Original article

PATIENT SAFETY IN A NEONATAL UNIT: CONCERNS AND STRATEGIES EXPERIENCED BY PARENTS*

Fernanda Araujo Rodrigues[1], Wiliam Wegner[2], Karen Jeanne Cantarelli Kantorski[3], Eva Neri Rubim Pedro[4]

ABSTRACT: Objective: to analyze how parents identify patient safety in a neonatal unit. **Method:** this was a qualitative exploratory case study carried out in a large public hospital in the South of Brazil. Participants included 23 parents of children hospitalized in the neonatal unit, using semi-structured interviews, between June and August 2015. The data were submitted to thematic content analysis. **Results:** two categories emerged: "Concerns with Patient Safety" and "Strategies for Patient Safety." Family members reported concerns relative to access control to the unit, risk of infection and flawed communication among health team members. However, excellence of the care provided, loving care practices, and a protected environment were observed. **Conclusion:** despite some concerns, parents felt safe about the care provided, expressing more safety strategies than problems. **DESCRIPTORS:** Patient Safety; Hospitalized Child; Neonatal Nursing; Parents.

SEGURANÇA DO PACIENTE EM UNIDADE NEONATAL: PREOCUPAÇÕES E ESTRATÉGIAS VIVENCIADAS POR PAIS

RESUMO: Objetivo: analisar como os pais identificam a segurança do paciente em unidade neonatal. **Método:** estudo de caso exploratório, com abordagem qualitativa, realizado em hospital público de grande porte no sul do Brasil. Participaram do estudo 23 pais de crianças internadas na unidade neonatal, por meio de entrevista semiestruturada, no período entre junho e agosto de 2015. Realizou-se análise de conteúdo do tipo temática. **Resultados:** emergiram duas categorias: "Preocupações com a Segurança do Paciente" e "Estratégias para a Segurança do Paciente". Os familiares relataram preocupações relacionadas com o controle de acesso à unidade, risco de infecção e comunicação deficiente com a equipe de saúde. No entanto, percebem-se excelência no serviço prestado, prática de cuidado com amor e ambiente protegido. **Conclusão:** apesar de inquietações, os pais sentem-se seguros em relação à assistência, considerando que houve mais estratégias identificadas do que preocupações.
DESCRITORES: Segurança do Paciente; Criança Hospitalizada; Enfermagem Neonatal; Pais.

SEGURIDAD DEL PACIENTE EN UNIDAD NEONATAL: PREOCUPACIONES Y ESTRATEGIAS EXPERIMENTADAS POR PADRES

RESUMEN: Objetivo: analizar de qué modo los padres identifican la seguridad del paciente en unidad neonatal. **Método**: estudio de caso exploratorio con abordaje cualitativo, realizado en hospital público de gran porte en el Sur de Brasil. Participaron del estudio 23 padres de niños internados en la unidad neonatal, mediante entrevista semiestructurada, en el período entre junio y agosto de 2015. Se aplicó análisis de contenido de tipo temático. **Resultados**: surgieron dos categorías: "Preocupaciones por la Seguridad del Paciente" y "Estrategias para la Seguridad del Paciente". Los familiares informaron preocupaciones relacionadas con el control de acceso a la unidad, riesgo de infección y comunicación deficiente con el equipo de salud. No obstante, se percibió excelencia en el servicio brindado, práctica de atención con amor y ambiente protegido. **Conclusión**: a pesar de sus inquietudes, los padres se sienten seguros en relación a la atención, considerando que hubo más estrategias identificadas que preocupaciones.
DESCRIPTORES: Seguridad del Paciente; Niño Hospitalizado; Enfermería Neonatal; Padres.

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[1]Nurse. Master of Nursing. Expert in Health at the State Secretariat of Health. Porto Alegre, Rio Grande do Sul, Brazil.
[2]Nurse, PhD in Nursing. Adjunct Professor, School of Nursing, Federal University of Rio Grande do Sul. Porto Alegre, Rio Grande do Sul, Brazil.
[3]Nurse. Master of Nursing. PhD candidate in Nursing, Federal University of Rio Grande do Sul. Porto Alegre, Rio Grande do Sul, Brazil.
[4]Nurse. PhD in Education. Full Professor, School of Nursing, Federal University of Rio Grande do Sul. Porto Alegre, Rio Grande do Sul, Brazil.

