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Indicators for the assessment of the quality of nursing care: a descriptive-exploratory study

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ABSTRACT

Aim: to identify the main indicators for assessing the quality of nursing care from the perspective of nurses. **Method:** this is a descriptive-exploratory study involving a qualitative approach, with 14 nurses from the medical clinic units of a university hospital in Rio de Janeiro. The data were collected by semi-structured interview and treated by descriptive statistics and content analysis. **Results:** according to nurses' reports, the three priority indicators were: incidence of pressure injury, incidence of fall, and incidence of phlebitis. **Conclusion:** The evaluation of the risk factors that may trigger pressure injury, fall and phlebitis are within the scope of the nurse, who can develop preventive strategies that are based on nursing protocols such as change of position, evaluation and change of vascular access devices.

Descriptors: Quality Indicators, Health Care; Nursing; Quality of Health Care.

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INTRODUCTION

The use of health quality indicators to assess the quality of care is of paramount importance in improving processes, especially when the objective is to seek accreditation with regard to hospital accreditation programs. The concern with the quality of care provided at health facilities is justified, because the demands of citizens are becoming greater, since they are more aware of their rights and possess a better level of information[1].

Based on the premise that the monitoring of work processes in care, through a comparative analysis of indicators, are important for the evaluation of hospital services, it is understood that the use of quality indicators is valuable in terms of guiding actions as part of the management plans of health units[2].

Quality indicators can be understood as measures used to help diagnose an existing situation, assess changes or trends over a period of time, and to qualitatively and quantitatively assess health actions[3].

The elaboration of indicators stands out as a strategy for assessing the quality of care, managing results, strengthening trust on the part of users, and supporting the evaluation of services and decision-making by managers[4]. Therefore, such indicators should be easy to analyze and interpret, and also be understandable on the part of all users of the information.

The management of care information is an important part of quality of care management processes, since it depends and impacts on all the activities carried out in health institutions, especially in a hospital unit which is characterized by the complexity of the assistance it offers and its massive information production[5].

In this context, the evaluation of the quality of nursing care is of great relevance, in that a professional group, in the development of its work processes, has the opportunity to interact directly and continuously with users, thus reflecting, to a large extent, on the quality of hospital unit management and care[6].

In order for nurses to be able to develop tools for evaluating their work, it is necessary to collect reliable information that consistently and systematically reveals the reality of daily care. In this section, elaborating and using indicators of patient care evaluation is an important tool for analyzing work processes, allowing for reflections and improvements that have an impact on patient safety[7].

When adopting indicators as a management tool to assess the quality of nursing care, institutions should build a culture of evaluation, recommending an educational orientation for information analysis and for the elaboration of impact indicators, with a view to enhancing the excellence of the care provided. To do this, nurses are given the task of defining a set of indicators that are indispensable for the monitoring of their practice[7].

In view of the above, the objective of this research was to identify the main indicators of the evaluation of the quality of nursing care in medical clinic units from the perspective of nurses.

METHOD

This is a descriptive-exploratory, qualitative research, based on the medical clinic units of a university hospital located in the state of Rio de Janeiro.

The participants in this study were 14 professionals selected based on the following inclusion criteria: nurses, permanent staff (sta-

tutory) or the selective process (temporary), working in one of the medical clinic units. Those who were on vacation or leave during the data collection period from March to May 2014 were excluded. Data collection was done through an individual semi-structured interview with the nurses, performed at the hospital's premises, in a reserved place after previous contact for scheduling. Each interview lasted, on average, 25 minutes, and they were recorded with the interviewee's permission.

The interviews began with an explanation about the evaluation of nursing care using quality indicators, with a written presentation of the definition of quality indicators.

The script developed for the interview consisted of three parts. The first part related to the profile of the participants, in which they answered questions that generated identification data and information regarding the time of training and professional exercise, time of experience with the use of quality indicators, time in the institution and level of professional qualification. The second part consisted of an open question in which nurses were asked to propose nursing assessment indicators. The third part consisted of a closed question in which the nursing indicators of the Manual of Nursing Indicators of the *Núcleo de Apoio à Gestão Hospitalar* (NAGEH - Hospital Management Support Center)[1] were presented to the nurses. They were asked to assign a priority for each indicator in order to evaluate the quality of nursing care in a medical clinic (it varied from five (5) to one (1); the closer to five, the higher the priority), as well as to justify, in a free and written manner, the choice of the three indicators listed.

