







# Swaddle bathing in premature babies in a neonatal unit: the practice from the perspective of nurses

Banho enrolado em bebês prematuros em unidade neonatal: a prática na perspectiva de enfermeiros

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-  Hisabela Marinheiro dos Santos<sup>1</sup>
-  Laura Johanson da Silva<sup>1</sup>
-  Fernanda Garcia Bezerra Góes<sup>2</sup>
-  Ana Carolina Nascimento dos Santos<sup>1</sup>
-  Bárbara Bertolossi Marta de Araújo<sup>3</sup>
-  Inês Maria Meneses dos Santos<sup>1</sup>

<sup>1</sup>Universidade Federal do Estado do Rio de Janeiro.  
Rio de Janeiro, RJ, Brazil.

<sup>2</sup>Universidade Federal Fluminense.  
Rio das Ostras, RJ, Brazil.

<sup>3</sup>Universidade do Estado do Rio de Janeiro.  
Rio de Janeiro, RJ, Brazil.

## Corresponding author:

Laura Johanson da Silva  
Rua Dr. Xavier Sigaud, 290 – Urca  
CEP: 22290-180. Rio de Janeiro, RJ, Brazil.  
E-mail: [lauraenfaunirio@gmail.com](mailto:lauraenfaunirio@gmail.com)

## ABSTRACT

**Objective:** to understand the practice of swaddle bathing in premature babies, in a neonatal unit, from the perspective of nurses. **Methods:** qualitative research, conducted through semi-structured interview, with 13 nurses working in neonatal units, captured through the snowball sampling technique. Data submitted to thematic-categorical analysis. **Results:** nurses considered benefits related to comfort and stimulation in the swaddle bathing. However, they mentioned challenges for practice, related to lack of knowledge, low adherence and work overload of the nursing team, absence of routines and institutional protocols, besides to scarcity or even inadequacy of the material resources available in the institutions. **Conclusion:** the practice of swaddle bathing, from the perspective of nurses, has positive effects for the premature babies' development. Nevertheless, there are managerial challenges that need to be overcome for effective implementation.

**Descriptors:** Nursing; Infant, Premature; Humanization of Assistance; Intensive Care Units, Neonatal; Immersion.

## RESUMO

**Objetivo:** compreender a prática do banho enrolado em bebês prematuros, em unidade neonatal, na perspectiva de enfermeiros. **Métodos:** pesquisa qualitativa, realizada por meio de entrevista semiestruturada, com 13 enfermeiros atuantes em unidades neonatais, captados através da técnica de amostragem bola de neve. Dados submetidos à análise temático-categorial. **Resultados:** os enfermeiros consideraram benefícios relacionados ao conforto e à estimulação no banho enrolado, entretanto, citaram desafios para a prática, relacionados ao desconhecimento, à baixa adesão e sobrecarga de trabalho da equipe de enfermagem, ausência de rotinas e protocolos institucionais, além da escassez ou mesmo inadequação dos recursos materiais disponíveis nas instituições. **Conclusão:** a prática do banho enrolado, na perspectiva de enfermeiros, tem efeitos positivos para o desenvolvimento de bebês prematuros, porém existem desafios gerenciais que precisam ser superados para efetiva implementação.

**Descritores:** Enfermagem; Recém-Nascido Prematuro; Humanização da Assistência; Unidades de Terapia Intensiva Neonatal; Imersão.

## Introduction

Infant mortality nowadays mainly affects the age group corresponding to the neonatal period, with prematurity being the predominant cause of death<sup>(1)</sup>. Besides the challenge imposed to reduce morbidity and mortality among at-risk babies, the goal of neonatal care involves minimizing damage in order to promote adequate development of the premature population<sup>(2)</sup>.

During the adaptation to the environment of the neonatal unit, premature babies face considerable lack of energy and adaptive physiological capacities, limited by the immaturity of their systems. Consequently, excessive manipulation, associated with harmful stimuli that cause pain and stress, has a negative impact on brain development. Therefore, the urgent need for an individualized and neuroprotective care that allows a physiological and behavioral organization. This type of modulation is proposed by the Newborn Individualized Developmental Care and Assessment Program (NIDCAP), whose logic was incorporated in Brazil, within the scope of the humanization actions of neonatal care, using the Kangaroo Method<sup>(3-5)</sup>.

