

HEALTH CARE QUALITY INDICATORS: THE OPINION OF NURSING MANAGERS OF TEACHING HOSPITALS*

Mariana Angela Rossaneis¹, Carmen Silvia Gabriel², Maria do Carmo Lourenço Haddad³, Marcia Regina Antonietto da Costa Melo², Andrea Bernardes²

¹Nurse. PhD student in Nursing. Professor of Departamento de Enfermagem da Universidade Estadual de Londrina. Londrina, PR, Brazil.

²Nurse. PhD in Nursing. Professor of Departamento de Enfermagem da Escola de Enfermagem de Ribeirão Preto. Ribeirão Preto, SP, Brazil.

³Nurse. PhD in Nursing. Professor of Departamento de Enfermagem da Universidade Estadual de Londrina. Londrina, PR, Brazil.

ABSTRACT: Quantitative descriptive study aimed to identify the opinion of nursing managers of teaching hospitals on the relevance of quality indicators in the management of nursing services. The population was composed of nine nursing managers of teaching hospitals of the state of Paraná. Data were collected in the months of August and September 2012, through a tool - a questionnaire on quality indicators made available electronically to be completed by the nurses. The participants showed greater appreciation of quality indicators for the management of nursing services and evaluation of health care than to general indicators and personnel management indicators. For the management of health institutions, professional must be able to analyze work processes and make decisions aimed to the continuous improvement of care and competitiveness of institutions.

DESCRIPTORS: Health care quality indicators; Health care quality; Nursing evaluation; Nursing.

INDICADORES DE QUALIDADE DA ASSISTÊNCIA: OPINIÃO DE ENFERMEIROS GERENTES DE HOSPITAIS DE ENSINO

RESUMO: Estudo descritivo de abordagem quantitativa que teve como objetivo identificar a opinião de enfermeiros gerentes de hospitais de ensino sobre a pertinência de indicadores de qualidade para gerenciar os serviços de enfermagem. A população foi composta por nove gestores dos serviços de enfermagem de hospitais de ensino do estado do Paraná. Os dados foram coletados entre os meses de agosto e setembro de 2012, com um questionário eletrônico referente à caracterização dos enfermeiros e sua opinião sobre os indicadores de qualidade. Os participantes desse estudo valorizaram os indicadores assistenciais para gerenciamento dos serviços de enfermagem e avaliação da qualidade assistencial em detrimento dos indicadores institucionais gerais e de gestão de pessoas. O gerenciamento das instituições de saúde exige dos profissionais competências para analisar o processo de trabalho e tomar decisões que visem à melhoria contínua da assistência e a competitividade das instituições.

DESCRIPTORES: Indicadores de qualidade em assistência à saúde; Qualidade da assistência à saúde; Avaliação em enfermagem; Enfermagem.

INDICADORES DE CUALIDAD DE LA ASISTENCIA: OPINIÓN DE ENFERMEROS GERENTES DE HOSPITALES DE ENSEÑANZA

RESUMEN: Estudio descriptivo de abordaje cuantitativo que tuvo como objetivo identificar la opinión de enfermeros gerentes de hospitales de enseñanza sobre la pertinencia de indicadores de cualidad para gerenciar los servicios de enfermería. La población fue compuesta por nueve gestores de los servicios de enfermería de hospitales de enseñanza del estado de Paraná. Los datos fueron obtenidos entre los meses de agosto y septiembre de 2012, con un cuestionario electrónico acerca de la caracterización de los enfermeros y su opinión sobre los indicadores de cualidad. Los participantes de ese estudio valoraron los indicadores asistenciales para gerenciamento de los servicios de enfermería y evaluación de la cualidad asistencial en detrimento de los indicadores institucionales generales y de gestión de personas. El gerenciamento de las instituciones de salud exige de los profesionales competencias para analizar el proceso de trabajo y tomar decisiones para obtener la mejoría continua de la asistencia y la competitividad de las instituciones.

DESCRIPTORES: Indicadores de cualidad en asistencia a la salud; Cualidad de la asistencia a la salud; Evaluación en enfermería; Enfermería.

*Article extracted from the dissertation titled "Indicadores de qualidade adotados nos serviços de enfermagem de hospitais de ensino do Estado do Paraná, Brasil." Escola de Enfermagem de Ribeirão Preto, 2013.

