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INTEGRATIVE REVIEW ARTICLE

SIZING OF NURSING STAFF: INTEGRATIVE REVIEW

DIMENSIONAMENTO DO PESSOAL DE ENFERMAGEM: REVISÃO INTEGRATIVA

DIMENSIONAMIENTO DEL PERSONAL DE ENFERMERÍA: REVISIÓN INTEGRATIVA

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ABSTRACT

Objective: to analyze the scientific production relative to the sizing of the nursing staff. **Method:** integrative review in order to answer the question << What are the available scientific evidence on sizing of nursing staff? >> through access to *Online* databases LILACS, MEDLINE and SciELO virtual library through the intersection of descriptors *Sizing, Nursing and Personal*, in Portuguese, English and Spanish. **Results:** 29 scientific articles were selected, in which it was observed dichotomy between the quantitative of nurses and COFEN Resolution No. 293/04 and even when the numbers of reality coincide with the recommendations, there is still work overload. **Conclusion:** due to the problems related to the sizing of the nursing staff, working conditions are precarious and reflect on the quality of care and occupational safety professionals. **Descriptors:** Sizing; Nursing; Personal.

RESUMO

Objetivo: analisar as produções científicas relativas ao dimensionamento do pessoal de enfermagem. **Método:** revisão integrativa com o propósito de responder a questão << Quais as evidências científicas disponíveis sobre dimensionamento do pessoal de enfermagem? >>, mediante o acesso *Online* às bases de dados LILACS, MEDLINE e biblioteca virtual SciELO por meio do cruzamento dos descritores *Dimensionamento, Enfermagem e Pessoal*, nos idiomas Português, Inglês e Espanhol. **Resultados:** foram selecionados 29 artigos científicos, nos quais observou-se dicotomia entre o quantitativo de profissionais de enfermagem e a Resolução COFEN n°293/04 e mesmo quando os números da realidade coincidem com o preconizado, ainda há sobrecarga de trabalho. **Conclusão:** devido à problemática referente ao dimensionamento do pessoal de enfermagem, as condições de trabalho são precárias e refletem na qualidade do cuidado e na segurança ocupacional dos profissionais. **Descritores:** Dimensionamento; Enfermagem; Pessoal.

RESUMEN

Objetivo: analizar las producciones científicas relativas al dimensionamiento del personal de enfermería. **Método:** revisión integrativa con el propósito de responder a la pregunta << ¿Cuáles son las evidencias científicas disponibles sobre dimensionamiento del personal de enfermería? >>, mediante el acceso *Online* a las bases de datos LILACS, MEDLINE t biblioteca virtual SciELO por medio del cruzamiento de los descriptores *Dimensionamiento, Enfermería y Personal*, en los idiomas Portugués, Inglés y Español. **Resultados:** fueron seleccionados 29 artículos científicos, en los cuales se observó dicotomía entre lo cuantitativo de profesionales de enfermería y la Resolución COFEN n°293/04 y mismo cuando los números de la realidad coinciden con lo preconizado, todavía hay sobrecarga de trabajo. **Conclusión:** debido a la problemática referente al dimensionamiento del personal de enfermería, las condiciones de trabajo son precarias y reflejan en la calidad del cuidado y en la seguridad ocupacional de los profesionales. **Descriptores:** Dimensionamiento; Enfermería; Personal.

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INTRODUCTION

The quality of health services is a theme in evidence today, as it is inserted in the daily health institutions in the process of hospital accreditation. Quality is synonymous with trust and good reputation for health services; indispensable tools to attract the clientele that becomes increasingly demanding.¹

Due to the vital role in the care process, a significant portion of the staff of a health care institution is composed of nurses of different levels of training. The head of human resources has a responsibility to be backed by irrefutable arguments for satisfactory management, seeking the balance of costs and efficiency of hospital care.²

Florence Nightingale, pioneer of Nursing, was also a pioneer in human resources planning profession. Around the seventeenth century, aimed at the ratio of workers to tasks to determine the number of people required to perform a set of care responsibilities.³ Institutions providing and forming services have invested and suggested studies on issues related to human resources for health, notably in the field of nursing.⁴