The NAGEH Manual of Indicators of Nursing is based on the evaluation methodology employed in the *Compromisso com a Qualidade Hospitalar* (CQH - Commitment to Hospital Quality) Program.

The NAGEH is a subgroup of the CQH program. It involves professionals from different hospitals and aims to stimulate the exchange of information and the improvement of the quality of services, through the creation, standardization and validation of indicators. It develops activities aimed at improving hospital management, and aims to measure and compare nursing indicators relating to health services[1].

The CQH was created in 1991 and is maintained by the Paulista Association of Medicine and the Regional Council of Medicine of São Paulo. It aims to evaluate the quality of services provided to user of the participants hospitals in São Paulo, based on registration, data analysis, and in assessing the suitability of services in accordance with their standards and criteria[1].

For the organization of the interview reports, the records were kept in chronological order, using the numbering and date of the interview. Descriptive statistics were used, using a simple frequency for the data related to the nurses' profile and frequency of responses. The verbal content of the interviews was analyzed descriptively following the proposed steps for content analysis, such as transcription, material organization and material reading; exploitation of the material, highlighting important sections of the content; as well as interpretation and inference.

The research was approved by the Ethics and Research Committee of the university hospital in which this study was set, on November 15, 2013, under the no. 458,862, CAAE registration: 21758113.9.0000.5243, according to Resolution 466/2012.

RESULTS

Participant Profile

According to Table 1, of the 14 nurses who participated in this research, the majority are female, 41 to 45 years of age, on duty, with a higher degree corresponding to his or her specialization. All of them are government employees, except one, with a training period of more than five years. Regarding experience with the use of indicators, only one reported having effective experience, with six never having used them and seven reporting having little experience with their use.

Table 1. Profile of the nurses participating in the research. Niterói, RJ, 2014

Variables	n
Sex	
Female	11
Male	3
Age group	
<30 years	1
31 to 35 years	3
36 to 40 years	2
41 to 45 years	4
46 to 50 years	2
> 50 years	2
Work shift	
Morning	3
Day shift	6
Night shift	5
Academic qualification	
Especialization	9
Studying masters	3
Masters	2
Vocational training time	
< 5 years	1
5 to 10 years	4
11 to 15 years	3
16 to 20 years	3
21 to 25 years	1
26 to 30 years	1
>30 years	1
Working time at the institution	
< 1 year	2
1 year	2
2 to 5 years	2
6 to 9 years	1
10 years	2
11 to 15 years	3
21 to 25 years	1
26 to 30 years	1
Experience time using indicators	
No experience	6
1 year	2
2 years	1
4 years	1
5 years	1
06 to 10 years	3

Nursing care quality indicators

The data presented in Table 2 showed the indicators that could be elaborated, measured and controlled in the clinic, in the opinion of the nurses.

Table 2. Nursing care quality assessment indicators reported by nurses. Niterói, RJ, 2014

Indicators	Number of citations
Risk of fall	12
Pressure injury	11
Phlebitis	6
Loss of nasoenteral tube	4
Venous access time	4
Number of employees on duty	4
Errors related to medication administration	2
Correct medication administration	2
Adverse effects related to medication and blood products	2
Injury of skin lesion	1
Venous access time	1
Diet acceptance number	1
Bladder catheter infection	1
Number of patients with contact precaution	1
Bladder catheter retention time	1
Number of serious patients in the ward	1

Sixteen indicators were suggested by nurses, among which the most commonly cited and considered to be a priority for the

medical clinic were the risk of fall, pressure injuries and the incidence of phlebitis.

Regarding indicators of pressure injury and patient falls, the interviewees related the importance of these indicators to the profile of the patients hospitalized in the medical clinic - bedridden, elderly, debilitated, but whose frequency regarding pressure injury and falls are closely associated with nursing practice.

