

NURSING ATTENTION DEMANDS AT A NEONATAL, PEDIATRIC AND GENERAL INTENSIVE CARE UNIT

Danilo Marcelo Araujo dos Santos¹, Francisca Georgina Macedo de Sousa², Thaís Marques Moreira³, Andréa Cristina Oliveira Silva², Lorena Carvalho Braga⁴

¹RN.M. Sc. in Nursing. University Hospital at Universidade Federal do Maranhão. São Luís, MA, Brazil.

²RN. Ph.D. in Nursing. Faculty at Universidade Federal do Maranhão. São Luís, MA, Brazil.

³RN. Administrative Nurse at Vidas Resgate e Home Care. São Luís, MA, Brazil.

⁴RN. Resident at University Hospital of Universidade Federal do Maranhão. São Luís, MA, Brazil.

ABSTRACT: Descriptive and quantitative study to identify intensive nursing attention demands and the efforts these professionals make to cope with these demands. The research was developed in three intensive care contexts (pediatric, neonatal and general) at a hospital in the Brazilian Northeast. The data were collected between May 2011 and June 2012, based on the tool Directed Attention Demands. The demands that most required nursing attention are concentrated in the Domain Physical and Psychological Environment and were associated with the physical facilities of the work environment, with the nurse's emotions and concerns in the care relations. The results suggest the establishment of interventions in the environment, in the structure and in the care practices with a view to favoring a better quality of care and quality of life for the nurses.

DESCRIPTORS: Nursing; Intensive care units; Intensive care.

DEMANDAS DE ATENÇÃO DO ENFERMEIRO EM UNIDADE DE TERAPIA INTENSIVA NEONATAL, PEDIÁTRICA E GERAL

RESUMO: Estudo descritivo quantitativo com objetivo de identificar demandas de atenção do enfermeiro intensivista e o esforço depreendido por este profissional para lidar com estas demandas. A pesquisa foi desenvolvida em três contextos da terapia intensiva (pediátrica, neonatal e geral) de um hospital do nordeste brasileiro. Participaram da pesquisa 34 enfermeiros com exercício profissional em uma das Unidades de Terapia Intensiva. Os dados foram coletados no período de maio de 2011 a junho de 2012, apoiado pelo instrumento Demandas de Atenção Dirigida. As demandas que mais exigiram atenção do enfermeiro concentram-se no Domínio Ambiente Físico e Psicológico e estavam associadas às instalações físicas do ambiente de trabalho, às emoções e preocupações do enfermeiro nas relações assistenciais. Os resultados sugerem estabelecimento de intervenções no ambiente, na estrutura e nas práticas de cuidado com vistas a favorecer melhor qualidade da assistência e de vida dos enfermeiros.

DESCRIPTORES: Enfermagem; Unidades de terapia intensiva; Cuidado intensivo.

DEMANDAS DE ATENCIÓN DEL ENFERMERO EN UNIDAD DE TERAPIA INTENSIVA NEONATAL, PEDIÁTRICA Y GENERAL

RESUMEN: Estudio descriptivo cuantitativo con objetivo de identificar demandas de atención del enfermero intensivista y el esfuerzo hecho por ese profesional para trabajar con esas demandas. La investigación fue desarrollada en tres contextos de terapia intensiva (pediátrica, neonatal y general) de un hospital del nordeste brasileño. Participaron de la investigación 34 enfermeros con ejercicio profesional en una de las Unidades de Terapia Intensiva. Los datos fueron obtenidos en el periodo de mayo de 2011 a junio de 2012, apoyado por el instrumento Demandas de Atención Dirigida. Las demandas que más exigieron atención del enfermero se concentran en el Dominio Ambiente Físico y Psicológico y estaban asociadas a las instalaciones físicas del ambiente de trabajo, a las emociones y preocupaciones del enfermero en las relaciones asistenciales. Los resultados sugieren establecimiento de intervenciones en el ambiente, en la estructura y en las prácticas de cuidado con fines de favorecer más cualidad de la asistencia y de vida de los enfermeros.

DESCRIPTORES: Enfermería; Unidades de terapia intensiva; Cuidado intensivo.