Among the nursing care in neonatal units that involves high manipulation and that has been the subject of research regarding the impact on the physiological and behavioral regulation of the premature infant is bathing, with repercussions for the parameters of heart rate, oxygen saturation and temperature, besides crying time and stress signs<sup>(6-7)</sup>.

From the perspective of developmental care, the immersion bath, proposed by the Ministry of Health of Brazil, is known at the national level as humanized bath<sup>(3)</sup> and addressed in the international literature as swaddle bathing<sup>(7-9)</sup>, a practice that consists of immersing the baby in warm water just below the shoulders, wrapped in blankets, keeping arms and legs in flexion. The process of unfolding, cleaning and returning the blankets is done carefully and sequentially, in order to promote containment. This results

in reduced behavioral stress, due to greater stability of the autonomic and motor systems, during and after the procedure<sup>(7-9)</sup>.

In healthcare practice, the conventional bathing technique with the baby's direct immersion in a bathtub or acrylic dome is best known and routinely adopted in neonatal inpatient units<sup>(6)</sup>. On the other hand, the technique of swaddle bathing needs to be the target of scientific investigations to support changes in clinical practice that promote better physiological and behavioral responses of the premature baby when performing this care technique. In a recent systematic review, it was highlighted that there is a shortage of clinical trials focused on swaddle bathing. Nevertheless, based on the available findings, this technique was recommended, in order to reduce stress. The importance of supporting the nurse's protective behavior during the bath of the premature baby and a proper training to acquire attitudes that minimize the baby's stress was also signaled<sup>(7)</sup>.

In this regard, the research question was: how do nurses perceive the practice of swaddle bathing in premature babies, in the context of the neonatal unit? Thus, the research aimed to understand the practice of swaddle bathing in premature babies in a neonatal unit, from the perspective of nurses.

## Methods

This is a qualitative study, in which the snowball technique was used to capture participants. This technique consists of a non-probabilistic sampling, using reference chains to locate possible participants, being used mainly for exploratory research purposes and to search for groups that are difficult to access<sup>(10)</sup>. The adoption of this strategy occurred especially, due to the difficulty of locating a potential scenario whose practice of swaddle bathing in premature infants was part of the care routine.

The option scenario for attracting key informants ("seeds") was the Research, Experimentation and Nursing Studies Center in the Area of Women

and Children, located at the Alfredo Pinto School of Nursing, of the State University of Rio de Janeiro. This Center has nurses with experience in neonatal units from public and private institutions and postgraduate students with themes in the area of prematurity. The choice of this environment was due to the ease of access to key informants with a potential network of contacts. Contacts were made by telephone, based on the sequential indications. The seeds were indicating one or more individuals who, when contacted and added to the participants, indicated others and so on, increasing the sampling frame<sup>(10)</sup>.

In this process, 13 nurses met the inclusion criteria and were contacted: nursing assistants with more than one year of experience in a neonatal unit, who knew and performed the technique of swaddle bathing in premature babies. There was no refusal or withdrawal and, therefore, the 13 nurses made up the sample. Data collection took place from August to November 2018, using individual semi-structured interviews, previously scheduled, in a reserved place, with voice recording by digital media. The interview script consisted of a brief characterization of the participant, containing the variables age, sex, time of training, working time in the neonatal area, position/function and whether he/she had theoretical or practical training in developmental care. Then, the following questions were asked: In your opinion, what are the meanings of bathing premature babies in a neonatal unit? What type of bath is most common in daily practice? How do you perform the swaddle bathing and how do you feel when interacting with the baby? What do you think of this type of bath? How did you learn this technique? At your workplace, are there any written regulations on bathing of the premature baby? What do you think that would be important to improve nursing care for the premature baby in the neonatal unit?

The interviews were conducted by the main author, through previous training and supervision by the second author, a researcher with expertise in this type of qualitative research. The closure of the fieldwork happened through the criterion of data saturation, i.e.,

when after analysis, no new information was observed to clarify the object studied. The interviews lasted an average of 15 minutes.

After transcription, data were subjected to thematic-categorical content analysis that presents the following steps: pre-analysis, exploration of the material or coding, treatment of the results-inference and interpretation<sup>(11)</sup>. In these stages, the meaning units were organized in analytical tables, with recurrence being counted in terms of record units within each transcribed interview and between them, also looking for thematic adherence for categorization. From this process, three thematic categories emerged: Benefits of swaddle bathing technique in a neonatal unit; Indications and practices of swaddle bathing in a neonatal unit; Management challenges for bathing in a neonatal unit.

