

SYSTEMATIC OR INTEGRATIVE REVIEW

QUALITY INDICATORS AND WORKLOAD OF AN INTEGRATIVE REVIEW IN NURSING INDICADORES DE QUALIDADE E CARGA DE TRABALHO UMA REVISÃO INTEGRATIVA EM ENFERMAGEM INDICADORES DE CALIDAD Y CARGA DE TRABAJO DE UNA REVISIÓN INTEGRADORA DE ENFERMERÍA

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ABSTRACT

Objectives: To analyze and characterize the national/international literature, the relationship between quality indicators and the workload in nursing; Identify methodological frameworks used to investigate this relationship; Know which quality indicators are most used and how they relate to the workload in nursing. **Method:** Integrative review of the literature with all the articles which reflect the theme in the last 15 years, and indexed in Embase, Lilacs-BVS, PubMed, Scopus. **Descriptors:** workload, indicators of quality of health care and nursing staff. Journals with a summary not describing what quality indicators used and not leaving explicit correlation between the quality indicators with the workload were excluded from the analysis. The final sample consisted of 21 articles. The articles were translated and analyzed using the instrument developed by the researcher. After the analysis of similar responses to the content and simple statistical operations were used. **Results:** The majority of articles were published as original, multicenter, quantitative and indexed articles in the English language. In the training of the first author, nurses doctors prevailed. The indicators of healthcare quality and people management were the most used; the selected articles are unanimous concerning significant associations between quality indicators and the workload in nursing. **Conclusion:** It was demonstrated that there is a strong relationship between quality indicators and the workload in nursing, demonstrating the feasibility study. However, there is a deficit in national studies on this topic.

Keywords: Workload, Quality Indicators Health, Care; Nursing Staff; Occupational Health; Nursing Care.

RESUMO

Objetivos: analisar e caracterizar na literatura nacional/internacional a relação entre os indicadores de qualidade e a carga de trabalho em enfermagem; identificar os referenciais metodológicos utilizados para investigar essa relação; conhecer quais os indicadores de qualidade mais utilizados e como se relacionam com a carga de trabalho em enfermagem. **Método:** revisão integrativa de literatura com todos os artigos que retratassem a temática nos últimos 15 anos e indexados na Embase, Lilacs-BVS, PubMed, Scopus. **Descritores utilizados:** carga de trabalho, indicadores de qualidade e recursos humanos de enfermagem. Foram excluídos da análise: periódicos que em seu resumo não descrevessem quais os indicadores de qualidades utilizados e que não deixavam explícita a correlação entre os indicadores de qualidade com a carga de trabalho. Amostra final constou de 21 artigos. Os artigos foram traduzidos e analisados utilizando o instrumento construído pela pesquisadora. Posteriormente, fez-se a análise das respostas similares do conteúdo e foram utilizadas operações estatísticas simples. **Resultados:** a maioria dos artigos foi publicada como artigos originais, multicêntricos, quantitativos e indexados na língua Inglesa. Na formação profissional do primeiro autor prevaleceram enfermeiros doutores. Os indicadores de qualidade assistenciais e de gestão de pessoas foram os mais utilizados, os artigos selecionados são unânimes no que diz respeito às associações significativas entre os indicadores de qualidade e a carga de trabalho em enfermagem. **Conclusão:** detectou-se forte relação entre os indicadores de qualidade e a carga de trabalho em enfermagem, demonstrando a viabilidade do estudo. Porém, existe um déficit nos estudos nacionais sobre esta temática.

Palavras-chave: Carga de Trabalho; Indicadores de Qualidade em Assistência à Saúde; Recursos Humanos de Enfermagem; Saúde do Trabalhador; Cuidados de Enfermagem.