Corresponding author:

Danilo Marcelo Araujo dos Santos
Universidade Federal do Maranhão
R. Silva Jardim, 215, - 65021-000 - São Luís, MA, Brasil
E-mail: danilo.santos@huufma.br

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INTRODUCTION

In the context of the Intensive Care Unit (ICU), the nurse's work is permeated by multiple care demands, deriving from the complexity and delivery of care, from the work environment and from the health institution⁽¹⁾. These demands are situations that require technical and attitudinal competences from the nurse with a view to agile, secure and precise care.

Using attention in nursing work is essential for the development of daily activities, which involve both patient care planning and delivery, including patients at imminent risk of death⁽²⁾. Besides these tasks, the author highlights that the nurses are responsible for coordinating the activities in the sector, despite factors like excessive noise, intense lighting, work overload and conflicts. Those conditions require greater Attention Direction Capacity (ADC) from the nurses, concerning individual abilities to inhibit stimuli and competitive distractions, in the internal as well as the external environment, while processing and organizing important information, a condition that requires the use of mental effort⁽³⁾. Attention is considered to be the concentration of the mind on an object or thought, although several other stimuli occur simultaneously⁽²⁾.

In daily practice, ICU nurses should focus on multiple and frequently competitive demands deriving from the great variety of stimuli in the environment while delivering care to patients and their relatives, at the same time as they relate with colleagues and other professionals⁽²⁾. The nurses' constant exposure to these sources of care demands can cause fatigue, as observed by the reduction of ADC, which can influence the planning and implementation of care⁽¹⁾. Thus, it is important to reflect on the question that permitted the development of this research: What are the nursing attention demands in the pediatric, neonatal and general intensive care context? What efforts do the nurses make in each demand?

Based on these inquiries, the assessment of these work demands and associated factors has shown to be fundamental as a resource to manage the services. In those circumstances, a nursing team with background knowledge on the factors associated with the high workload can establish strategies to admit the patient to the unit and proceed with the care process in order to guarantee the quality and efficiency of the nurse's function. Therefore, knowledge on the factors associated with the nursing workload is a

fundamental resource for the nurses in their ICU practice⁽⁴⁾. Hence, attention, in combination with technical and scientific knowledge, is essential for the nurse to be able to effectively cope with the highly complex and specialized demands their work requires in the exercise of their profession⁽⁵⁾.

Thus, developing a study on this theme contributes to understand the nurses' work process at the ICU, contributing to the care planning with a view to responding to the patients and families' demands for attention.

The objective in this research was to identify the Nurse's attention demands in the Pediatric, Neonatal and General ICU contexts, as well as the efforts made to cope with these demands.

METHOD

A cross-sectional, prospective, descriptive and quantitative study was developed at three ICUs (Pediatric, Neonatal and General) of a University Hospital in the Brazilian Northeast.

Thirty-four nurses participated in the research, nine of whom developed their professional activities at the Pediatric ICU, 15 at the Neonatal ICU and 10 at the General ICU. The following inclusion criteria were established: being a nurse and having worked at the service for at least six months. Two nurses were excluded who were on medical leave at the time of the data collection.

The data were collected between May 2011 and June 2012, using the tool Directed Attention Demands – DAD, validated and adapted to the Brazilian culture, with the goal of identifying the different sources of attention demands the nurses are exposed to in their work environment⁽¹⁾. This tool consists of 39 items, grouped in the domains: Psychological, Behavioral and Physical Environment.

The Psychological domain consists of 12 items, which involve emotions and concerns that function as a source of distraction for the professional. The behavioral domain consists of 13 physical, social or situational items that interfere in or restrict the person's capacity to direct their attention. The Physical Environment domain contains 14 items that focus on factors in the external environment that demand increased mental effort from the professional to perform a certain activity.

Each item in the tool has two types of measures: the first questions how frequently a certain

situation was experienced, represented by a Likert scale with the following alternative answers: “never”, “rarely” “sometimes”, “occasionally/moderately” and “often/all the time” with scores ranging from zero to four.

The second measure refers to the intensity, that is, how much mental effort was needed to cope with that situation. Therefore, a visual analogue scale from zero to 100 mm was used with two extremes (no effort/not demanding and extreme effort/extremely demanding), that is, the greater the effort the situation required, the higher the score will be.