Corresponding author:
Fernanda Araujo Rodrigues
State Secretariat of Health
Av. Bento Gonçalves, 3722 - 90650-001. Porto Alegre, RS, Brazil
E-mail: fernanda-rodrigues@saude.rs.gov.br

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INTRODUCTION

Neonatal intensive care units (NICUs) present distinct circumstances that permeate risks to children; thus, patient safety incidents, with or without harm, can occur regardless of the professional's intention. Incidents are defined as events that could have resulted in unnecessary harm; and adverse events, an incident that resulted in harm[1]. Thus, patient safety is defined as the reduction of risk of unnecessary healthcare-associated harm to an acceptable minimum[1].

A circumstance of care refers to the care provided, which includes factors beyond interventions, such as the health team, patient, family member, context and setting[2]. Safety incidents in NICUs are primarily associated with medication processes, whose causes are related to human factors[3]. Handling by multiple professionals and prolonged hospital stay represent elements that increase exposure to error[3].

Inserting fathers and/or mothers in the care routine benefits patients, the family member, and the institution. Even though care is delegated to parents, families are perceived as mere companions who help whenever convenient for professionals[4]. However, neonatal care must extend beyond the child, involving care for the family[4].

The presence of companions is an essential requisite to develop a safety culture, as parents express proactive attitudes such ascapacity of observation, protecting the child, and questioning professionals[2]. Therefore, it is important for health teams to be familiar with how parents' experience this situation.

In general, companions are considered partners in safety, identifying and preventing adverse events. Furthermore, knowledge about the family's perspective can contribute to changing the patient safety scenario[5]. Thus, in light of the paucity of studies about incidents/adverse events in NICUs[3] and the assumption that family participation has not been fully explored[6], the need for the present study is justified, based on the following guiding question: What are the concerns and strategies related to patient safety perceived by parents in a neonatal unit? Therefore, the aim of this study was to analyze how parents identify patient safety strategies in a neonatal unit.

METHOD

This was a qualitative exploratory case study. The aim of this approach is to develop hypotheses and propositions pertinent to the initial investigation[7]. The case was defined as: The experience of parents of hospitalized children in NICUs with patient safety.

The setting was the NICU of a large public hospital in the South region of Brazil, which is divided into eight wards, including twenty conventional intermediary care beds, ten transition kangaroo care beds, and twenty intensive care beds. The institution was certified by the Joint Commission International (JCI), which aims to prevent adverse events by developing risk management and patient safety policies, including the reporting, assessment and quality promotion of incidents and risks.

The participants were 23 family members, with 16 mothers and 7 fathers. Inclusion criteria were: being the mother/father of a child hospitalized between 5 and 50 days; being 18 years old or older, and being in emotional/psychological conditions to report their experience. Exclusion criteria were: being the mother/father of a child who suffered an abortion attempt; not visiting the child every day, or remaining less than an hour per day at the NICU.

Data were collected between June and August 2015 through semi-structured interviews that included questions about the hospital stay and patient safety. The number of participants was defined according to saturation criteria[8]. The interviews were carried out by one researcher in an isolated room outside the NICU and lasted an average of 20 minutes.

The gathered information was submitted to content analysis, which seeks to attribute meaning based on meaning units[8]. NVivo software version 10 was used to organize the information.

The present study abided by ethical precepts and was approved by are search ethics committee (Resolution no. 1.094.423). To ensure anonymity, participants received a letter code, followed by a number in the order of the interview. Mothers were identified using the letter "M", and fathers, the letter "F".

RESULTS

Two thematic categories emerged from content analysis: "concerns with patient safety" and "patient safety strategies". These categories and sub-categories are presented below.

Concerns withPatient Safety

Data processing resulted in the identification of 95 meaning units relative to situations considered by parents as possible safety risks to neonates. Sixteen participants mentioned at least one concern, regardless of the circumstance of care. Thus, five subcategories emerged relative to the absence of control of access to the NICU, insufficient information, problems with the unit's routine and team dynamics, failure in care provision, and risk of infection.