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RESUMEN

Analizar y caracterizar en la literatura nacional e internacional la relación entre los indicadores de calidad y la carga de trabajo de enfermería; identificar los marcos metodológicos utilizados para investigar esta relación; conocer cuáles son los indicadores de calidad más utilizados y cómo se relacionan con la carga de trabajo de enfermería. Revisión integradora de la literatura con todos los artículos en Embase, Lilacs-BVS, PubMed y Scopus que tratan del tema en los últimos 15 años. Los descriptores utilizados fueron: carga de trabajo, indicadores de calidad y recursos humanos de enfermería. Fueron excluidos del análisis las revistas en cuyo resumen no se describían los indicadores de calidad utilizados y donde la correlación entre los indicadores de calidad y la carga de trabajo no era explícita. La muestra final constó de 21 artículos que fueron traducidos y analizados utilizando un instrumento desarrollado por la investigadora. Después se realizó el análisis de las respuestas similares del contenido y se utilizaron operaciones estadísticas sencillas. La mayoría de los artículos fue publicada como artículo original, multicéntrico, cuantitativo, en idioma inglés. En la formación profesional del primer autor prevalecieron enfermeros doctores. Los indicadores de calidad asistencial y de gestión de personas fueron los más utilizados, los artículos seleccionados son unánimes en lo que se refiere a las asociaciones significativas entre los indicadores de calidad y la carga de trabajo de enfermería. Se ha demostrado que existe una fuerte relación entre los indicadores de calidad y la carga de trabajo de enfermería, lo que demuestra que la viabilidad del estudio. Sin embargo, hay un déficit en los estudios nacionales sobre este tema.

Palabras clave: Carga de Trabajo; Indicadores de Calidad de la Atención de Salud; Personal de Enfermería; Salud Laboral; Atención de Enfermería.

INTRODUCTION

The concepts of quality of nursing care and patient safety became a global phenomenon and had been the main topics of discussion involving nurses in Brazil. Internationally, these topics are priorities advocated by various organizations such as the World Health Organization, which in 2002 launched the campaign entitled "Security Era" and the International Council of Nursing believes to improve nursing practice to ensure patient safety.^{1,2}

This new safe practice perspective articulate the quality aspects that relate to the quantity and quality of health professionals.

According to Conishi and Gaidzinski³ and Castilho⁴, the concern of health services managers with increasing demand and area costs directly affects the nursing staff. This is because they are the majority staff in health institutions and, consequently, most of the payroll, becoming the most sought team when it comes to reducing costs. However, poor human resources team results in poor care, low productivity, increased hospitalization, dehumanized care and increased risk of adverse events, preventing the quality of care in nursing.⁵

Thus, questions to perform the prediction of nursing staff quantity to ensure the quality of care is extremely important for the management since the staff dimensioning directly influences the quality of care in nursing. Thus, management nurses are challenged to seek technical and scientific evidence that support their decision making. This challenge is to develop and quantify evidence to produce positive impacts on the results of assistance to patients and their families. In this context, studies that relate the amount of staff with the care quality indicators are great management tools for nurses.^{6,7}

Considering the studies in the national literature, it is seen a shortage of articles that prove the relationship between the amount of nursing staff and quality indicators. Since the importance of the topic for the quality of nursing services, the following question arises: what is the relationship between

quality indicators and the workload in nursing from the perspective of several experts?

OBJECTIVES

To analyze the relationship between the quality indicators and the workload in nursing in the national and international literature.

To characterize the national and international scientific literature on the relationship between quality indicators and the workload in nursing.

To identify the methodological references used to investigate the relationship between the quality indicators and the nursing workload found in the national and international literature.

To know what are the most used quality indicators and the relationship between them and the workload in nursing.

METHODOLOGY DESCRIPTION

This is an integrative review of national and international production about the relationship between the quality indicators and the workload in nursing.

This study has scholars of this method as reference and has been prepared following the six steps for the review of the literature described by Mendes, Silveira and Galvão⁸, detailed below:

1. topic identification and selection hypothesis for the integrative review;
2. criteria and sampling establishment that will do the review;
3. definition of the information to be extracted from selected studies;
4. evaluation of the studies included in the integrative review;
5. interpretation of results;
6. presentation of the synthesis of knowledge obtained from the review.

The study sample included all the items reflecting the topic related to this integrative review found in national and international literature in the last 15 years and indexed in the following databases: Embase, Lilacs-BVS, PubMed, and Scopus.

The following criteria adhered to the definition of the sample:

National and international journals, published in Portuguese, Spanish or English, in the last 15 years (January 1999 to January 2014);

- articles indexed by the keywords: *carga de trabalho / carga de trabalho do empregado / jornada de trabalho / indicadores de qualidade / indicadores de qualidade em assistência à saúde / Recursos Humanos de enfermagem / workload / workloads / workload / workloads / employee workload / employee workloads / employee workload / employee workloads / staff workload / staff workloads / staff workload / staff workloads / health care quality indicators / health care quality indicator / healthcare quality indicator / healthcare quality indicators / quality indicators / quality indicator nursing staff / nursing staffs;*
- articles with titles that showed the correlation between the quality indicators and workload;
- journals available in Brazil with free full text recovered by Virtual Private Network System (VPN) State Paulista University "Júlio de Mesquita Filho" - UNESP.