Regarding ethical aspects, the research has the Presentation Certificate for Ethical Appreciation, according to number 91292718,2,0000,5285 and approval by the Ethics Committee of the State University of Rio de Janeiro, opinion number 2,769,369/2018, according to Resolution 466/2012, of the National Health Council. Participants were asked to give prior consent, through information about the research and signing an Informed Consent Form. To guarantee the confidentiality of the participants, the testimonies were identified in the study through the code "N" for Nurses, with the numerical sequence of entry in the research (example: N1, N2).

## Results

The participants in this study (13) were female, aged between 26 and 58 years old. Professional training time ranged from 2 to 34 years, with an average of 14.2 years. Regarding the working time in the neonatal unit, it ranged from 1 year and 10 months to 34 years, with an average of 12.6 years of experience. Only one nurse came from a private hospital, the others (12) came from public hospitals and maternity hospitals in the city of Rio de Janeiro, Brazil, with

8 nurses from the federal network, one from the state network and 3 from the municipal network. All reported having theoretical or practical training in developmental care. Only 2 nurses stated that swaddle bathing was included in the protocols and care practice in the units they worked.

### **Benefits of the swaddle bathing technique in a neonatal unit**

The nursing team mentioned that swaddle bathing has benefits for the baby related to relaxation and less behavioral disorganization, with reflexes for the baby's growth and development, and avoiding complications, such as stress, crying, weight loss, drop in saturation and apnea. *We can bring benefits to the babies' growth, they calm down, if they don't cry too much, they don't lose weight, if they can relax, they can maintain all their normal hemodynamic parameters and this helps in growth and development of the babies. There is no drop in saturation, no apnea at bath time, no complications, you can give that bath calmly, without complications for them (N2). The professional feels well when he sees that the child is less disorganized, the hemodynamic is more stable, and the interaction and sleep of the baby improves after that. The baby has a much longer lasting sleep, improves weight gain (N4).*

Nurses pointed out that swaddle bathing provides the baby with a sense of security, as it imitates what the uterine environment does, through the body restraint that the blanket allows. The reading of the facial mimic was an important indication, so that the nurse understands the baby's reaction during care. *When babies are still in the uterus, they're in an environment, in a hot liquid and they've the uterus beside them and they're not so loose, they've a boundary in there. And when we bath them, and is a swaddle bathing we get them to come into contact with water, warm water, and because they're wrapped, they'll also have that space boundary (N2). You see the babies' tranquility and satisfaction face. Sometimes, by bathing, they're sleeping deeply, they don't have any facial expression of pain, so, like that, it's an even loving procedure to watch (N6).*

Nurses also emphasized that it was a pleasant practice for themselves, being an opportunity for in-

teraction and contact with the baby, considering that sometimes the mother may not be present. *It's a form of interaction and contact. When the mother isn't here, many mothers can't stay here daily, so this baby ends up having little human contact. So, this is good too, because you open a window of interaction with the baby (N9). For me, it's perfect. We manage to turn the practice into something pleasant for the professional (N2).*

### **Indications and practices of swaddle bathing in a neonatal unit**

Nurses recognized that the application of the bath followed some indications, such as body hygiene of the premature baby, besides the need for relaxation, comfort and sensorimotor stimulation. However, they highlighted the importance of clinical evaluation for decision making. *In premature babies, we're more interested in making them to feel relaxed. We see at times, little babies that aren't mechanically ventilated, they're stable and even little babies, sometimes, that are in the incubator and we realize they've a suitable condition for the bath, we take them out of it (referring to the incubator) (N1). Here, we bath premature babies depending on their weight, not all premature babies take a bath. But, these bigger preterm infants, that we can promote the bath, it's important because, in addition to comfort, it also promotes, I think even a sensorimotor perception, to get out of the incubator and this expands the view that we've on pre-term babies (N12).*