The nursing staff has a dynamic and complex work that meets multiple profiles organizational policies of public and private institutions. Human resources are faced with the challenge of overcoming the technical division at the biggest class of health professionals, consisting of assistants, technicians and nurses. The nursing activities require qualification and competence to manage it as best as possible a large number of professionals with different roles, but they form a single class within the multidisciplinary team.⁵

The appropriateness of hospital costs with human resources to the new quality policy that seeks to improve service delivery, hence may generate flaws in the sizing of the nursing staff.⁶

The COFEN Resolution 189/96 that determined the calculation for proper sizing of the nursing staff had to be adjusted, since the number obtained by calculating available was demonstrably insufficient and incompatible with quality and humanized care for users and professionals. The COFEN Resolution 293/04 provided a calculation adapted with a 15% increase in quantity relative to that obtained with the formula of the previous Resolution, determined the quantitative and qualitative minimum at different levels of training of nursing professionals for a satisfactory health care coverage.⁷

The shortage of human resources in number and qualifications appropriate to meet the demand management and technical nursing service generates an overload for nurses who hold management positions in nursing. That is because this failure commits the quality of patient care, creating difficulties and even managerial and legal issues relating to worker health.⁸

The importance of sizing nursing staff directly reflects the quality of care provided.⁹ For nursing professionals, the topic generates consequences on quality of life, the reduction of occupational risks and the development of its function improved, which reflects the recognition of the class from the improved performance by feasible working conditions.¹⁰

The limited number of scientific works on the subject, in general refer to the comparison of quantitative nursing staff of a service with the provisions of Resolution 293 COFEN / 04. The scarcity in literature complicates the construction of scientific evidence as a basis for identifying problems as well as for taking consistent steps to the particularities and complexities of each situation.

OBJETIVE

- To analyze the scientific production on the sizing of the nursing staff.

METHOD

To proceed with the operationalization of this study, the following steps were taken: 1- Selection of the question for the review; 2- Selection of studies that will compose the sample, 3-Definition of the characteristics of the study; 4-Analysis and interpretation of results and reporting of the review.

This study deals with an integrative review of the literature that had its preparation for the question << What is the production of scientific evidence on the sizing of the nursing staff? >>

The search for articles as the sample for this review took place through online access LILACS - (the Latin American and Caribbean Health Sciences), the MEDLINE - (International Literature on Health Sciences) and the virtual library SciELO Brazil - (Scientific Electronic Library Online) from DeCS descriptors (Descriptors in Health Sciences): sizing; nursing; staff, in English, Portuguese and Spanish. Such search was performed by two researchers, and subsequently were compared the results obtained by both.

In order to establish the sample for this integrative review was established as inclusion

criteria: scientific articles available in full online, reporting the sizing of the nursing staff, published between the period 1990 and 2012, in English, Portuguese and Spanish, and as exclusion criteria: informal case reports, book chapters, dissertations, theses, reports, news, editorial, not scientific texts, scientific articles without availability of full text online and not consistent with the research question. Those that were repeated in more than one database were counted only once.

The descriptors "Sizing", "Personal" and "Nursing" were crossed, in Portuguese, Spanish and English when placed in the search boxes and connected by the connector "AND" to cross in the databases LILACS, MEDLINE and SciELO. The research and analysis of the articles occurred in December 2012 and used an instrument previously validated in the literature for quality checking and evaluation of articles.¹¹

In the SciELO Library, the search resulted in no article after matching the descriptors in

three languages, so the composition of the study sample did not count with the collaboration of any item from this database. In the databases LILACS and MEDLINE, the intersection of descriptors resulted in a total of 225 articles, of which, 109 were unavailable and 73 showed only the abstract was available, for a total of 182 articles excluded from the sample. With availability in its entirety online, totaling 43 articles, of which 1 was excluded for not fitting as scientific articles, 9 articles for repetition and 4 out of theme proposed by the research question. Thus, it was selected 29 articles reliable to the criteria for inclusion in the sample for the present study.

