



## SKIN LESIONS IN THE PRETERM NEWBORN: EXPERIENCES OF THE NURSING STAFF

### LESÕES DE PELE NO RECÉM-NASCIDO PRÉ-TERMO: VIVÊNCIAS DA EQUIPE DE ENFERMAGEM

### LESIONES CUTÁNEAS EN EL RECIÉN NACIDO PRETÉRMINO: EXPERIENCIAS DE LA EQUIPO DE ENFERMERÍA

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#### ABSTRACT

**Objective:** knowing the experiences of the nursing staff with skin lesions of the premature newborn. **Method:** this is a descriptive study, with qualitative approach, based on thematic analysis. The data production was conducted through recorded semi-structured interviews with eight nursing professionals of a Neonatal Intensive Care Unit of a University Hospital, after approval of the research project by the Research Ethics Committee, under the Protocol nº 58/2011. **Results:** From the analysis of the interviews, three categories were emerged: “*Identification of skin lesions in the PTNB*”, “*Causes assigned to the skin lesions of PTNBs*” and “*Nursing care in the prevention and treatment of skin lesions of the PTNB*”. **Conclusion:** it was found that the work of the professionals of the nursing staff in the prevention and treatment of skin lesions of the PTNB is a challenging action, given the need for constant handling of the child. **Descriptors:** Premature; Skin; Neonatal Intensive Care Unit; Nursing.

#### RESUMO

**Objetivo:** conhecer as vivências da equipe de enfermagem com as lesões de pele do recém-nascido prematuro. **Método:** estudo descritivo, de abordagem qualitativa, com análise temática. A produção de dados foi realizada por meio de entrevistas semiestruturadas gravadas, com oito profissionais de enfermagem de uma Unidade de Tratamento Intensivo Neonatal de um hospital universitário, após a aprovação do projeto de pesquisa pelo Comitê de Ética em Pesquisa, sob o Protocolo nº 58/2011. **Resultados:** a partir da análise das entrevistas, emergiram as três categorias: “*Identificação das lesões de pele no RNPT*”, “*Causas atribuídas às lesões de pele dos RNPTs*” e “*Cuidados de enfermagem na prevenção e tratamento das lesões de pele do RNPT*”. **Conclusão:** foi possível verificar que a atuação dos profissionais da equipe de enfermagem na prevenção e tratamento das lesões de pele do RNPT é uma ação desafiadora, tendo em vista à necessidade do constante manuseio da criança. **Descritores:** Prematuro; Pele; Unidades de Terapia Intensiva Neonatal; Enfermagem.

#### RESUMEN

**Objetivo:** conocer las experiencias de la equipo de enfermería con las lesiones cutáneas del recién nacido prematuro. **Método:** Estudio descriptivo, con planteamiento cuantitativo, con análisis temático. La producción de datos se llevó a cabo a través de entrevistas semi-estructuradas con ocho profesionales de enfermería en una Unidad de Cuidados Intensivos Neonatal de un hospital universitario, después de la aprobación del proyecto de investigación por el Comité de Ética en Investigación, bajo el Protocolo nº 58/2011. **Resultados:** a partir del análisis de las entrevistas, tres categorías fueron creadas. “*Identificación de las lesiones cutáneas em el RNPT*”, “*Causas asignadas a las lesiones cutáneas de los PTNBs*” y “*La atención de enfermería en la prevención y tratamiento de lesiones cutáneas del RNPT*”. **Conclusión:** ha sido posible verificar que la actuación del personal de la equipo de enfermería en la prevención y tratamiento de lesiones cutáneas del PTNB es una acción desafiante, en vista de la necesidad de manipulación constante del niño. **Descritores:** Prematuro; Piel; Unidades de Cuidados Intensivos Neonatal; Enfermería.

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## INTRODUCTION

The skin care of preterm newborns (PTNB) is one of the assignments of professionals of the nursing staff who work in Neonatal Intensive Care Units (NICU). This care has the objective of keeping the body temperature ideal and contributing to the adaptation in relation to the external environment.<sup>1,2</sup>

The skin of preterm newborns is extremely thin and susceptible to mechanical traumas such as injuries, abrasions and lacerations.<sup>3</sup> Thus, it raises a challenge for the nursing staff to keep their integrity during the performance of procedures. Given the importance of this integument for the survival of preterms, it is essential that the nursing staff that assists them is prepared to act in this scenario, by preventing injuries, evaluating them and acting on them.