Corresponding author:

Mariana Angela Rossaneis
Universidade Estadual de Londrina
Av. Brasília, 1100 - 86600-000 - Rolândia, PR, Brasil
E-mail: marianarossaneis@gmail.com

Received: 11/06/2015

Finalized: 22/10/2015

INTRODUCTION

Continuous improvement of healthcare quality requires systematic evaluations of the care provided to health care users, in order to identify the factors that interfere with the work process of health professionals.

The managers of health institutions are adopting methods for evaluating their services based on indicators, to make the appropriate decisions in the search for improving the quality and outcomes of health care. Nursing, as a key component of hospital institutions, must have tools to evaluate the performance and quality of its services and identify opportunities for improving the outcomes⁽¹⁾.

Indicators can be used to measure the performance of functions, systems or processes, that is, a statistical value that indicates the progress towards goal achievement over time⁽²⁾. Indicators are generally constructed based on a mathematical expression where the numerator represents the total number of predefined events and the denominator, the selected risk population, considering reliability, validity, sensitivity and specificity and predictive value of data⁽³⁾.

Indicators can be valuable tools to change internal work processes when collection and outcomes are appropriately treated. However, the selection of indicators for the evaluation process must consider aspects such as health care, education and management policies; the mission and organizational structure; the work programs and proposals of health institutions; human, material, financial and physical resources available and the expectations of the targeted clientele⁽⁴⁾.

Quality indicators for the evaluation of nursing practices provide clarification of complex phenomena that become quantifiable and thus can be measured with other indicators, providing a better understanding of the work process and on the extent to which the objectives have been met⁽⁵⁾.

Studies on indicators that measure the quality and performance of nursing services are gaining popularity. A study⁽⁶⁾ identified by systematic review of the national and international literature 77 indicators used for evaluating the quality of nursing services, and classified them according to Donabedian model, as follows: 74% of the indicators were classified as process, 16.6% as structure and 9.4% as outcome indicators.

The use of indicators to evaluate nursing health care practices is essential for the management of health services, once it allows monitoring the outcomes of the care delivered to the user and provides the identification of the intervention needs to improve performance, productivity and quality of the services.

Therefore, the present study aimed to identify the opinion of nursing managers of teaching hospitals on the relevance of quality indicators in the management of nursing services.

METHOD

It is a cross-sectional, descriptive and exploratory study with a quantitative approach conducted in nine general teaching hospitals that provide high-complexity care, located in the State of Paraná. During data collection, the State of Paraná had 15 teaching hospitals, of which 13 are considered general hospitals. All the nursing managers of the nursing services of the institutions were invited to participate in the study, and nine agreed to participate.

Data collection was performed between the months of August and September 2012, using an electronically available questionnaire designed at *Google Drive*®. The link to the questionnaire was e-mailed to the participants. The tool contained data related to the nurses (gender, age, time elapsed since completion of the highest educational level, length of professional experience in the management of nursing services, number of years spent working in the institution and postgraduate studies); and one issue aimed to identify the nurses' opinions on the relevance of quality indicators in the management of nursing services, through a four-item Likert scale: very relevant, relevant, moderately relevant, not relevant.

The indicators assessed by Likert scale are used in the hospitals that integrate the *Núcleo de Apoio a Gestão Hospitalar* (Center of Support to Hospital Management) described in the 1st and 2nd editions of the *Manual de Indicadores Hospitalares* issued by Programa Compromisso com a Qualidade Hospitalar (Hospital Quality Commitment Program), in 2012 and other indicators identified in the literature considered suitable for assessing the quality of nursing services^(1,7). These indicators were subdivided into general, care and management indicators.

The general institutional indicators included: average hospital stay, hospital occupancy rate,

hospital infection rate and mortality rate. The care indicators were composed of: rate of inpatient falls, unplanned extubation incidence, loss of nasogastroenteral probes, incidence of pressure ulcers (PU), incidence of phlebitis, incidence of central venous catheter obstruction, rate of non-adherence to medication administration, customer satisfaction with nursing services, non-compliance in nursing records. Finally, the personnel management indicators assessed were: distribution of nurses/ bed, distribution of nursing technicians/assistants per bed, nursing staff absenteeism rate, nursing turnover rate, workplace-induced injuries among the nursing staff and hours of training of nursing professionals^(1,7).