After obtaining the search results by the criteria of inclusion and exclusion, there was a thorough reading of articles in order to verify their suitability due to the guiding question of this study and the presentation of the sample obtained according to the intersection of descriptors is described in table1.

Table 1. Sample obtained in the databases LILACS and MEDLINE, according to the crossings. Vitoria de Santo Antao-PE, 2012.

Crossing	Result	Full text Online	Scientific Articles	Sample
Nursing/ Sizing/Human Resources	6	6	6	5
Nursing/ Sizing/ Personal	216	34	33	22
Nursing/ Sizing/ Human Resource	3	3	3	2
Total	225	43	42	29

The following aspects were considered in the quantitative and qualitative analysis of the selected articles: 1) professional category of authors, 2) place and year of survey, 3) type of magazine and level of scientific evidence on which articles were published; 4) delineation of research and publication year of articles.

RESULTS

Regarding the type of magazine in which the scientific articles were published included in this integrative review, 26 were published in nursing magazines, two on health in general magazine and one magazine in oncology. The presence of studies on the sizing of nursing in magazines that are not specific of the area points out the importance of the issue for healthcare in general. Once that nursing is overloaded and does not play its role well, the whole area of health will be affected directly or indirectly.

It was observed that professionals with PhD participated in the preparation of 19 of the 27 articles that have provided the authors' title. Despite the presence of professionals with PhD happen in 65.51% of the articles found, no study had the exclusive authorship of PhD. Of

these 19 articles, 7 pointed PhDs associated with professors in the authored study and in 8 articles, PhD built science with professional nursing care with expertise in the study area, noting as well that the union of a professional with a more accurate view of practice plus to a greater scientific support for other professional results in scientific quality and relevance production.

The academic participation of nursing students was found only in two articles, reflecting the lack of student involvement in scientific productions to this topic relevant to their future career. It is necessary greater awareness and encouragement for nursing students to the importance of conducting studies concerning the sizing of the nursing staff and the provision of subsidies to enable the occurrence of scientific production by academics. When considering that the students of today are the professionals and researchers of tomorrow, the awakening of a critical view initiated at graduation increases the probability of survival of this nuisance critical to boost research and reflect more positive in practice that will be supported and based on scientific evidence.

Considering the various sectors of nursing performance, it confirms the multiple particularities of each sector to influence the variables determining the sizing of the nursing staff. Thus, knowledge about which sectors are the target of scientific research is crucial to identify the needs of each sector and to

undertake a mapping of the sectors where the research has not happened to encourage and suggest to these studies be developed. The locations where the studies are developed of the researched articles and the plurality of sectors where the studies took place are shown in Table 2.

Table 2. Places where were developed studies of articles in the sample. Vitoria de Santo Antao-PE, 2012.

Local study	n	%
Domiciliary hospitalization (Home care)	1	3,45
Private institution of higher education	1	3,45
psychiatric hospital	1	3,45
Medical-surgical clinic	5	17,24
Intensive Care Units	4	13,79
ambulatory	8	27,58
Central Supply and Sterilization	1	3,45
Surgical Center	1	3,45
Sectors not specified of university hospitals	6	20,69
Not applicable (Review of Literature)	1	3,45

The diversity of sectors which have developed studies, demonstrates that in any area where there is the nursing care it is possible to obtain scientific data concerning the sizing of the nursing staff. Studies on the subject are not limited to specific sectors, which makes it possible to carry out research in the area and reflects the importance of this topic for the different levels of care.

Referente ao delineamento da pesquisa dos artigos científicos, constatou-se na amostra 14 estudos quantitativos exploratório descritivo, 4 estudos de caso, 5 estudos descritivos, 2 estudos descritivos transversais, 1 relato de caso, 2 pesquisas qualitativas e 1 revisão integrativa da literatura.

Regarding the research design of scientific articles, it was found 14 studies in the sample quantitative exploratory descriptive 4 case studies, 5 descriptive studies, 2 descriptive transversal studies, 1 case report, 2 qualitative research and 1 integrative literature review.