Under the "Access needs some more control" sub-category, participants associated access to the unit with concerns for the safety of neonates. These were expressed as follows:

The simple fact of arriving and ringing the bell and there's someone on the other side to see you.(F2)

Visitation needs to be controlled a bit more [...] *That's what most concerned me.* (M20)

Four parents pointed to communication as a cause for concern related to safety, thus composing the "Information in theory" subcategory. The following excerpts express this issue:

When entering the NICU there's a sign that says: Parents have the right to access to information [...] *but this is only in theory, in practice, that's not what happens.* (F2).

We need the doctor to come by more every day and talk to us [...] *I think they use very technical terms.* (M13)

Aspects related to the staff's dynamic and the unit's routine were listed as concerns by five participants, resulting in the sub-category called "It's been a bit harder". The interviews confirm this aspect:

It's been a bit harder because the staff has changed. (M1)

On the weekends, for example, for many people it's a waste of time, right? I say that because medical team planning only happens Monday to Friday. (F2)

That thing that saturates, the machines that beep, the ones with the drugs, everything that beeps, for me, is torture. (M7)

The sub-category "Something collateral happened" expressed the concern of eight participants regarding the care of the hospitalized child, as follows:

And [baby's name] *was naked and she was throwing water on him, giving him a bath* [...] *You can imagine how insecure I felt.* (M1)

Imagine what it's like going home knowing that they're running an unnecessary test. (F2)

They leave the umbilical cord there for nine days, right? He developed a thrombosis. (F11)

In my opinion, he was so brute about it [...] *that the little tube that was in the lungs came loose.* (F12)

Yeah, the attachment that is sometimes close to the eye [...] *and that makes me afraid.* (M14)

The sub-category "The baby comes in just fine, but then..." was related to the risk of infection. Two parents expressed such concerns:

Sometimes, the baby comes in just fine and ends up getting bacteria. (M8)

Some parents come in and out with the gowns, they go into the rooms, they don't wash their hands. (M9)

Patient Safety Strategies

Data processing revealed 196 meaning units related to implemented actions that aimed to ensure safe care, and all the participants referred to at least one strategy. This category was further divided into six sub-categories, which addressed issues such as control of access to the unit, effective communication, service excellence, care with empathy, precautions to avoid infections, assessing risk of falls, adequate patient identification, and measures to ensure the correct prescription/administration of medication.

In the "This is not a place for visitors" sub-category, access of parents and/or visitors was mentioned by seven participants; however, this time as a safety strategy. The following excerpts illustrate this.

I may not be here, but I know that nobody else can come in. (M3)

This 30-minute [visiting] *period too, when there's not a lot of movement of people, right? To protect each patient.* (F11)

You can't go in with a cell phone [...] *that's important because I wouldn't want someone to publish a picture of him.* (M20)

Under the "Everything is well talked out" sub-category, 15 participants reported effective communication as a strategy. This included communication between the health team and family members and communication among professionals, shown as follows:

Everything is very well talked out [...] *and even so everything is communicated to me.* (M1)

He [the doctor] *makes us feel safe, it's what every parent wants to hear.* (M7)

Issues such as unit structure, adequate staff sizing, and standard of care were cited by 12 participants as significant elements to patient safety, under the sub-category "Providing excellent care", as shown below:

Just having this milk bank here is something else. (M7)

He [baby] *is here thanks to our insurance* [paid], *but his little friends are not, and they receive the same care.* (F11)

They [nurses] *even transfer him* [baby] *from more severe care units to a more intermediary room.* (M16)

Under the sub-category "Care with love," 20 participants described care provision with empathy as a safety strategy for hospitalized children, as follows:

They do it as if it were their child, right? Like a mother would. (F7)

They don't care for them just as professionals, they do so with love. (M20)

Still in this sub-category, even though it is a criterion for JCI accreditation, only two participants mentioned patient identification. One of them said:

You can't provide care if you don't call patients by their name. (M7)

Other circumstances were related to the prevention of infection, as cited by eight participants. This led to the sub-category "You must wash your hands," with the following excerpts:

Each baby must have their own thermometer, each baby must have their own things. (M13)

You need to wash your hands, you must practice hygiene. (M20)

In the "Protected environment" sub-category, four participants described the assessment of fall risk and the implementation of measures to avoid falls as strategies, as follows:

When they [nursing technicians] *weigh him, they swaddle him up in a cloth* [...] *the incubator doors are always shut.*(M7)

DISCUSSION

With regards to access, under the "Access needs some more control" sub-category, which belonged to the first category, parents emphasized the availability of professionals at the reception. The presence of a secretary is suggested in the literature[9]. However, at the studied NICU, this professional was available during business hours; during other periods, they had to be reached through telephone, as they divided their workload among units.