This study was submitted to the Research Ethics Committee of Universidade Estadual de Londrina and approved according to ruling no 84178 and CAAE 04053112.0.0000.5231.

RESULTS

Seven participants were women aged 28-62 years old, with an average age of 45 years. The time elapsed since completion of the highest educational level ranged from eight to 35 years, in average 21 years. Regarding the number of years spent working in the institution, it ranged from four to 26 years, in average 15 years. All nurses had previously worked in nursing care activities before being employed in the institution and only three had management experience.

The nurses had postgraduate degree, and nine attended lato sensu specialization courses and four, stricto sensu specialization courses. The areas of the postgraduate courses mentioned by the participants were: hospital management, management of nursing services, public health, women's health, nursing care in adult health, occupational health, nursing management in inpatient surgical unit and materials management and human resources strategic management.

The opinions of the nursing managers of the assessed institutions on the relevance of general, care and personnel management indicators to evaluate the quality of nursing care is shown in Table 1.

As shown in Table 1, the indicators incidence of ulcer pressure and rate of non-adherence to medication administration were considered by 100% of the respondents as very relevant in the evaluation of nursing care quality.

The indicators rate of inpatient falls, incidence of phlebitis, incidence of central venous catheter obstruction, Non-compliance in the nursing records, hospital infection rate, hours of training of nursing professionals, workplace-induced injuries among the nursing staff, nursing turnover rate and customer satisfaction with nursing services were considered by most respondents as very relevant to assess care.

As for the indicators unplanned extubation incidence, loss of NGE probes, hospital occupancy rate, hospital mortality rate, distribution of nurses/bed, distribution of nursing technicians and assistants/bed and nursing staff absenteeism rate were considered only relevant in the evaluation of nursing. Also, the indicator average hospital stay was considered relevant and moderately relevant by the respondents.

DISCUSSION

Most nursing managers who participated in the research were women and the average age was 43 years. This fact is related with the historical aspects of the profession, considering the predominance of women. Most respondents had graduated 21 to 30 years ago and had been working in the institution for more than 10 years. All participants had performed direct patient care duties before being assigned to their current duties. Only three managers had previous experience in hospital management. The number of years working in the nursing staff of the institution has impact on the selection of a professional in a managerial position. In healthcare, these prerequisites are sometimes more relevant in the selection of a manager than training for a management position⁽⁸⁾.

It was also observed that all respondents had completed lato sensu graduate studies and seven had attended specialization courses related to health management. This may be related to the fact that respondents work in teaching hospitals attached to higher educational institutions. Besides, after specialization, most nursing professionals decide to attend stricto sensu courses, which are of an academic and professional research nature. Also, postgraduate studies characterized by forming a higher intellectual stratum have attracted nurses in the pursuit of status and prominence among their peers⁽⁸⁾.

The indicators rate of non-adherence to medication administration and incidence of PU were considered very relevant by all participants

Table 1 – Opinions of nursing managers on the quality indicators used in the management of nursing services, Londrina, PR, Brazil, 2012

Nursing care quality indicators	Very Relevant		Relevant		Moderately relevant		Not relevant	
		%	n	%	n	%	n	%
General Institutional Indicators								
Hospital infection rate	7	77.8	2	22.2	-	-	-	-
Hospital mortality rate	4	44.4	5	55.6	-	-	-	-
Hospital occupancy rate	3	33.3	4	44.5	1	11.1	1	11.1
Average hospital stay	2	22.3	3	33.3	3	33.3	1	11.1
Care indicators								
Incidence of phlebitis,	7	77.8	2	22.2	-	-	-	-
Incidence of central venous catheter obstruction	6	66.7	3	33.3	-	-	-	-
Unplanned extubation incidence	2	22.2	5	55.6	2	22.2	-	-
Loss of NGE probes	2	22.2	4	44.5	3	33.3	-	-
Non-compliance in the nursing records	5	55.6	3	33.3	1	11.1	-	-
Hours of training of nursing professionals	7	77.8	2	22.2	-	-	-	-
Workplace-induced injuries among the nursing staff	7	77.8	2	22.2	-	-	-	-
Nursing turnover rate	5	55.6	3	33.3	-	-	1	11.1
Personnel Management Indicators								
Distribution of nurses/bed	4	44.4	5	55.6	-	-	-	-
Distribution of nursing technicians and assistants/bed	4	44.4	5	55.6	-	-	-	-
Nursing staff absenteeism rate	3	33.3	4	44.5	2	22.2	-	-
Customer satisfaction with nursing services	6	66.7	3	33.3	-	-	-	-