One of the concerns of nursing, especially when the PTNB is at risk, involves the procedures that require excessive handling, both those considered as painful and those that are routine actions. The premature infant that is taken to a NICU needs extreme care and invasive procedures that will support its survival.<sup>4</sup>

These practices include the maintenance of temperature and moisture of the environment, through incubators; suitable positioning; bath; lubrication of the skin with emollient oils; use of skin solutions for antisepsis; fixation or removal of support of stickers for supporting tubes (infusion lines) and devices used in cases of monitoring; accomplishment of invasive procedures such as venous and arterial punctures; phototherapy, among others.<sup>5</sup>

Such procedures usually provoke injuries that endanger the life of the PTNB, because they become gateways to pathogenic microorganisms, and might cause infections and death. Skin lesions are not easy to handle, as they require special care, quick decision-making, effective intervention and accurate attitude on the part of caregivers, thereby becoming a challenge.<sup>6</sup>

Knowing these injuries, as well as the factors that cause them, their possible risks to health of the PTNB and the treatment to be conducted for its healing are assignments of the nursing staff. Thus, the guiding question of the study was: What is the experience of workers of the nursing staff with the skin lesions that affect premature newborns admitted to a Neonatal Intensive Care Unit?

From this perspective, the study objective was to know the experiences of the nursing staff with the skin lesions of premature

newborns admitted to the Neonatal Intensive Care Unit. It is believed that this study might contribute to the care of hospitalized PTNBs admitted to NICUs, by drawing the attention of nursing professionals to the risk of injuries and the importance of the maintenance of the integrity of the babies' skin.

## METHOD

The present study was extracted from the Final Report of the End-of-Course Paper entitled Skin lesions in preterm newborns: viewpoint of the nursing staff, in force from August 2011 to 2012.

This is a descriptive study with a qualitative approach. The descriptive research addresses the description of the phenomenon under investigation, thereby enabling to know the experienced problems.<sup>6</sup> The qualitative approach works with a universe of meanings, reasons, aspirations, beliefs, values and attitudes, thereby enabling greater depth of relationships, processes and phenomena under investigation.<sup>8</sup>

It was developed in the second half of 2011, in a Neonatal Intensive Care Unit of a city located in the Brazilian South. This unit has ten beds, which are divided into two rooms with five and four beds, respectively, and an insulation bed. Most of the admissions involve cases of premature patients.

The study participants were eight nursing professionals, with four nurses and four nursing technicians, who work in different shifts. The inclusion criteria of this research were: working in the unit for more than six months and conducting direct care to PTNBs admitted in the sector. All signed the Free and Informed Consent Form (FICF) and allowed the recording of interviews and dissemination of results.

The data were collected through semi-structured interviews with each participant. These interviews addressed issues relating to the causes of skin lesions, the facilities/difficulties in their identification and to their role in the care of the PTNB with skin lesions.

A thematic analysis of data was performed.<sup>8</sup> This technique was conducted in three steps: pre-analysis, material exploration and treatment of obtained results and interpretation.

In the pre-analysis, one performs the literal transcription of interviews and the elaboration of the registration units. During the phase of material exploration, the data were coded and grouped by similarities and differences, thereby generating categories. Lastly, during

the phase of treatment of obtained results and interpretation, the most significant speeches were selected, which were discussed from scholars of the theme at stake.

All the ethical principles of the Resolution 196/96 of the National Health Council (CNS), which regulates research involving human beings, have been taken into account.<sup>9</sup>The project was submitted to the Research Ethics Committee of the UCPEL, thereby receiving a favorable opinion to its publication under the Protocol nº 58/2011. The speeches of the professionals were identified by the letter E (*Enfermeira*, Nursing in Portuguese language) and TE (*Técnico de Enfermagem*, Nursing Technician in Portuguese language), followed by the number of the interview, as a way of ensuring their anonymity.

## RESULTS

The data analysis has generated three categories: **“Identification of skin lesions in the PTNB”**, **“Causes assigned to the skin lesions of PTNBs”** and **“Nursing care in the prevention and treatment of skin lesions of the PTNB”**.

### ◆ Identification of skin lesions in the PTNB

All the participants identify the skin lesions in PTNBs by means of physical examination, due to it being a daily procedure performed within the NICU.

*I identify in the physical examination when it is admitted and in the daily assessment. (E1)*

*Every child that is admitted goes through the physical examination and subsequently on a daily basis, mainly during hygienization. (TE3)*

The nursing professionals reported assessing skin conditions of preterm newborns at the moment of carrying out procedures.

*Here, we perform many procedures. Some are invasive. Their skin is very sensitive and friable. Thus, we take great care when handling it. Before and after each procedure, we assess the skin conditions to make sure that there was no lesion. (E4)*

It was found that such professionals have no difficulties during the assessment of skin lesions in preterm newborns. The capacity to assess an integument-related alteration is an important competence in nursing. Knowing how to assess every lesion by classifying it and acting on its treatment, describing it in an accurate manner and working for its healing might improve the prognosis of the PTNB.