In this context, it is important to highlight shared responsibility. When there are no professionals available, others take on their role in name of patient safety. However, such responsibility is not yet shared equally among team members[10].

This study identified a critical concern with the flow of people associated with the presence of a full-time professional at the reception. The form in which access is granted relates to embracement, a practice that can enhance the quality of service by taking into account both the family's wishes and the guidelines proposed by healthcare policies and by quality certification agencies[11].

Additionally, it is important to note that in the present NICU, mothers and fathers had access 24 hours a day. Other individuals must abide by a pre-established time of 30 minutes whereby the parents list which visitors are permitted.

Regarding the "This is no place for visitors" sub-category, part of the second category, in general, the parents approved of the rules regarding access to the NICU. The institution has controls that start at the central reception center, where documents are required to obtain an identification badge, and go up to the closed NICU doors, which are only opened after identification via the interphone.

In the "Information in theory" sub-category, some participants identified insufficient communication as a concern. However, it is up to professionals to minimize this situation. This finding corroborates that of a study that identified that the presence of multi-professional teams helps avoid this consequence, as they have a trained ear to listen to the demands of companions and provide information[12].

In contrast, the "Everything is well talked out" sub-category, most participants valued dialogue and felt safe, reporting peace of mind when going home. This corroborates that transmitting information reduces parental anxiety levels and increases their satisfaction[13].

Another study considered communication between health teams and family members as a form of providing guidance about care in the home setting, a place in which parents do not have help[2]. Along the same lines, some participants made declarations about receiving orientation relative to the safety of neonates.

Currently, there is still an important and potentially transformative potential in the role of family members. When effective communication is provided about diagnosis and treatment, parental involvement in their child's care is fostered[14].

Nurses are essential in this context, because without the use of effective communication, they become merely technical professionals, leaving a gap in care[12]. Flawed communication contributes to parental distress, especially when they are not consulted or informed about procedures or events[15].

Under the "It's been a bit harder" category, as in other studies, participants considered the location unwelcoming and voiced concerns about professional rotativity, having to adapt to a technology-rich environment, with several types of noise, which can trigger fear[12].

Additionally, the use of equipment can be related to adverse events. Adverse events related to medical -hospital devices include: device defects, use errors, use in improper circumstances, and lack of preventive maintenance[16].

Still on team dynamics and the unit's routine, under "Providing excellent care," the structure, composed of wards according to the clinical staff; the human milk bank; and staff sizing were mentioned as elements that foster patient safety. The importance of the human milk bank was related to the understanding of mothers' that milk helps the infant recovery during the hospital stay, representing a natural form of protection[13].

The participants praised the size of the nursing staff, receiving equal care during all the work shifts, contrary to the findings of a similar study, in which participants complained of the insufficient number of professionals[2]. Adequate staff sizing in terms of workload is directly associated with quality of care[17] and, consequently, patient safety.

The "Something collateral happened" sub-category emerged from the fear associated with some care procedures. This included: body temperature regulation and thrombogenesis caused by prolonged permanence of the umbilical catheter.

The parents identified risks in accordance with the literature. Thrombogenesis is rare in the first five days after catheter insertion, after which there is a predisposition to portal thrombosis; and this type of harm is associated with factors such as pre-eclampsia and prematurity[18], as in the case of the patient in the present study.

Still regarding care errors, this study observed concerns about extubation. In some services, aspiration follows criteria based on professional experience, maximizing the risk of complications[19]. There are also potential errors associated with accidental extubation. A study showed that 38% of cases were associated with blockage caused by secretions, which resulted in insufficient aspiration[20]. Another study correlated extubation with careless x-ray procedures[21].

One participant also highlighted possible injury due to the fixation of the CPAP (Continuous Positive Airway Pressure) device. Some aspects that contribute to such injuries are prong size and inadequate fixation methods[22]. It is worth emphasizing that in this NICU, hydrocolloid dressings with aluminum compresses are used to minimize friction between the prong and the nasal septum. Regarding fixation, the same hydrocolloid dressing was used in regions exposed to the elastic.