Regarding the procedural practice of swaddle bathing, nurses emphasized the care related to the baby's handling process, respect for behavioral states and concerns about the care environment, especially with regard to thermoregulation and infection prevention. *At first we assess the water temperature until it's warm, then we wrap the baby, we take it to the bathtub, initially we clean the face and head, and then we put it in the bathtub wrapped, we let the baby to adapt to it, and then, little by little, we take their blankets off to do the hygiene the baby need (N13). I think that the professional has to adjust to the baby to do this bath, because if you take the baby who was sleeping and put it in the water, the baby will scream, it'll kick like crazy (N7). The routine is to turn off the air conditioning there from the central unit. This sector of ours is very cold. We have*

*a bathtub so we can bath the babies and we disinfect the bathtub, we have a thermometer to assess the water temperature and we wrap the baby. When the mother has a cloth diaper, we use it, because we find that's easier to wrap the baby with a cloth diaper (N1).*

They pointed out the prioritization of performing a swaddle bathing for premature babies (as they are more susceptible to stress) who are now able to immersion bath. In the case of term babies, the traditional bath is the chosen one. However, in addition to the question of gestational maturity, nurses also highlighted the baby's stress as an indication or even the professional's desire as a factor that influences the realization of the swaddle bathing. *I already did the swaddle bathing in premature babies, especially in premature babies, because it gives a greater stimulus, they get scared more easily, they've a more fragile skin, they've less integrity, so swaddle bathing is more aimed at these younger children (N9). Swaddle bathing is what we rarely do, but it is the most correct, but in a premature baby with low weight, when the baby is able to bath, we do it. In case of no term babies, we don't do it. It's performed to premature babies who're stable, but term babies aren't. Full-term babies, we put them right in the bathtub (N10). We end up using this technique when the baby is more stressed, and you end up choosing the babies that you think you should do differently or when you feel like it (N1).*

Nurses considered important to have a family member at that moment, participating actively, in order to promote parental confidence and chances of continuity of care, in the transition process from hospital to home. *As the bath is carried out during the day, the parents are close, so you end up giving the parents some confidence, because they see the baby is calm, relaxed during the bath. With the swaddle bathing, we can have this very tasty, very satisfying interaction and provide comfort for the baby and be able to have even family interaction and also see that we end up encouraging the parents to also do the same procedure, either in the unit or even after discharge and this also helps to generate some confidence in the parents (N2). It's important, if possible, to always call the mother. We take care of the baby so it can go home, the mother stays close to observe, so that she won't be surprised on the day of discharge and she stays there to learn how the bath should be performed at home. Since the baby is here, she is already learning to do this bath. And this is important, it's relaxing, and inserting the family is just as important (N13).*

### **Neonatal management challenges for swaddle bathing in a neonatal unit**

Despite the physiological and behavioral benefits that swaddle bathing provides for the premature baby, nurses stated that they observe little use of this technique in the team, and the institutions in which they work still maintain the practice of traditional immersion bath without wrapping as a protocol, for babies able to leave the incubator. Only two nurses said they performed swaddle bathing as an institutionalized routine, due to the existence of a protocol in the unit. There was also mention of the use of wrapping in a hot tub, which is immersion in a bucket by the physiotherapy professional, for therapeutic purposes. *The most common is the conventional bath, our protocol for the unit is the conventional bath, but we're starting to change the protocol for the humanized bath (N1). We hear a lot about the swaddle bathing and such, but like this, I rarely see it, the technical team performing the swaddle bathing technique in my unit (N6). It's the swaddle bathing, both for premature babies who reach gestational age and for full-term babies (N11). It indicates the swaddle bathing (referring to the protocol). It sets days for the bath and says it has to be with the least manipulation and the least invasive possible. We have the practice of doing swaddle bathing to premature babies (N9). If the patient was already in the mother's breast or in the nursery, almost leaving the hospital, we would give the immersion bath, which was a bath in the hot tub, but it was not given by the nurse, it was given by the physiotherapist (N3).*

Another reason for the non-applicability of the swaddle bathing is the number of professionals per patient, which affects the work dynamics. Therefore, this practice, also considered as therapeutic, ends up being restricted to selected babies. *Here, the most common is the traditional one, because they've many beds, and it's always beyond capacity, there're few professionals and children at high-risk. So, it turns out that the practice of bathing is the most traditional, for hygiene reasons, when the child needs it, it's the therapeutic bath, it's directed to more specific cases (N9).*