> [...] [pressure injuries] give an assessment of both the quality of nursing care and of different care, and especially the quality of care that is provided by nursing outside of what is prescribed (Interview 04)

> [...] Incidence of pressure injuries with regard to patients, which could be related to change of position. (Interview 07)

> [...] pressure injuries due to the characteristics of our patients - elderly, bedridden, debilitated, neurological problems, malnourished, with risk factors for injury development. (Interview 08)

> [...] Another interesting point is the prevention of pressure injuries, preventing the patient from appearing with injuries, keeping him with the skin as intact as possible, so as not to worsen the patient's general condition, to progress to sepsis. (Interview 10)

> [...] I think the first, which is the Braden scale that is already in place here, whose goal is to assess the risk of pressure injuries. We were giving continuity, but it is a little dispersed; and I think it's the first. (Interview 12)

> [...] the fall indicator is not always related to the question of the patient's age, but it is closely related to the general state of the patient, whether elderly, young or adult. This indicator requires an evaluation of the physical state, but it is an evaluation that requires nurses to go to the edge of the bed, talk with the patient, feel the patient subjectively, perceive the level of consciousness and, from there, make a diagnosis in relation to the possibility or not of falling; therefore, it is a diagnosis that is made in direct contact with the patient. (Interview 03)

> [...] we have cardiac patients. Almost everyone uses diuretics, and the bathroom is far away, so they get up in a hurry at night to urinate, so they have the risk of falling. There is a large number of patients who take controlled medications [...] and in the morning, they are always drowsy [...]. If we forget and leave the grille lowered, patients with dementia syndrome will rise from the bed and eventually fall. (Interview 04)

> [...] Elderly patients, you know, don't always walk effectively, with gait alteration. If we don't keep an eye, they really fall; not to mention the delirium, pertinent due to the age group, they don't always they have a companion. (Interview 09)

> [...] I think that's the risk with regard to patient safety. It is the risk of accidental falls. We have patients with walking difficulties. In general, it happens sometimes, and we don't report it as accurately as we should, you know. For my part I try to leave it on the medical record. (Interview 12)

The use of the phlebitis indicator is legitimized through the large number of vascular accesses performed daily in health services, which, because they are invasive procedures, have a great potential for risk, leading to adverse events and complications[8].

> [...] the issue of phlebitis infection: the patients are hospitalized for a very long period, they may have peripheral vascular access for an extended period as well. I think this control will also improve the work process and decrease the risks of infection and reduce the patient's stay in the medical clinic. (Interview 01)

> [...] the phlebitis indicator also refers directly to a quality that is not normally prescribed, but it is related to the presence of bedside nursing in the twenty-four hour, observing this peripheral venous access. Independent of this programming that is done by nursing for 72 hours, which is the exchange of devices and equipment. A patient can develop phlebitis in the first and second hours, or he can develop it in three days, but if he does not have any attention and is limited to just one observation at the time of this exchange, phlebitis may already have evolved, with a very great complicating factor for the health of this patient. (Interview 03)

> [...] phlebitis is not very frequent here, but the amount of antibiotics, in short, can cause phlebitis. (Interview 08)

Although only four nurses suggested the number of professionals as an important indicator to be analyzed, most of them discussed the importance of the dimensions, structure and processes, and their relation with the quality of nursing care provided.

> [...] the professional human resources available is deficient for them to actually be able to provide the most suitable assistance. (Interview 01)

> [...] the number of employees, even more so now that we are in the process of transition… So we depend on manpower; it depends on the calculation of personnel; it really is a clinic where you have seriously ill patients who need full time care. You need the technician watching all the time. (Interview 07)

> [...] the lack of professionals; Sometimes there are not enough employees; There are absences that impair service. (Interview 08)

> [...] the actual physical structure must be taken into account, since it interferes with the quality of care, when the patient is not assisted immediately when needed. You can't be everywhere. (Interview 11)

> [...] the wards were partially inadequate when it comes to attending to these patients, so it generates a great deal of stress, and at times the high-quality care, of excellence, we would expect to find in a university hospital, is hampered by this space deficiency 11)

> [...] because the structure of the unit doesn't allow you to have an overall vision of it. It's an infirmary that you will only see if you enter. You look at the infirmary and not everyone is there; they are divided; it is difficult to keep it under control. (Interview 04)

In all the interviews, nurses were concerned with patient safety, since they related the suggested indicator with possible harm to users, such as hospital infection and adverse events.