in the evaluation of nursing services. The rate of non-adherence to medication administration is one of the indicators most related to the routine of the nursing staff. Medication administration in a hospital organization is a complex system, with several interdependent interconnected processes, formed by a multidisciplinary team⁽⁹⁾. The establishment and monitoring of indicators associated to drug-related issues aimed to ensure that patients receive appropriate treatment and recover. The outcomes of this evaluation are essential to avoid and especially prevent failures.

The nursing team must also develop strategies for the prevention of pressure ulcers, taking the necessary measures to control risk factors such as pressure, shear, friction, moisture, nutrition, motion capacity. Thus, the use of pressure ulcer indicators has been associated to quality care⁽¹⁰⁾.

In turn, the indicators rate of inpatient falls, incidence of phlebitis, incidence of central venous catheter obstruction non-compliance in nursing records concerns specific nursing processes, which are closely related to the daily tasks performed by these professionals and, thus, provide a consistent

picture of these processes. Inpatient fall is one of the most important outcome indicators and is defined as a control-event. The evaluation of the fall risk and its prevention should be incorporated in daily nursing practices⁽¹¹⁾.

Phlebitis is also a common intravenous therapy complication and is defined as an inflammation of the vein. Specialists recommend that the prevalence of this event should be less than %⁽¹²⁾. Since most inpatients need a venous access, one can assess the importance of a particular indicator related to this complication.

Although the indicator incidence of central venous catheter obstruction was considered very relevant to evaluate nursing quality, a study on the administration of intravenous drugs in a public hospital identified that in 86.4% of the procedures of administration of intravenous medication catheter permeability was not observed⁽¹³⁾.

Evaluation of permeability must be conducted to check thrombus formation on catheters, which can be done by checking the stream of the infused solution⁽¹³⁾. It is evident that the nursing

staff must have knowledge on the mechanisms related to the installation and maintenance of safe intravenous access that allows patient safety and preservation and early detection of possible complications⁽¹⁾.

Still regarding care management, nursing records are a key indicator in the evaluation of care quality⁽¹⁴⁾. However, this indicator has been little used by healthcare services, once the analysis of nursing notes requires the structuring of an audit service in healthcare facilities. Therefore, due to the lack of financial resources and/or the lack of interest in evaluating nursing services this indicator is rarely used in many cases.

It should be stressed that this indicator contributes to continuous delivery of care to patients, since these records are supposed to include the maximum amount of information on the health conditions of these individuals, related both to procedures, needs, complaints and evolution of patients⁽¹⁴⁾. Besides, the identification of record failures reinforces the need for permanent education of the nursing staff, aimed to the improvement of written communication and also, when necessary, to provide clarifications in lawsuits.

For the participants, care indicators were more important in the management of nursing services and care quality than the general and personnel management indicators. These findings were also obtained in a study that identified the opinions of nurses of a general hospital in an inner city of the State of São Paulo on nursing indicators related to tasks performed by nurses⁽¹⁾.

Only two nurses considered the indicators loss of NGE probe and unplanned extubation incidence very relevant. Most nurses said these indicators were only relevant or not relevant for evaluating nursing care. Although these indicators were directly related to patient care^(1,9,15), it is inferred that this outcome can be explained by the fact that these events are associated to the psychological conditions of the patient and/or handling by other professionals who also provide patient care such as physicians, physiotherapists, etc.

The hospital infection rate was the only indicator considered very relevant in nursing evaluation by most nurses interviewed. This indicator was considered of utmost importance in a study that analyzed the opinions of nurses on the use of quality indicators in the evaluation of nursing care⁽⁹⁾. The outcomes related to the

opinions of the respondents on this indicator show that the nurses are aware of the importance of a more comprehensive and multidisciplinary view on the outcomes of care, to be able to assess care and improve care quality⁽¹⁵⁾.