*I realize that all professionals are well-targeted about the care shares to be taken with the skin. Thus, we warn the nurse in*

*relation to any detected change. Even a simple redness, if we think the skin is dried up. If there's one lesion at every dressing change, at every handling, we assess. We discuss on the treatment and on the care shares. (TE4)*

### ◆ Causes assigned to the skin lesions of PTNBs

The professionals have assigned the skin lesions to the venous punctures, to the fixing of stickers on the skin and to the skin dryness caused by high temperatures from warmed cribs and incubators, which makes the skin tissue more prone to injuries.

*It takes place through infiltrated venous access; lesions caused by fixing directly from adhesive tapes on the skin; a temperature of the warmed crib or high incubator that might cause dry skin, which increases the risk of injury. (E2)*

The pressure ulcers were identified due to the skin contact of PTNBs with wires and oximeter sensors and heart monitors.

*Erythemas, pressure ulcer caused by the oximeter sensors and wires or of the heart monitor that press the skin, thereby causing the lesion. Much as one cares about this, suddenly one realizes that one of these devices is in contact with the skin. (E1)*

Other mentioned forms were the skin lesions caused by improper position-changing of PTNBs.

*I believe that is caused by improperly held position changes. Sometimes, the child gets worse if we change its position frequently, since it is in mechanical ventilation and might have atelectasis. So, it is better to keep it in a certain position and, if there is no extra care shares, injuries might appear. (E3)*

### ◆ Nursing care in the prevention and treatment of skin lesions of the PTNB

Given that preterm newborns are frequently handled due to procedures needed to support life, there might be a breaking of the protective membrane. Thus, the care shares towards the babies' skin have to be intensified. It was found that participants reported that the most important is preventing injuries by performing periodic skin inspections of PTNBs.

*You must always be careful, watching the solution of continuity. By observing venous access, position changes. (E4)*

*Through these lesions, one PTNB might be infected, becomes septic and even pass away. Injuries cause pain, it bothers them, impairs even more its resistance, it influences in the diet acceptance, it causes agitation. Then, it's a very serious thing. The most important thing is really the prevention. (E1)*

*The lack of integrity of the skin increases the risk of infections. That's why our main concern is with the prevention of lesions. (TE1)*

It was found that several measures are implemented to prevent skin lesions of PTNBs such as care with fixings, in-service education, use of special solutions on the skin of the PTNB, proper mattresses and cushions and frequent position changes.

*We use several measures to prevent lesions: we take care of fixings; we avoid using stickers as much as possible, we perform in-service continuing education activities to the team to learn to avoid lesions. (E4)*

*We use specific solutions in the skin of PTNBs in order to avoid lesions; we use proper mattresses in cribs; cushions on the bony prominences. (TE4)*

*We perform position changes every 2hs. If other care shares are required, they are placed in the nursing prescription. (E1)*

Professionals reported that the assessment of the skin lesions is an important ability, because a lesion presents itself as a gateway to pathogenic microorganisms, and it might cause infection and sepsis. The assessment of the lesion drives its treatment and solvability.

*Knowing how to assess is essential because a skin lesion might be a focus for infection, thereby leading to sepsis, which might lead to a premature death. (TE2)*

*We have to assess every lesion and give the proper relevance to it. We decide if the treatment will be topical or systemic. (E2)*

*I've the role of watching, daily and/or constantly, the body surface of PTNBs. (E4)*

*Observing and assessing the newborn, in general, identifying and notifying the nurse of the unit about any injury found that might require immediate actions. (TE1)*

## DISCUSSION

The assessment of the skin conditions of the PTNB is considered essential in the scope of prevention, since it plays an important role in its recovery. The nursing professional needs to assess the skin conditions of PTNBs, as well as learning ways to maintain their integrity and treat injuries, thereby preventing damages to their health.

The physical examination aims at assessing the health status, identifying any problem and establishing a database for nursing intervention.<sup>10</sup> Many skin changes might be detected by the nursing professional during the conduction of procedures, and it is important to know how to detect them early, by acting in their treatment. The capacity to assess a skin lesion becomes an important competence in the care of the PTNB.

The knowledge about the care with the manipulation of the premature baby and its skin, and the limit of each intervention, allows the staff to achieve a new structure, with changes in paradigm. The daily practice of care of the PTNB requires the daily assessment of its skin, thereby promoting a descriptive evolution of this integument and enabling the diagnosis of any change in this barrier and its consequences.<sup>11</sup>

When detecting an injury, it is essential to classify it and describe it in an accurate manner. That is why the professional must be aware of any kind of injury, as small as it might be, also paying attention to the completion of registrations, which are of paramount importance for the monitoring of the treatment of the PTNB.<sup>6</sup>

It is believed that the role of the nursing professional within the NICU is crucial, since it dedicates itself on a full-time basis, by exerting functions that help in adapting the PTNB to the extra-uterine life. This role might be developed through the maintenance of heat balance, amount of moisture, light, sound and skin stimulation.<sup>1</sup>