Regarding the NAGEH Manual indicators, nurses identified those that could be elaborated on, measured and controlled in the medical clinic, indicating the degree of priority they established. See Table 3.

As shown in Table 3, the three indicators considered to have priority were the same three related by nurses in a free form in the previous stage of the interview: pressure injuries, phlebitis and patient falls. The justifications for choosing these indicators as the most important ones are based on the profile of the patients of the medical clinic and on the possibilities of preventing harm to patients' health and guaranteeing their safety.

> Bedridden patients are hospitalized for a prolonged period (Interview 05)

> Reduce risk of infection related to injuries, as well as length of hospital stay (Interview 07)

> We improved a lot after we introduced the Braden Scale. A more rigorous continuity is needed (Interview 12)

Table 3. Indicators of the NAGEH Manual related by priority of the research participants. Niterói, RJ, 2014

Indicators (Incidence)	Degree 5	Degree 4	Degree 3	Degree 2	Degree 1
Pressure injury - Inpatient	10	3	-	-	1
Phlebitis	9	3	2	-	-
Fall	8	4	1	1	-
Skin Injury	8	3	1	1	1
Medication error	8	-	6	-	-
Unplanned exit from SNE	5	6	1	2	-
Almost failure to administer medications	2	4	5	3	-
Extravasation of antineoplastic drug - inpatient	1	1	1	7	4
Central venous catheter loss	-	2	6	4	2
Central Catheter Loss (CCIP)	-	2	1	1	10
Extubation endotracheal cannula	-	1	2	8	3
Instrumentals with dirt	-	-	-	5	9
Pressure injury - Adult ICU	-	-	-	-	14
Extravasation of outpatient antineoplastic drug	-	-	-	-	14
Extravasation contrast - inpatient	-	-	-	-	14

> In terms of the characteristics of the patients (age, pathology), they present a greater risk of falling (Interview 08)
>
> Decrease hospital-related infection with medication devices (Interview 07)
>
> Elderly patients and administration of vesicant medications (Interview 08)

DISCUSSION

The use of indicators related to nursing care has been considered essential for the evaluation of the quality of health services, since professionals in this category are in daily and direct contact with the patient. Thus, the constant evaluation and analysis of nursing care are timely, and can support processes that aim to achieve the excellence of health institutions.

To this end, it is essential that the institution's nurses are involved in the processes of evaluation and monitoring of the care quality they provide, and in the definition of what one wants to measure, understanding that their actions may interfere with the actions of other professionals and the well-being of the patient[9]. Nevertheless, the research data highlight the inexperience of most of the nurses interviewed in relation to evaluation processes that are based on quality indicators. It can be inferred that this is due to factors such as the lack of discussion about indicators in training, and the difficulty in terms of understanding and adapting to the processes that involve hospital accreditation by professionals who have never worked in an accredited unit or have been involved in attempts to achieve accreditation[10].

Accreditation is defined by the *Organização Nacional de Acreditação* (ONA - National Accreditation Organization) as a system for evaluating and certifying the quality of health institutions. It has an educational and objective character and relates to the continuous qualification of care[11]. This system considers the three dimensions proposed by Donabedian, namely structure, processes and results[12]. The structure comprises human, physical, material and financial factors; the process is related to the actions involving professionals and patients; the results correspond to the end product of the care developed[13].

The nurses in this study freely indicated quality indicators that are based on these dimensions. Regarding structure, the *number of professionals* indicator was cited by four of the 14 interviewees. It is an indicator controlled by the managers of the nursing services, not directly by the nursing assistants. However, it must be considered, since an inadequate number of professionals can contribute to work overload and professional dissatisfaction[14].

A study carried out in ten teaching hospitals in the state of Paraná identified that most of them use managerial indicators related to the evaluation of the quality of nursing care, among them the distribution of nurses/beds, the distribution of nursing technicians and auxiliaries/beds and nursing absenteeism rate[6].

Regarding the process dimension, the nurses pointed out the indicators of the incidence of pressure injuries, the incidence of patient falls and the incidence of phlebitis, as priorities in terms of the evaluation of nursing care. They were also considered the most important when they were selected based on the NAGEH Manual[1].