Additionally, the dynamics of the team itself, lack of some material resources, resistance on the part of the professionals or shortage of training was repor-

ted by nurses as reasons for not performing swaddle bathing. *It's much better if you bath a baby that's more peaceful than you, otherwise, during the procedure, the baby ends disorganized and crying. But, it's not always possible, due to routine, people, the unit, and some missing device that will help you (N5). There are some factors that interfere and that sometimes make bathing difficult, like the lack of blankets. The lack of blankets is the main thing, we don't always have what's needed to bath a baby, dry the baby and put the baby on the bed, the main thing is the lack of supplies. And everything that's a new technique, has a bit of a block with those who are most experienced, but from the moment you explain the benefits of a more humanized bath, they'll adapt to the technique, but it's with time, nothing immediate (N10). In the technique, even in the swaddle bathing, you put the baby in the water and take off the cloths little by little, I usually don't do that, I really take the baby's cloth off and put it in the water. But I think is training, and as we end up not doing the technique, we don't have the appropriate training (N6).*

Nurses considered relevant to establish a swaddle bathing as a routine in the institution, through systematization, in the form of a standard operating procedure, since the performance of the procedure is still centered on the professional's option and desire. *I think it's best for the baby, so much that we are doing the SOP review (referring to the standard operating procedure), now, and we want to introduce it as a routine in the unit, and not like this: 'I am in order, I do it!', got it!?. We want to establish it as a unit routine. Lately, the ones who do it are only those who want to do it, because the SOP in the unit is the traditional bath (N1).*

The interviewees expressed the need for awareness, knowledge and training of the team about the changes and the benefits of swaddle bathing in premature infants, in order to achieve greater acceptance and engagement of professionals to perform this technique. *I think that it's the awareness and training of all professionals together, we'll make sure that everyone has a true understanding and knows the real objective, so we can have a greater commitment, on behalf of everybody who belongs to the team (N2). I think it's the team's awareness, to receive continuing education, because here we don't have it, because, many times, it's the technician who is directly linked to the baby care and I'm not saying that they don't know, but many don't have the required knowledge. They didn't have access to it, so they don't know, so sometimes they do or fail to do something,*

*due to lack of knowledge. So, it's important to have a professional who comes and does continuing education (N8).*

## Discussion

As it is still a practice that is not systematized in protocol terms in local institutions, the limitations of the results refer to regionality and difficulty in deepening context, as it was conducted with participants from different neonatal units. Despite this, the diversity made it possible to highlight important care and management aspects that influence the practice of bathing in a neonatal unit.

Thus, the recognition of the positive effects of the swaddle bathing, evidenced in the study, contributes to the dissemination and strengthening of this technique in the clinical practice, with theoretical support. On the other hand, the identification of difficulties for implementation can guide the development of managerial actions that promote the applicability, such as updates and training on the topic with nursing professionals, creation of institutional routines and protocols for standardization of the technique and acquisition of materials to perform the procedure.

In this sense, the results of this study pointed out that the participating nurses understood the impact of manipulation during bath on the baby's physiological and behavioral stability and recognized, in the practice of the swaddle bathing, opportunities to promote comfort and neuroprotective stimulation. Such findings are corroborated with evidence of a systematic review, in which this type of bath proved to be the best method for premature infants in a neonatal intensive care unit, as it is less related to temperature changes and stress levels, improving their physiological state<sup>(7)</sup>.

Besides the benefits highlighted in the review, it was also mentioned by nurses that swaddle bathing promotes other beneficial effects on the baby's physiological pattern, by reducing crying, weight loss, drop in saturation and apnea. Thus, swaddle bathing was considered, by the study participants, as a care

technique with direct benefits for the development of premature babies, which go beyond body hygiene itself, related to behavior, comfort, relaxation, sensorimotor stimulation, safety and clinical stability. These results are in accordance with other international evidence that also recommend swaddle bathing, due to the association with the reduction of motor stress, crying and agitation, facilitating interaction and organization in premature babies, in comparison to the conventional immersion bath<sup>(7,9,12)</sup>.

In this logic, it is understood that swaddle bathing is in line with the guidelines of humanized care for newborns of the Brazilian Ministry of Health, which reinforces the need to respect the baby's behavioral state and the use of wrapping as a safety measure when contact with water. Furthermore, it indicates that the bath should not be a stressful procedure and, in the scope of neuroprotective care, it should involve measures that reduce thermal and behavioral stress<sup>(13)</sup>, exactly what swaddle bathing minimizes, according to the current findings.