One of the researchers delivered the form to each of the participants at their place of work and during work hours. On that occasion, a day and time was set to return it. A new date, coinciding with the professional’s subsequent shift, was scheduled with those who for some reason did not return the form on the first opportunity.

The collected data were inserted in a Microsoft Excel 2010 worksheet according to each ICU. For analysis purposes, descriptive statistics were used, primarily considering the frequency and intensity of each demand. The total score of each demand situation was obtained by multiplying the frequency by the intensity. To obtain the Arithmetic Mean (\bar{x}) of the demand situations, the sum (Σ) of the frequency was multiplied by the sum (Σ) of the intensity divided by the number of nurses (n), with results ranging between zero and 400. The research results are presented based on the mean scores in each demand situation. The formula used to reach the mean demand score was as follows:

$$\bar{x} = \frac{(\Sigma \text{frequency}) \times (\Sigma \text{intensity})}{n}$$

Demands were considered as situations that required attention from the nurse with mean scores of 60 or more. The demands with mean scores inferior to 60 were defined as situations that required less attention from these professionals in their ICU activities.

The data were analyzed from two perspectives, the first based on the mean demand score (frequency versus intensity) and the second considering only the mean intensity. This strategy was chosen because, in daily care at the ICU, some procedures/techniques, although more frequent, require less attention. On the other hand, there are less frequent situations in the care process

that require a greater demand for attention, like the death of a patient or cardiopulmonary reanimation.

This research is part of the project “Needs of Relatives of Patients Hospitalized and Nursing Attention Demands at an Intensive Care Unit”, approved by the Research Ethics Committee at the University Hospital of Universidade Federal do Maranhão under Opinion 092/11 on May 06th 2011. The nurses who complied with the inclusion criteria were invited to participate in the research and asked to sign the Free and Informed Consent Form. In the development of the research, all ethical aspects required in the Brazilian legislation were complied with.

RESULTS

Table 1 shows the demand situations that most required the nurses’ attention and, in Table 2, the least demanding situations are displayed, organized in decreasing order of the arithmetic average (\bar{x}), considering frequency versus intensity of the three intensive care units. In the subsequent columns of the tables, the arithmetic averages per unit, mean intensity and relative frequency of each demand at the three units are shown.

When the domains of the DAD tool and the mean frequency versus intensity are considered, the demands in the physical and psychological environment obtained the highest averages. These domains develop situations associated with the physical facilities of the work environment, emotions and concerns, which demands greater capacity from the nurses to focus their attention on care delivery⁽⁶⁾.

Among the 14 demands in the Physical Domain of the DAD, 11 (78.6%) required further attention from the ICU nurse. Among these, the following are emphasized: high level of noise (\bar{x} =261.8); the work environment crowded with material and equipment (\bar{x} =165.8); the presence of too many people at a work station (\bar{x} =165.7); insufficient staff to appropriately cover the unit (\bar{x} =149.3); many rapid decisions had to be made (\bar{x} =132.5); unpredictable staff and work scale (\bar{x} =115.0); tasks were required that lie beyond nursing work, such as bureaucratic work (\bar{x} =108.5); and insufficient time to grant emotional support to a patient (\bar{x} =98.5).

Among the 12 items in the Psychological Domain, four (33.3%) obtained the highest averages: observing a patient’s suffering (\bar{x} =216.0);

Table 1 – Demand situations that most required the nurse’s attention, considering the general average, means per ICU, mean intensity and relative frequency. São Luís, MA, Brazil, 2012