Journals with a resume not describing which quality indicators were used and without explicit correlation between the quality indicators and the workload were excluded from this analysis.

The final sample consisted of articles indexed in EMBASE, Lilacs-BVS, PubMed and Scopus, who met the established criteria cited by getting the total of 21 articles.

After the sample was built and located as most articles as possible, they were analyzed objectively using an instrument developed by the author who was able to achieve the research objectives.

Computerized search in the Latin American database on Health Sciences (LILACS), the Virtual Health Library (VHL) BIREME has started. This source is the publications in Latin America and the Caribbean.

The search was created from the keywords defined in the inclusion criteria of the study, thus using: workload or employee workload or workday AND quality indicators or quality indicators in care service AND nursing human resources.

There were 66 publications found that after reading the titles reduced to 20, and 14 publications with reading the abstracts, and six did not have the full text available for free. Therefore, from this database, only eight publications were selected for the sample of the research, since a publication was repeated in the same database.

In Embase, Database with most international biomedical range with exclusive publications, three search strategies were used. The first strategy did not find publications, being used the following keywords: workload, health care quality indicators and nursing staff, accompanied, respectively, of the synonyms. The second search strategy used health care quality indicators and nursing staff finding four publications. Workload and nursing staff were used in the third search strategy, resulting in two publications. After reading the titles and abstracts of the six publications found in the database, it was concluded that all publications would be excluded, so this database will not be part of the sample, by not meeting the inclusion criteria.

In PubMed (National Library of Medicine), free version of the MEDLINE database, workload/workloads/workload/workloads/employee workload/employee workloads/employee workload/employee workloads/staff workload/staff workloads/staff workload/staff workloads/health care quality indicators/health care quality indicator/healthcare quality indicator/healthcare quality indicators/quality indicators/quality indicator/nursing staff/nursing staffs were the search keywords applied, and 156 publications were identified. After reading the titles, this number dropped to 39, and only 16 were selected after reading the abstracts.

Keeping the search strategy in PubMed database, 116 publications were identified, and only 14 were included in Scopus for reading the abstracts. After analyzing the abstracts, six articles were selected for the sample.

Some articles were indexed in more than one database, which reduced 30 to 21 the number of articles of the sample.

Based on Campos⁹ instrument, the author built his instrument to meet the research objectives.

Thus, the publications were examined objectively by the following criteria:

- data relating to the identification of research: article title, journal name, year of publication, article language, journal country and the type of journal;
- data of the researcher: authors' names, profession, title, workplace, and country of the first author;
- data regarding the study methodology: quantitative, qualitative approach, descriptive, correlational study, literature review, experience report or another type of study, publication type, the research place and database;
- data related to the research: objectives, keywords and quality indicators used;
- data related to the study content: type of analysis, research duration, measuring instrument used, findings and conclusion.

At this stage, the selected articles were analyzed regarding the relationship of the data to the interest of the study.

Of the 21 articles selected for the sample, 18 were found in English, which required reading researcher, translation and rereading them.

Each article was recovered in full and, as the instrument for collection of bibliographic data, they were saved in a version of Windows 7 Professional folder. Then the reading was held of all the articles and after translation became the reading of each article for the collection of bibliographic data that would be the basis for the production of future tables.

As the articles were being translated, they were analyzed using the instrument developed by the researcher.

Data analysis was performed in two steps. At first, there was the analysis of the data required to complete the instrument. For this stage, the data were grouped into a database and formatted using Microsoft Word 2010 program.

In the next stage, there was the analysis of similar responses to the content of the articles available in the collection instrument of bibliographic data. Simple statistical operations of a frequency distribution in percentage were provided by the Microsoft Excel 2010 software and used in the construction of comparative tables, obtaining the reliable characterization of the sample.

The articles in the sample were referenced in Appendix 1 for differentiation of quotes from other authors consulted for the preparation of the study.