According to professionals working within the NICU, erythemas and skin dryness are common in PTNBs, and the most common injuries are pressure ulcers in locations of bony prominences. Erythemas are reddish stains caused by congestion of the skin. Pressure ulcers are injuries arising from some kind of pressure, thereby causing decreased blood flow and skin irritation. As for skin dryness and peeling, they are provoked by the wear of the skin and loss of moisture, due to the bath and the warmed temperature in which the PTNBs are kept.<sup>11</sup>

Because of anatomical and physiological peculiarities of the skin of newborns, which make them prone to the development of skin lesions, the act of keeping it intact is something special, since it preserves protective functions and decreases the risk of infections resulting from the hospital admission.<sup>11</sup> The injuries caused by solutions of continuity might bring risk for the PTNB, since they are a gateway to infections, thereby causing pain and discomfort and hampering treatment.

Thus, it is important for the nursing staff to play a careful handling of the skin, because, in addition to taking the risk of suffering from physiological and traumatic injuries, the PTNB is also emotionally disturbed, which affects the evolution of its prognosis. Skin lesions in preterm newborns are difficult to handle, require special care shares, quick decision-making, effective intervention and accurate

attitude on the part of caregivers.<sup>6</sup> That is why to prevent them and treat them becomes a challenge for professionals of the nursing staff working in this field.

It is known that the nursing staff is one of the main responsible for the care of PTNBs within the NICU. As small and daily as the care offered might seem, from the moment of its admission to the time of its discharge, the PTNB is subjected to a series of handlings, which are stimulating factors for the emergence of injuries, due to its repetitive frequency and the fragility of its skin.

It is considered that it is a task of nurses to indicate a protocol for handling the skin of PTNBs, validating the daily and periodic care and intervening whenever required. That is why an instrument to assess daily the skin of PTNBs becomes important, thereby promoting a descriptive evolution of this integument and enabling the diagnosis of any change in this barrier and its consequences. The existence of a protocol allows making a diagnostic of prophylactic possibilities of skin impairment, such as the risks of skin breakage, topical substances liable to be changed in this integument, by expressing the way that the staff must follow while taking care of premature newborn with regard to its skin.<sup>11</sup>

Knowing how to care of the PTNB in an individualized and humanized manner involves touching, handling, interaction and communication with this little one, by offering better prospects for its survival.<sup>12</sup>

The limitation of this study was the reduced number of study participants. Accordingly, one should consider the need for further studies in other NICUs, as a way of expanding the knowledge about the experiences of nursing staffs that deal with skin lesions of premature newborns admitted to the sector at stake.

## CONCLUSION

This study aimed at understanding the experiences of the nursing staff with the skin lesions of premature newborns admitted to the Neonatal Intensive Care Unit. The study data have revealed that professionals identify the skin lesions in PTNBs through physical examination and assessing their skin conditions during the accomplishment of procedures. They have no difficulties in the assessment of skin lesions in the PTNBs.

They have highlighted venous punctures, fixing of stickers on the skin and skin dryness caused by high temperature of warmed cribs and incubators as causes of injuries. The pressure ulcers were identified due to the skin contact of PTNBs with wires and oximeter

sensors and heart monitors. Some injuries are caused by incorrectly changing position of the PTNBs.

As for nursing care in the face of injuries, it was found that professionals are concerned about injury prevention by performing periodic skin inspections of PTNBs. They implement measures to prevent injuries, such as care with fixings, in-service education, use of special solutions on the skin of the PTNB, proper mattresses and cushions and frequent position changes. They reported that the assessment of the skin of PTNB and its injuries is an important ability, since it drives the treatment and solvability of lesions.

It is concluded that the work of the professionals of the nursing staff in the prevention and treatment of skin lesions of the PTNB is a challenging action, given the need for constant handling of the child. These professionals need to develop ability to perform daily physical examinations in PTNBs in order to detect possible integument-related injuries. These workers must have an intensified care in handling equipment and devices that assist in the recovery of PTNBs, thereby avoiding the fixing of stickers on the skin as much as possible, by conducting frequent position changes and, lastly, developing and improving specific protocols for skin care.

The skin lesions of PTNBs are part of the daily work of nursing professionals within the NICUs. These workers must develop technical abilities and scientific knowledge to provide a comprehensive and humanized care, through skills that confirm their role as caregivers. The accomplishment of a qualified service depends on the training and sensitivity of professionals, which are acquired by means of their daily experiences of care, participation in in-service continuing education programs and reflection about their commitment to their role towards the PTNB.

Further studies should be conducted in the continuing search for effective strategies for the prevention and treatment of skin lesions in the PTNBs admitted to NICUs, given the importance of the integrity of this integument for the survival of these patients.

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