Demand Situations	D*	Demand Score (Frequency x Intensity)				Intensity	Frequency (%)		
		General	UTI Ped	UTI Neo	UTI General		0 day	1-2 days	≥3 days
High level of noise at the service	F	261.8	342.4	199.2	243.7	72.1	4.4	4.4	91.1
Observe a patient's suffering	P	216.0	253.6	162.4	232.1	63.9	4.4	29.9	65.3
Execution of procedures the patients experience as painful	P	184.4	256.2	164.7	132.2	56.1	4.4	43.2	52.0
Work environment crowded with material and equipment	F	165.8	246.1	77.4	173.9	50.7	14.4	34.7	50.5
Too many people at their work unit	F	165.7	152.3	71.7	273.1	50.7	26.5	21.8	51.3
Feeling of impotence when a patient is unable to get better	P	163.0	190.4	143.7	154.8	57.5	9.2	43.2	47.2
Insufficient staff to cover the service appropriately	F	149.3	92.4	138.7	216.9	53.3	9.5	43.4	46.7
Need to provide orientations to the family	P	135.3	217.1	89.1	99.8	39.7	10.0	22.1	67.5
Many rapid decisions had to be made	F	132.5	168.8	98.6	130.0	42.9	4.4	41.0	54.2
Taking care of families with emotional needs	P	121.2	155.3	117.7	90.6	46.0	19.2	41.7	38.8
Unpredictable staff and work scale	F	115.0	118.0	66.5	160.6	42.4	25.4	40.2	34.0
Tasks were required that are not nursing tasks, such as bureaucratic work	F	108.5	207.7	50.4	67.3	31.7	33.5	42.4	23.7
Insufficient time to give emotional support to a patient	F	98.5	33.8	67.2	194.4	36.5	31.7	33.5	34.4
Fear of committing an error when taking care of a patient	P	95.6	179.9	45.2	61.6	45.4	21.4	67.2	11.0
Confused or disorganized work environment	F	88.5	140.4	45.3	79.8	43.4	14.8	70.9	14.0
Insufficient time to complete all nursing tasks	F	86.6	49.2	104.7	105.9	37.2	29.2	71.5	18.9
Taking care of patients with intense emotional support needs	P	82.0	61.0	74.8	110.2	30.2	39.8	25.9	34.0
Multiple nursing activities had to be completed	F	77.8	38.3	78.4	116.8	30.4	14.8	36.5	52.0
The death of a patient	P	73.3	54.9	28.3	136.8	38.0	41.3	38.3	20.0
Not knowing what to tell a patient or relative about the patient's condition	C	63.1	78.0	87.8	23.6	34.4	46.1	42.9	10.7

*D= Domains: F= Physical Environment; P= Psychological; C= Behavioral

execution of procedures the patients experienced as painful ($\bar{x}=184.4$); feeling of impotence in view of a patient who is unable to get better ($\bar{x}=163.0$); and need to grant orientation to the family ($\bar{x}=135.3$).

The demands in the Behavioral Domain showed lower averages than in the Physical and Psychological Domains, and only "not knowing what to tell a patient or relative about that patient's conditions" ($\bar{x}=63.1$) figures among the main demands.

When intensity is considered in isolation, the demands that most required the ICU nurses' attention were: high noise level at the unit (Physical Environment Domain); watching a patient's suffering (Psychological Domain); feeling of impotence in view of a patient who is unable to get better (Psychological Domain); execution of procedures the patients experience as being painful (Psychological Domain) and Insufficient staff to cover the service appropriately (Physical Environment Domain).

The nurses appointed the high level of noise at the service, the need to grant orientations to the family and watching a patient's suffering as the most frequent demands, which occurred three or more times per week.

When considering each service, the demand high noise level at the service was the main cause of increased mental effort for the nurses at the Pediatric and Neonatal ICUs. At the Pediatric ICU, a higher average ($\bar{x}=342.4$) was observed than at the Neonatal ICU ($\bar{x}=199.2$). At the General ICU, this was the second main demand, with a higher average ($\bar{x}=243.7$) than at the Neonatal ICU.

When considering the five demands that most required the nurse's attention, the situation "too many people at their work station" scored higher at the General ICU, while the demands "high noise level at the service", "observing a patient's suffering", "execution of procedures the patients experience as painful" and "work environment crowded with material and equipment obtained higher averages at the Pediatric ICU.

The most intense demands for the ICU nurse showed high frequencies in the daily practices at the services under analysis, particularly "high noise level at the service", which revealed the highest mean intensity on a scale from zero to 100 ($\bar{x}=72.1$) and 91.1% of the nurses appointed it as a demand present on three or more days in a work week at the ICU (Table 1).

Table 2 displays the demands that least requires the intensive care nurse's attention, with averages inferior to 60 for the relation between frequency and intensity.

The demands with lower mean scores were "conflict with a supervisor" ($\bar{x}=6.1$) and "absence of the physician from the service when a patient dies" ($\bar{x}=6.7$), both in the Behavioral Domain. The situation "need to give advice to the patient", although the most frequent in a work week, being present on three days or more, according to 35.1% of the nurses, demanded little effort from these professionals, with a mean intensity of 16.1.