Mortality rate and hospital occupancy rate were considered relevant indicators. Also, average hospital stay was reported as relevant and moderately relevant by most participants. Global indicators of traditional care outcomes such as hospital occupancy rate, mortality rate and average hospital stay are separately analyzed, i.e. not with those associated with nursing staff activities⁽⁶⁾. This might explain the fact that these indicators were considered by respondents relevant and not relevant for the management of nursing services: they are not systematically used and not regarded as related to the final outcomes of nursing care. However, these indicators should be examined from a multidisciplinary perspective, as they represent the work of the entire healthcare team⁽⁶⁾.

Regarding the indicators related to personnel management, nursing turnover rate was recognized as essential for the management of human resources in a study with nurses from a university hospital. Turnover in the professional staff affects nursing management and directly interferes with care quality, because of the loss of skilled professionals, and with the organization costs⁽¹⁶⁾.

The indicators related to workplace-induced injuries can identify failures in the process and in the structures of hospital units, once high rates of workplace-induced injuries are related to professional failure, inadequate technique and poor quality of the material used, among others. The monitoring of workplace-induced injuries in health institutions facilitates the identification and analysis of occupational hazards in these environments. Thus, it is possible to avoid or minimize the occurrence of workplace-induced injuries and develop control and prevention measures, as well as to raise awareness on safe practices among nursing professionals⁽¹⁷⁾.

Regarding the item hours of training of nursing professionals, the study showed the importance of the training of health care professionals and post-training continuous monitoring to meet the quality standards for care. The number of hours of training of the staff directly affects their capacity to provide care⁽¹⁾.

Management of training indicators

demonstrates that they favor quantitative assessment of data. However, the development of an evaluation of qualitative outcomes related to changes in behavior and attitudes in care practices remains a challenge for nursing.

The rates of distribution of nursing technicians/assistants per bed can be considered indicators of the structure of health services and are directly related to the quality of care delivered to patients⁽¹⁵⁾. Properly sizing the nursing staff is essential to ensure quality care, as it allows determining the amount of staff needed to meet the care demands of the clientele⁽¹⁶⁾.

Under this perspective, nursing managers must monitor the nursing staff absenteeism rate as an indicator of personnel management and use additional staff to replace these absences, avoiding work overload, and, thus, the increase in workers' absenteeism that directly interferes with the safety and the quality of care⁽¹⁸⁻¹⁹⁾.

The indicator customer satisfaction with nursing services was indicated by many respondents as very relevant to evaluate nursing services. Satisfaction is a personal evaluation of the service by the client, which is based on cognitive-affective subjective standards of users. There are four main determinants of satisfaction, as follows: patient (client) characteristics, socio-demographic conditions, client expectations about medical and nursing care and characteristics of the professionals who deliver care, including personality traits and expertise⁽⁹⁾.

User satisfaction concerns the fulfillment of their needs, with the delivery of individualized and humanized care. This indicator provides important information aimed to improve health care services.

CONCLUSION

This study found that nursing managers are aware of the quality indicators and consider them relevant for the management of care. For the management of health institutions nursing professionals must be prepared to analyze the work process and make decisions aimed to the continuous improvement of care and competitiveness of health institutions. Thus, periodical evaluation of nursing services based on indicators is needed to meet quality standards.

It is necessary to implement a well-structured and routine collection and analysis of indicators to ensure that the outcomes are consistent with the

reality of the health institutions. It is assumed that the difficulty in obtaining data for the analysis of indicators is one of the main reasons for the only partial adoption of indicators in nursing services. However, reflection on the work process based on valid and legitimate information is the only way to obtain better outcomes.