In addition to the clinical stability and weight, highlighted by the nurses, the literature points out that the corrected gestational age can also help the professional regarding the decision to perform the bath. However, the professional must be attentive to the unique needs of each baby<sup>(14)</sup>, becoming necessary a reduction of the potential stressors in the neonatal unit environment, such as noise and excessive lighting. The concern with the prevention of thermal stress was also included in the findings of this research. In this regard, the literature emphasizes the need for further studies on immersion baths, as there is still no consensus on reducing thermal stress with the aid of wrapping<sup>(6,15)</sup>.

Another important result was the opportunity for peaceful interaction between baby-family-professional in this bathing modality. In this perspective, the literature remarks the benefits of this care technique for parents, as it provides greater confidence in their functions, better interaction with the child and reduce their stress. The involvement of parents provides

them with confidence for the continuity of care at home<sup>(13)</sup>.

Factors that negatively influenced the practice of bathing in the neonatal unit were mentioned by nurses, namely: lack of knowledge, low adherence and work overload of the nursing team, due to the scarcity of human resources, absence of routines and institutional protocols, in addition to the lack or even inadequacy of the material resources available in the institutions. Evidence indicates that these aspects negatively affect the professional's health, causing discontent, physical and psychological overload, absenteeism and stress. They also impair the quality of care for the baby and the family, making it difficult or even impossible to provide ideal care and good practices<sup>(16-17)</sup>.

Nurses indicated the existence in some institutions, of protocols for the conventional immersion bath only and, therefore, expressed the need for the establishment of a protocol in the unit, in order to set a routine for performing the swaddle bathing. Nevertheless, there are recommendations that indicate the need to include the wrapping modality in bathing protocols in neonatal units for term and late preterm infants who are clinically stable, added to the development of educational actions for the training of nursing teams, in order to acquire attitudes that minimize neonatal stress<sup>(14,18)</sup>. This was also noted in the participants' statements.

Accordingly, the protocols must contemplate the real needs of the services and the population group that will be assisted, as they function as guide instruments for nurses, systematizing the assistance, standardizing the care in the institution and guaranteeing the autonomy and safety for the professionals, as they guide the care that will be provided<sup>(19)</sup>. This is an urgent issue, regarding the practice of swaddle bathing to ensure safety for babies, family members and nursing professionals.

It should be emphasized that the nursing team has a decisive role in achieving humanized care for newborns at risk, through the embracement of the fa-

mily and individualized care. This promotes the baby's development and the confidence and adaptation of family members during hospitalization. However, to improve the professionals' adherence to good practices, including those related to bathing, it is necessary to recognize, in the context of the neonatal unit, the strong influences of management issues, such as human resources, interaction between teams, work processes, leadership strategies and care management<sup>(20)</sup>.

Furthermore, for better practices in bathing of premature babies, nurses stressed the need for greater engagement, awareness and dissemination of knowledge about this type of bath. It is known that nursing practice needs to be based on scientific concepts and reflections, demanding integration of education and work. Through training, nursing teams can acquire knowledge about developmental care that allows a better modulation of baby's manipulation, in order to respect the needs of the premature baby, since the professional's behavior is also closely related to the stress suffered by the premature baby. Therefore, the literature recommends that nurses and healthcare teams be trained to offer protective behavior during manipulation in the bath of the premature baby<sup>(14)</sup>. Swaddle bathing presents itself as humanized care, capable of achieving this purpose.

## Conclusion

From the perspective of the participating nurses, the swaddle bathing has positive effects on relaxation, clinical stability and the development of premature babies, in addition to promoting the confidence of these and their parents, but they need to have a clinically stable condition in order to apply the humanized care technique. Nevertheless, there are managerial challenges for effective implementation, which include the excessive workload, the shortage of material resources and the lack of knowledge on the part of professionals. Swaddle bathing is a practice that needs to be disseminated and strengthened, through effective management actions in neonatal units.

## Collaborations

Santos HM contributed to the project design, collection, analysis, data interpretation and article writing. Silva LJ collaborated with the project design, analysis, data interpretation, article writing, critical review of the intellectual content and final approval of the version to be published. Santos ACN assisted in the project design. Góes FGB, Araújo BBM and Santos IMM contributed to the article writing and relevant critical review of the intellectual content.

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