DISCUSSION

This research permitted identifying the attention demands of intensive care nurses. At the three intensive care services investigated, the demands that required greater attention from the nurse were "high noise level of the service", "observing a patient's suffering", "execution of procedures the patients experience as painful", "work environment crowded with material and equipment" and "too many people at their work station". The latter showed a higher score at the General ICU than at the other two services, while the remainder obtained higher scores at the Pediatric ICU.

The separate analysis of the demand situations per ICU shows noise as the main cause of nursing attention at the pediatric and neonatal services and the second main cause at the General ICU.

In that sense, activities in an environment with constant and excessive noise represent a determining factor for physical, mental and social problems in health professionals, constituting sources of distraction for the nurse and hampering communication among people, as it implies the mistaken understanding of words or phrases, which can induce the professionals to errors in care delivery, compromising patient safety⁽⁶⁻⁷⁾. Another study⁽⁸⁾ evidenced that noise entails repercussions beyond the professional sphere, as mothers of infants hospitalized in intensive care did not spend more time at their infants' side because they felt the need to leave the ICU environment due to the excessive noise, which compromises the interaction and strengthening of the mother-baby bond.

Some studies have identified intensive care as a noisy care environment^(6,9-12), indicating the need to reduce the noise from the perspective of turning this environment healthier and safer

Table 2 – Demand situations that least required the nurse’s attention, considering the general average, the means per ICU, the mean intensity and relative frequency. São Luís, MA, Brazil, 2012

Demand Situations	D*	Demand Intensity(Frequency x Intensity)				Intensity	Frequency (%)		
		General	Ped ICU	Neo ICU	General ICU		0 days	1-2 days	≥3 days
Cardiac arrests had to be attended to	F	58.3	60.4	36.1	78.4	34.3	43.2	47.5	8.9
Lack of opportunity to share experiences and feelings with other people at the service	C	58.2	70.9	62.9	40.9	26.5	41.7	47.7	10.3
Lack of opportunity to talk openly about service problems with other people working there	C	53.3	78.9	49.7	31.4	29.7	45.3	47.7	6.7
Need to provide the patient with orientation	P	48.8	16.9	29.1	100.3	16.1	43.9	20.7	35.1
Lack of opportunity to express feelings with regard to the patients	C	39.2	77.4	16.8	23.3	16.8	57.9	31.4	10.3
Disagreement about a patient’s treatment	C	38.9	80.4	16.1	20.1	23.0	54.5	39.5	3.3
Inappropriate information by a physician about a patient’s clinical condition	C	37.0	92.5	0.0	18.5	18.1	61.1	32.2	6.7
The death of a patient with whom you developed a very close relationship	P	32.9	0.0	29.8	68.9	21.5	66.7	33.3	0.0
Uncertainty about the operation and functioning of specialized equipment	F	28.2	11.6	17.3	55.9	17.3	54.5	41.8	3.3
Making a difficult decision about a patient when the physician is not available	P	26.0	0.0	11.3	66.6	16.6	71.1	28.9	0.0
Absence of the physician when starting emergency care	C	24.8	62.4	5.1	6.8	17.2	63.8	32.5	3.3
Talk with a patient about his approaching death	P	17.7	0.0	6.7	46.3	8.7	85.5	11.1	3.3
Turnover to other services with low staff numbers	F	17.6	0.0	8.3	44.4	6.8	88.9	7.8	3.3
Difficulty to work with a certain nurse at the service	C	16.8	30.9	0.0	19.5	10.4	76.7	23.3	0.0
Criticism by a supervisor	C	16.0	29.8	11.1	7.0	12.7	64.9	34.8	0.0
Conflict with a physician	C	15.9	42.6	0.0	5.1	9.9	82.2	17.8	0.0
Criticism by a physician	C	15.7	39.5	0.0	7.7	8.9	80.0	16.7	3.3
Absence of the physician from the service when a patient dies	C	6.7	20.0	0.0	0.0	4.9	90.0	10.0	0.0
Conflict with a supervisor	C	6.1	11.7	0.0	6.5	5.3	86.7	13.3	0.0

*D= Domains: F= Physical Environment; P= Psychological; B=Behavioral

for everyone working in the intensive care context⁽¹³⁻¹⁶⁾.