REFERENCES

1. Silva CS, Gabriel CS, Bernardes A, Évora YDM. Opinião do enfermeiro sobre indicadores que avaliam a qualidade na assistência de enfermagem. *Rev. Gaúcha Enferm.* 2009; 30(2):263-71.
2. Joint Commission International. Joint Commission International Accreditation Standards for Hospitals. [Internet] 2014 [acesso em 22 ago 2015]. Disponível: https://www.jcinc.com/assets/1/14/JCIH14_Sample_Pages.pdf.
3. Tronchin DMR, Melleiro MM, Takahashi RT. A qualidade e a avaliação dos serviços de saúde e de enfermagem. In: Kurcgant P, organizadora. *Gerenciamento em enfermagem*. 2ª ed. Rio de Janeiro: Guanabara Koogan; 2010. p.77-107.
4. Fusco SFB, Spiri WC. Análise dos indicadores de qualidade de centros de material e esterilização de hospitais públicos acreditados. *TextoContextoEnferm.* 2014; 23(2):426-33.
5. Haddad MCFL, Rossaneis MA. Indicadores de qualidade da assistência de enfermagem. In: Vale EG, Lima JR, Felli VEA. *Programa de atualização em enfermagem*. Brasília: Artmed; 2011. p.41-90.
6. Caldana G, Gabriel CS, Bernardes A, Évora YDM. Indicadores de desempenho em serviço de enfermagem hospitalar: revisão integrativa. *Rev. Rene.* 2011; 12(1):189-97.
7. Programa Compromisso com a qualidade hospitalar (CQH). *Manual de Indicadores de Enfermagem do Núcleo de Apoio a Gestão Hospitalar (NAGEH)*. 3ª ed. São Paulo: Van Moorsel; 2012. p.60.
8. Furukawa PO, Cunha ICKO. Perfil e competências de gerentes de enfermagem de hospitais acreditados. *Rev. Latino-Am. Enfermagem.* 2011; 19(1):106-14.
9. Cintra EA, Pinto AC, Sousa EO, Rosa EV, Lima IA, Rodrigues SO. Utilização de indicadores de qualidade para avaliação da assistência de enfermagem: opinião dos enfermeiros. *J. Health Sci. Inst.* 2010; 28(1):29-34.
10. Vargas e Silva MR, Dick NRM, Martini AC. Incidência de úlcera por pressão como indicador de qualidade na assistência de enfermagem. *REUFSM.* 2012; 2(2):339-46.
11. Inoue KC, Matsuda LM, Melo WA, Murasaki ACY,

Hayakawa LY. Risco de queda da cama. O desafio da enfermagem para a segurança do paciente. Invest. Educ. Enferm. 2011; 29(3):459-66.

12. Lopes PC, Ventramim P, Stramasso LV. Indicadores relacionados a flebite. In: Leão ER, Silva CPR, Alvarenga DC, Mendonça SHF. Qualidade em saúde e indicadores como ferramenta de gestão. São Caetano do Sul: Yendis; 2010. p. 221-231.

13. Silva LD, Camerini FG. Análise da administração de medicamentos intravenosos em hospital da rede sentinela. Texto Contexto Enferm. 2012; 21(3):633-41.

14. Silva JA, Grossi ACM, Haddad MCL, Marcon SS. Avaliação da qualidade das anotações de enfermagem em unidade semi-intensiva. Esc. Anna Nery. 2012; 16(3):577-82.

15. Gabriel CS, Melo MRAC, Rocha FLR, Bernardes A, Miguelaci T, Silva MLP. Utilização de indicadores de desempenho em serviço de enfermagem de hospital público. Rev. Latino-Am. Enfermagem. 2011; 19(5):1247-54.

16. Vieira APM, Kurcgant P. Indicadores de qualidade no gerenciamento de recursos humanos em enfermagem: elementos constitutivos segundo percepção de enfermeiros. Acta paul.enferm.2010; 23(1):11-15.

17. Bakke AH, Araujo NMC. Acidentes de trabalho com profissionais de saúde de um hospital universitário. Prod. 2010; 20(4):669-76.

18. Sancinetti TR, Soares AVN, Lima AFC, Santos NC, Melleiro MM, Fugulin FMT, et al. Taxa de absenteísmo da equipe de enfermagem como indicador de gestão de pessoas. Rev. esc. enferm. USP. 2011; 45(4):1007-12.

19. Faria JIL, Kurcgant P. Licenças saúde de profissionais de enfermagem: características e ações adotadas pelos enfermeiros-chefe. CogitareEnferm. 2014;19(2):224-31.