when it comes to pain in NB², corroborating the statements made in the present study. Handling or minimal touch is aimed at reducing NB stress, bringing together all the procedures and care, but it still doesn't seem to reduce exposure to pain¹⁸.

In a study¹² carried out in Pato Branco, PR, with professionals from a NICU, with the aim of identifying nursing knowledge about pain in NB, it was found that professionals have difficulties identifying pain in this population but recognize that daily exposure to procedures is the main cause of their pain¹². These results are compatible with those obtained in the present research. In order to understand the difficulties faced by nursing professionals who provide care, it is necessary to identify the factors that can interfere with NB pain and try to understand the interactions between NB pain and the health professional's interpretation of this whole process, since this can interfere with their decision regarding the care to be provided¹⁸.

Researchers¹⁹ point out that assessing pain in NB is a difficult task, as the measurement of the painful experience in this population is still little known, creating a barrier to measuring pain correctly and effectively. This shows the importance of the nursing team being able to understand and evaluate the language of NB by changing their behavior in order to find methods and interventions to control pain and improve their quality of life.

Assessing pain in NB is still a challenge for health professionals. To identify it, instruments are used that take into account behavioral and physiological changes such as intense crying, irritability, facial expression and motor agitation²⁰. Although crying is one of the NB's main sources of communication, it is not very specific when it comes to pain, as it can be related to other factors such as hunger, sleep, discomfort, or other factors that can be emotional or physiological¹⁷.

The need for the nursing staff to systematize the process of assessing and treating pain in NB requires them to face the challenge of providing care based on scientific evidence²¹.

Thus, recognizing the need to address pain in NB based on its characteristics shows how important the role of the nursing team is in neonatal care, given that they are the professionals who spend the most time with the NB and who, consequently, are better able to identify and assess pain and then act with appropriate measures according to the needs of each patient.

Non-pharmacological methods are increasingly proving to be effective and are being adopted as recurring practices, but in

this study they were found to be empirical and incipient. Studies carried out on the main procedures performed on NB report that non-pharmacological pain relief methods are effective for the procedures and justify their quality²².

Strategies for the prevention and relief of neonatal pain are especially carried out by the nursing team. Motivated by their greater contact with patients, nurses are able to measure and assess pain in order to prevent and control it. The adoption of pharmacological and non-pharmacological strategies is frequently cited in recently published national studies. When reporting on the effectiveness of pharmacological and non-pharmacological strategies, studies show that analgesic measures are rarely used in neonatal units²³.

Pharmacological measures use drugs to treat and relieve pain, while non-pharmacological measures stand out because they include other forms of care, acting especially on the painful experience. That's why it is important for health professionals to know the benefits that these measures bring to patients, in order to guarantee quality and effective care²³. Non-pharmacological measures are effective when used to prevent and control pain. These measures are strategies whose main objective is to prevent the intensification of pain, the physical and behavioral disorganization of the NB, as well as minimizing its complications²⁴.

In this way, various non-pharmacological interventions are recommended for the relief and management of acute pain or pain of mild to moderate intensity. These interventions have proven efficacy, low risk for babies and low operating costs. Methods such as non-nutritive suction, glucose solution, breastfeeding, the kangaroo position, music therapy and therapeutic massage, among others, can be used²⁵. In this sense, researchers²⁶ recommend containing the NB in an improvised nest to promote its behavioral organization. However, methods that were less mentioned by the participants, such as reducing sound and visual stimuli, are also effective in rebalancing the NB, as well as in providing neurological protection, especially in premature NB.

The nursing team plays a fundamental role in controlling NB pain, as they remain close to the patient throughout their hospital stay and carry out most of the invasive procedures, as well as being responsible for prescribing non-pharmacological methods to promote patient comfort and pain management²⁷.

In order to manage pain effectively and provide comprehensive care to NB, it is necessary to emphasize the importance of proper pain assessment using a pain scale²⁸ that provides a basis for and directs strategies for pain relief. Today, there are several tools for assessing pain in NB, but there still is a lack of knowledge and lack of use of these instruments.

Pain scales emerged with the aim of reducing the subjectivity of behavioral pain measures. These scales assign points to certain behavioral pain parameters²⁶. The NIPS, for example, mentioned by some of the participants, has six pain indicators, consisting of a rating from zero to two points. It is a rapid assessment scale that can be used with term and preterm NB. A score of four or more indicates the presence of pain²⁸.

In view of this, it is important for nursing professionals to use a scale to measure pain, as this allows pain to be assessed correctly

and better and more qualified care and pain management can be provided according to the NB's needs, relieving their discomfort and pain.

The study²⁹ identifies the importance of assessing pain in NB using scales, comprising physiological and behavioral parameters that can and should be assessed simultaneously, aiming at the correct assessment of pain in order to provide efficient, quality care to NB, avoiding complications caused by under-treated or untreated pain.

In this sense, the American Academy of Pediatrics³⁰ recommends that health services have evidence-based protocols for the prevention and treatment of pain in NB, including the careful performance of procedures, routine pain assessment, the use of pharmacological and non-pharmacological measures for pain relief, drugs for operative pain and procedures for severe pain.

Health teams should frequently take part in educational activities, especially nursing teams, on the effectiveness of assessment scales in the diagnosis and treatment of NB pain²⁹. Ongoing education, with the aim of showing scientific evidence, helps professionals to adopt effective and safe control measures in the area of pain prevention and management²⁷.

Clinical protocols are essential for the implementation of good neonatal pain management, as well as for the standardization of procedures and conduct, aiding in the organization of units and the management of adequate neonatal pain management. Thus, the findings of the present study imply the need for health professionals, especially the nursing team working in the NICU and nursery, to effectively acquire up-to-date knowledge about the identification, assessment, control, management and recording of neonatal pain.

CONCLUSION

The study revealed the importance of identifying pain in NB and managing it effectively, since failure to do so can lead to more stress for these patients. Based on the results obtained, the perception of pain should be a concern for the NICU and nursery nursing staff, given that they are the professionals who have the most contact with NB and, even more so, considering that the identification of pain is an important tool for patient care.

It was observed that crying is the main characteristic identified by the professionals when there is an NB in pain or in discomfort, and they also use a combination of pharmacological and non-pharmacological methods for relief. Moreover, the study showed that the use of pain scales directs and improves care, as well as supports effective pain management. Effective management should be seen as an indicator of the quality of care offered, guaranteeing humanized, injury-free and high quality assistance.

AUTHORS' CONTRIBUTIONS

Larissa Caroline Bonato

Data Collection, Conceptualization, Resource Management, Project Management, Research, Methodology, Writing – Preparation of the original

Catia Cristiane Matte Dezordi

Project Management, Writing – Review and Editing, Supervision

Cibele Thomé da Cruz Rebelato

Writing – Review and Editing, Supervision, Visualization

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