Expanding on the discussion about care, it was possible to infer the recognition of humanized care from the "Care with love" sub-category. In this context, the nursing team plays a primordial role. Nursing practice must be focused on care, which is based on knowledge, the construction of adequate relationships, and skills to promote a safe environment[17].

Despite the relevance of patient identification, there were gaps in this routine, recognized by only two participants. However, after this issue was identified, the institution created a patient identification plan, which established criteria for correct identification. Identification is a multidisciplinary responsibility, involving aspects of infrastructure, work processes, organizational culture, professional practice and user participation[23].

Another circumstance that emerged as a strategy in only two interviews was the safe administration of medications. Drug therapy involves several steps: prescription/scheduling, preparation, administration, and monitoring drug action/reaction[24]. The NICU used computerized prescriptions. Medical prescriptions included the name of the drug, presentation and posology; while the nursing prescriptions included calculations for dilution, considering fractional doses.

Regarding the relevance of nurses in this process, it is worth emphasizing that despite recommendations for more complex procedures to be performed by nurses, in practice, activities tend to be distributed equally between nurses and nursing technicians[24]. However, this situation was not observed in the present study, in which some procedures were exclusively carried out by nurses, such as preparing intravenous medication like prostaglandin E1.

Infusion pumps are recommended to achieve greater drip control and to dispense unit doses, which present labels with complete information[24-25]. These conditions were observed in the present study.

The sub-category "The baby comes in just fine, but then..." addresses concerns about risk of infection. Along the same lines, another study showed that parents observed that visitors and employees did not always follow good prevention practices[15]. Infection is a multifactorial process and can be caused by physical structure, insufficient staff sizing, overcrowding, and not noncompliance with hygiene standards[26].
Furthermore, under the "You must wash your hands" sub-category, the participants emphasized restrictions to touching infants. This method was explained in a publication that suggests minimum handling in order to avoid unnecessary manipulation[27]. This can be considered a patient safety promotion strategy in neonatal care.

The use of disposable materials and individual supplies was also cited as a strategy. In addition to these factors, other care-related precautions were related to infection control, such as the routine ventilatory circuit changes, recording the day of dressing change and equipment opening. All these actions were routine in the studied NICU.

Finally, "Protected environment" addressed the precaution of professionals, especially nursing technicians, regarding the risk of falls. This can be explained by the patient safety culture constructed with the help of a care protocol for falls of neonates created by the institution, which contributed to the systematizing and enhancing quality of care.

The NICU is considered a service of risk, which is why patients did not use differentiated identification bracelets. Still on the risk of falls, prevention is a shared responsibility among the professional team and family members, constituting an element of neonatal patient safety[2].

The statements of participants about the risk of fall were compatible with the recommendations in the literature: keeping crib/incubator wheels locked in position, keeping incubator portholes closed; swaddling infants when weighing and bathing; and carrying out nursing prescriptions contemplating such actions[2].

Limitations of this study include the difficulty of carrying out interviews, considering the complexity of the theme. There is still much to be studied about the topic; and because it was a qualitative case study, analysis is restricted to this specific context. Thus, it would be relevant to reproduce the investigation in another establishment to include different settings.

● FINAL CONSIDERATIONS

On analyzing how patients perceived safety of the hospitalized infant in the NICU, this study showed that despite some concerns, the participants felt safe. They made significantly more references to situations classified as patient safety strategies than to concerns with patient safety. This fact shows a positive feature of the characteristic of the institution, which as a JCI certified facility, places patient safety front and center.

The study demonstrated some problems related to the unit's and team's routine and failures in care. Furthermore, it points to possibilities to qualify professional practice. To this end, the researchers suggest investing in effective communication, through ongoing spaces for dialogue between care teams and family members; as well as maintaining adequate staff sizing, in order to suitably carry out actions, such as skin assessment, safe administration of medication, and care related with mechanical ventilation.

Analyzing how the health team recognizes/values the role of parents during their infant's hospital stays can help guide the construction of safe care, as the search for patient safety requires mutual effort.

The main contributions of this study include recognizing parents and the responsibility given to them during hospitalization; the possibility of qualifying care, based on the adoption of conducts in accordance with the described strategies; and, consequently, developing a culture of patient safety.

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