Considering the demands that most required the nurses' attention in the intensive care context, it can be inferred that this is a complex environment full of stressful factors, as the work rhythm at the service is intense and the possibility of problems and death is present at all times, including the patients and families' suffering, the work overload, the execution of multiple and complex activities, the disorganization of the service and the work process, insufficient staff numbers and excessive noise, contributing to professional exhaustion⁽¹⁷⁾.

The demand situations that most required the nurses' attention at the services were related to the Physical and Psychological Environment domains. These domains develop situations associated with the physical facilities of the work environment, with the emotions and concern, demanding greater skills from the nurses to focus on care delivery. In addition, there is the execution of different procedures that can cause the patients' pain and suffering. The demand "observing a patient's suffering" stands out in intensive care nursing, as contact with this situation is daily and is linked with other situations involving emergencies, suffering and often the patient's loss. Working with suffering, pain and being present at the time of death cause increasing occupational stress in the nurses, which can trigger exhaustion and suffering⁽¹⁸⁾.

Therefore, being capable of executing procedures, mainly when painful, and observing the patients' pain psychologically affects the nurses and demands that they have skills to cope with the simultaneous physical, biological, behavioral and psychological demands.

The demands with lower averages in the Psychological Domain were: "talking to a patient about his approaching death"; "making a difficult decision about a patient when the physician is unavailable"; and "the death of a patient with whom you developed a very close relationship". Although nursing is one of the health professions that is most susceptible to occupational stress due to the direct, intense and prolonged contact with the patients, especially in intensive care, these demands required less attention from the nurses. Talking about death and having contact with this condition in the intensive care nursing work process can be appointed as an expected event due to the patients' clinical condition and can be considered as a transition and natural process

related to the human lifecycle⁽¹⁹⁾. On the other hand, death can emerge as a difficult process that involves these professionals' suffering or emotional exhaustion or take the form of limited knowledge to cope with it, as nursing education is focused on technical and practical actions, with little background on the needs of patients and their families in end-of-life situations⁽²⁰⁾.

The demands in the Behavioral Domain are related to the nurses' interpersonal relationship with the other team members, including their possibility to express themselves⁽²⁾. The averages found in this domain were low when compared to those found in the other domains. When assessing the averages of each ICU, it is identified, especially at the Neonatal ICU, that several of these demands obtained score zero. In that Domain, the low average for the situation "lack of opportunity to express feelings towards the patients" can reveal the absence of spaces for dialogue and verbal interaction, reports and discussions about the implications of daily work in the nurses' emotional and professional dimension.

The situations that least required the nurses' attention referred to the demands deriving from conflicts or criticism, demonstrating that the teams from the three investigated sectors present a good interpersonal relationship with the other professionals and heads. In that sense, it is emphasized that the hierarchy and relations among the professionals and with their supervisors (supervisions, heads, coordinators) are important tools for the job world, capable of interfering in the workers' personal motivation and satisfaction in their daily practices, entailing positive repercussions that express the quality of the work environment.

CONCLUSION

The research permitted identifying the demands that most required the intensive care nurses' attention in the context of pediatric, neonatal and general intensive care. Despite the particularities of each context, the demands showed different averages and were concentrated in the Physical and Psychological Environments. The demands in the Behavioral Domain showed lower averages and, hence, demanded less attention from the nurses. That was noteworthy, as these demands particularly refer to the nurses' interaction processes with patients and other professionals.

The attention demands identified expose the need for institutional improvements that reduce the nurses' mental effort and physical exhaustion, thus avoiding fatigue, so that these professionals' ability to focus during intensive care delivery is not impaired. In that perspective, the demand situations related to the environment can be solved or mitigated in the short term. On the other hand, human resource management should favor expression and qualified listening to the problems in the Psychological domain as a way to promote the nurses and other professionals' occupational health.

These results revealed some proposals that could not be developed due to the type of study, among which: have the ICU nurses valued the high technological density and invested less in the relations and interactions with the users? Does nursing care in intensive therapy rest on procedures and is it disease-centered? Perhaps a qualitative approach can explain the reasons for the low averages in this domain, as the interactions permeate the care relations and should be intense in the ICU context, conditions that suggest other studies focused on the life world of nurses and intensive therapy.

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