These data resemble those of other studies. In one of them, public hospital nurses considered the three indicators as being very relevant

to quality nursing care[7]. In another, in a hospital in the country area of São Paulo, nurses cited, among others, the prevention of falls and care with regard to phlebitis as of highly relevant indicators for the evaluation of nursing care[9].

Falls are defined as an inadvertent movement of the body to the ground or lower level, resulting or not in damage, and whose cause is multifactorial[15]. In the case of hospitalized patients, the incidence of falls is associated with intrinsic factors related to the patient, to the hospital environment, and to the work process of health professionals, especially nursing staff (extrinsic). Regarding the extrinsic factors related to nursing, the critical factor is the absence or nonconformity in the registry of the patient's evaluation, especially with regard to their mobility and sensory status, which can be described in different ways and, consequently, may be misinterpreted[16].

When nursing professionals evaluate a patient or perform health actions, but do not register them, they prevent quality care, and preclude the capture of data by other professionals to allow them to carry out the possible planning of actions to be developed with patients[17].

Pressure injuries are skin lesions and/or underlying tissue damage which result from pressure or a combination thereof with shear forces. They are usually located on bony prominences such as the sacral and calcaneus[18]. These problems directly reflect on the quality of nursing care, since its prevention involves nurses' fundamental participation in maintaining the skin integrity of the patients under their care in the face of identifiable risk factors such as bed limitations and physical dependence. Thus, the use of this indicator requires attentive and constant observation for the identification of areas and patients with a higher risk of developing injuries[13].

Vessel puncturing is among the many activities performed daily by nurses in hospitals. It is an invasive technique that requires specific knowledge and manual skills for its execution, and requires care and constant monitoring for the prevention of phlebitis, the main complication associated with the use of venous catheters and which consists of inflammation of the blood vessel[8].

In hospital services, phlebitis is a commonly found adverse event that has the potential to increase costs, prolong hospitalization, and lead to serious clinical complications such as septicemia. Thus, with a view to ensuring patient safety and the quality of care, nurses should seek to monitor phlebitis rates, instituting corrective and preventive measures[19].

It is observed that the main indicators identified by the nurses of the present study indicate a great appreciation of the care processes peculiar to nursing, which are closely linked to the daily actions of nursing and are therefore eligible for evaluation of the quality of care[7].

Considering the above, the evaluation processes cannot be disconnected from the processes of the permanent education of professionals, since the literature describes that undesirable clinical behaviors persist when educational measures are not used, and that nurses' use of indicators is still in its infancy. In this regard, quality monitoring indicators can motivate nurses to change unsafe practices and increase the quality of the care provided[20].

CONCLUSION

The need to have objective parameters to evaluate the quality of nursing care was the driving force for the reflection movement

made use of in this study, and which, from this perspective, aimed to identify indicators that could be measured and controlled by nurses in a hospital setting, and which reflected on the reality of the care provided by these professionals.

The nurses involved in this study indicated three priority indicators when it comes to assessing the quality of care: the incidence of pressure injuries, the incidence of falls and the incidence of phlebitis. The importance of these indicators, which are also appear in the NAGEH Manual, is anchored in the possibilities of the prevention of these events, through careful professional performance, despite the innumerable factors that may contribute to the inefficiency of nursing care, such as physical structure, reduced number of professionals and work overload.

The evaluation of risk factors that can trigger pressure injuries, falls and phlebitis is within the scope of the nurse's role. These professionals can develop preventive strategies that are based on nursing protocols, such as change of position, evaluation, and exchange of vascular access devices. The careful execution of techniques respecting the aseptic precepts becomes relevant in the development of nursing care.

It is hoped that this study will contribute to the exploration of knowledge in terms of indicators, will lead to a search for nursing professional excellence in the medical setting, and will trigger ongoing education processes and management decision-making in such a way as to improve the quality of care and ensure the safety of patients.

It should be emphasized that the results of this research were used to develop a prototype of a computational tool to calculate quality indicators. This will be the object of a subsequent paper.

In spite of the fact that this study has been limited in scope to the local level, and it is not possible to generalize the results, it is expected that it will enable other, more extensive studies, perhaps at the national level, into the perspectives of an evaluation process that considers the reality and institutional culture of health services.

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