To assist the nursing staff in the clinical evaluation of information resulting from research and deciding whether or not to enter the findings into practice, there is an evidence rating system that provides based practice evidence, classified into seven levels.¹² Regarding the level of evidence, 18 articles have evidence level 3, 10 have level of evidence 5 and 1 has evidence level 6.

DISCUSSION

It was found in the scientific articles researched that the sizing of nursing staff is a topic of great relevance for its hard operationalizing according to COFEN Resolution 293/04, since various factors interfere in the number of professionals working in a sector not be established as necessary to a viable quality care for the

patient and the professional. To establish the quantity of these professionals is necessary to measure the time devoted to each patient. This time is under direct influence of the level of severity and consequent dependence of the service user health and is directly proportional to the actual cost of care.¹³⁻¹⁵

All the accumulation of functions delegated to professional nursing contributes to an overload of tasks, which culminates in the unsatisfactory performance of some of them. With excess functions, nursing professionals often spend more time in the execution of administrative tasks than with patient care, then all the scientific and technical support ceases to be better used in favor of the patient.¹⁶

The comparison of the required number of nurses with the existing real quantitative, one of the articles shows a lag of 91 professionals with high level and 70 technical level in a health institution, which corroborates the findings of other studies that found lag of professionals in varied sectors as Surgical Center, hematology inpatient unit, Semi-Intensive Unit, Intensive Care Unit and Occupational Health service.¹⁷⁻²² The work of that nonexistent quantitative is performed by professionals who are overloaded, wear out and are more vulnerable to work accidents. The reflection on patient care is inevitable since the working conditions become incompatible with quality care.²³

A poorly designed sizing can result in a framework similar to the one found in one of the studies, where there is a gap of 205 nurses and over 284 middle level professionals, resulting in an infeasible professional distribution by category. There is then an imbalance of functions, since the levels of the nurses have their roles defined and such imbalance becomes a challenge for nurse

managers.²⁴ In this case, the lack of quality and the small quantity of professionals become a factor that affects a large impact on the care provided to clients.²⁵

Other authors have shown that some resources are available to favor the existence of a feasible sizing. This, in most cases, is recognized as necessary, but the applicability and appropriateness does not include the demand for existing patients. This area needs further research to promote scientific support and consequently be formulated strategies to optimize the sizing of the nursing staff in various sectors.²⁶⁻⁷ The identification of relevant points that influence the operation of a service, such as sizing nursing staff, must occur through the development of research involving the managers of the health institution for the promotion of the teamwork.²⁸

Another study shows that even when the quantitative of nursing staff exceeds what is preconized, the work overload is real due to absenteeism due to a heavy workload and the variables that make complex working routines.²⁹ Numerous diseases and work accidents predispose absenteeism and are usually related to poor working conditions experienced by nursing staff. The proper sizing of nursing staff is a crucial contributor to minimizing absenteeism, as well as being necessary for promoting the health of workers and patients, a matter of respect for the worker to the care service.³⁰ Added to absenteeism, other absence factors collaborate with the increase in the gap of professionals, such as maternity leave, which corresponded to 50% of the removal of nurses in a hospital according to a study.³¹

Therefore, the sizing of the nursing staff is an issue of profound importance, since it influences the quality of care provided,³² beyond benefiting nursing care to patients and contribute to the effective operation of the Nursing Care System. The testing should be performed based on the literature and with scientific support and not on individual experience of the service empirically.³³

CONCLUSION

The sizing of the nursing staff is very complex, since several variables influence on its viability. After comparative analysis of the articles results, it was noted that there is disagreement with COFEN Resolution 293/04, which makes the working conditions poor, reflect in the quality of care and occupational safety professionals, as well as hinder the operation of Systematization of Nursing Assistance. Even when the numbers of reality

coincide with the recommendations, there is work overload due to the level of complexity of patient needs.

It is necessary to support professionals to make decisions that help the problems inherent to the sizing, to program effective interventions and carefully adapted to the demands of employees needed to meet the specific demands of each health service.

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