Campos⁹ states that the analyzed data need to be disclosed in an orderly and consistent way. Following this reasoning, this study on the national and international scientific literature on the relationship of quality indicators and workload showed the results and held a discussion.

RESULTS AND DISCUSSION

The analysis of 21 articles are the sample through appropriate instrument addressed various aspects described below:

DATA RELATED TO THE IDENTIFICATION OF ARTICLES

The search was conducted in the last 15 years, from January 1999 to January 2014. However, the publications that correlate quality indicators with the nursing workload only began in 2002. In January 2014, there were not publications until the selection period of the journals. In 2003, 2009 and 2011 there were the highest number of publications that is three (14.3%). Some literature searches were conducted to understand the reason for this result, but no explanation was found.

Regarding the language in which the articles were published, no article was found in Spanish, only three (14.3%) were

available in Portuguese, and most of them (18, 85.7%) were indexed in English. Maybe this is associated with the journal sought, since in PubMed and Scopus, articles are published originally in English. The integrative reviews on contributions of electronic records for patient safety in intensive care and factors that influence the sexuality of older people also report the prevalence of articles indexed in English.^{10,11}

As for the journals in which the articles were published, 17 magazines were part of the sample. With a balance between the numbers of publications, the journals with publications on the topic (n=2, 9.5%), there were Journal of Nursing Administration, Medical Care, Policy, Politics, & Nursing Practice and the Latin-American Nursing (Table 1).

Table 1 - Distribution of articles, according to the journals

Journal	N	%
Advances in Nursing Science	1	4.8%
ClinicalInfectiousDiseases	1	4.8%
CriticalCare Medicine	1	4.8%
Current Opinion in Infectious Diseases	1	4.8%
Health Services Research	1	4.8%
International Journal of Nursing Studies	1	4.8%
Journal of Evaluation in Clinical Practice	1	4.8%
JournalofNursingAdministration	2	9.5%
JournalofNursing Management	1	4.8%
JournalofNursingResearch	1	4.8%
Medical Care	2	9.5%
NursingEconomic	1	4.8%
Policy, Politics, &NursingPractice	2	9.5%
Revista da Escola de Enfermagem da USP	1	4.8%
Revista Latino-Americana de Enfermagem	2	9.5%
The Journal of Emergency Medicine	1	4.8%
The Lancet	1	4.8%
TOTAL	21	100.0%

Source: Elaborated by the author.

It is noted that the Latin American Journal of Nursing is published by Ribeirão Preto School of Nursing, University of São Paulo (USP), so it is national magazine with quality A1 of bimestrial publications.¹²

The articles were further classified according to the area of journals: 12 (57.1%) were published in journals specific to nursing, eight (29.1%) were found in medical journals and only one (4.8%) was published in a journal of another health area. It is assumed that, because it is a very specific topic, it occurs predominantly in nursing.

DATA RELATED TO THE TO RESEARCHERS

For Campos⁹, it is important to know the vocational training of authors to know about the professional categories that produce more research on this topic.

It was observed that the training of the first author was predominantly the nurse with 57.1% (n=12), only 9.5% (n=2) are doctors. The fact that 33.3% (n=7) of the first authors do not specify the training may have interfered in the results of this sample.

The concern of health services managers with increasing demand and area costs directly affects the nursing staff, as corresponds to the majority of staff in health institutions. Thus, the nurse in the health organizations needs to have the scientific evidence to demonstrate that nursing dimension, especially nurses, where appropriate, positively interfere in the quality of care.^{3,4} Nurses were the most publishing as the first author in integrative reviews of Alencar Marques Leal and Vieira¹¹ and Santos and Rennó.¹³

It was possible to observe that 57.1% (n=12) of the articles published had the first author with doctoral degrees while Master degree were 28.6% (n=6). Moreover, 14.3% (n=3) of articles brought unspecified titration of the first author. This confirms that the graduate and faculty are still mainly responsible for the production of research and validation of the nursing practice.^{9,14}

Concerning the first author's workplace, the data found in the selected articles that the graduate are a major producer of national and international research, since 81.0% (n=17) of the authors work in universities, 14.3% (n=3) was not specified, and only 4.8% (n=1) work in primary care. These findings were also found in the literature review on the Brazilian scientific production of Nursing Activities Score (NAS) of Santos, Nogueira, and Padilha.¹⁴

In this kind of research, it was necessary to identify the workplaces of the authors to believe that they are the workplaces responsible for the appearance of circumstances, although the results have not confirmed it.⁹

According to Campos⁹, identifying the nationality of the first author is relevant in this type of study because, by the nationality, it is possible to infer which countries invest in this type of research. Thus, it appears that the United States has most of the authors, that is, 38.1% (n=8) of the authors are of American nationality. This fact can be explained by history because it was in the United States in the twentieth century where the first in-depth studies on the subject were held, and, of course, high investment in research conducted in that country.³

On the number of authors who were cited in the publication of the articles, it was observed that 52.4% (n=11) of the articles were developed by four or more authors. In the literature, the researcher could not find explanations for this finding. It is believed that the greatest number of authors in

the same publication is due to the interaction that provides research and the common interests of the researchers on the topic under study (Table 2).

Table 2 - Distribution of articles, according to the number of authors

Number of authors	N	%
One author	2	9.5%
Two authors	4	19.0%
Three authors	4	19.0%
Four or more authors	11	52.4%
TOTAL	21	100.0%

Source: Elaborated by the author.

DATA RELATED TO THE METHODOLOGY OF ARTICLES

Campos⁹ states that the analysis of the methodology of the studies help to understand the phenomenon, indicating the perspective in which it was measured, and identifying gaps.

Regarding the approach, it was found that 17 (81.0%) of articles used a quantitative approach, two (9.5%) were a literature review, one (4.8%) was a qualitative and quantitative approach and (4.8%) experienced report.

Quantitative research is the most common because it is inferred that the topic works with quality indicators that are derived from statistical calculations.

The selected articles were also analyzed according to the data collection, and there was a balance of the study being prospective or retrospective. Of the 21 articles, 11 (52.0%) had prospective data, while 10 (47.6%) had retrospective data collected.

Most articles (71.4%, n=15) were published as original. Articles published characterized as other types such as revision, experience reports and unspecified had only one (4.8%) publication. Corroborating the results, contributions to patient safety in intensive care of Sousa et al. were found in the integrative literature review of electronic records.¹⁰

DATA RELATED TO THE CONTENT OF ARTICLES

The place was developed where the research was also the object of study of this integrative review. It is observed that multicentre studies were the majority, 52.6% (n=10), followed by university hospitals with 31.6% (n=6). Private hospital, philanthropic hospital, and outpatient developed only 5.3% (n=1) of the research. It is noteworthy that the two literature reviews were not included in this analysis.

The fact that quality indicators are already used in many health institutions as a management tool justifies the pre-

dominance to use management tool available in the database (n=12, 57.1%). It is understood that the data collection instrument developed by the author (n=6, 28.6%) was necessary for health institutions that do not work with quality indicators as a management instrument.^{15,16}

Quality indicators in the selected articles used for correlation with the nursing workload were explored to meet the ultimate goal of this research (Table 3).

Table 3 - Distributions of articles, according to quality indicators

Quality indicators	%
Care and people management indicators	42.1%
Care indicators	31.6%
People management indicators	26.3%
TOTAL	100.0%

Source: Elaborated by the author.

Table 3 shows the most used care and people management indicators (n=8 or 42.1%). It is believed that this event has occurred because it is an integrative review that related quality indicators for the nursing workload. The two literature reviews were not included in this analysis.

The quality indicators most commonly used in the articles selected, respecting the following order were: nursing hours; incidence of falls among patients; incidence of medication errors; incidence of pressure ulcers; incidence of infection; and patient satisfaction.

All selected articles (n=21) are unanimous regarding the relationship between the quality indicators and workload. They agree that there are significant associations between quality indicators and the workload in nursing and explain this interrelationship as a key to understanding the influence of both patient safety and quality of service.

FINAL CONSIDERATIONS

This integrative literature review showed that there is a strong relationship between the quality indicators and the workload in nursing.

The growing concern of nurses to improve the quality of nursing care and patient safety, basing their practice on scientific evidence, was found by quality indicators considered most relevant in this study.

Some limitations were found, such as repeated publications in more than one database, lack of clarity in the abstracts not describing what qualities indicators are used and/or the correlation between the quality indicators with the workload.

The study demonstrated the feasibility and was an input for the studies related to this topic, allowing the advancement of knowledge.

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