

The Production of Medline Indexed Articles on Nursing Research in Latin America

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ABSTRACT

The objective of this work was to assess the production of articles on nursing research from Latin American countries published in international journals. A bibliographic search of nursing research articles was carried out in Pubmed during the period 1997-2006. A total of 1246 articles from Latin American countries were published in Medline indexed journals; 46% (575/1246) came from a Nursing School or Department and the rest from other sources. Brazil and Mexico contributed with 76% of publications. Types of studies and priorities included observational and controlled clinical studies (39%), public health (34%), nursing care (14%) and human resources (13%). Forty four percent of articles were published in indexed nursing journals, and the rest in others biomedical journals. In conclusion, the Latin American scientific production on nursing was assessed according to the number of publications indexed in Medline. This product shows strong differences among the countries, with Brazil and Mexico alone accounting for 76% of publications.

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Key words > Nursing – Research - Bibliometrics - Latin America

INTRODUCTION

Several indicators are employed to evaluate the scientific production of a region, one of which is the number and quality of articles published in international journals. In health sciences, these articles are usually included in the Medline database of the National Libraries of Medicine of the USA which allows, among other things, to select the number and type of articles per country and subject. (1) Specifically, the number of academic nursing publications around the world highlights the importance attached to publishing in the field of nursing. Furthermore, financial institutions increasingly value publications in renowned journals as a criterion for granting funds for investigation. (2, 3) Nursing research in Latin America has come a long way in the last few decades, but its scientific production has been rarely quantified in terms of volume and number of publications in international indexed journals throughout time. (4-6) In that sense, the assessment of published articles on nursing research according to their characteristics and trends, is of strategic importance to know each country's position in the re-

gional context and may be useful to design policies for the scientific promotion of the specialty.

The status of nursing research in Latin America was reported by Ailinger RL et al. (4) This work identified the state of nursing research in the region by examining the six Pan American Colloquia (PACINR) performed between 1988 and 1998. A limitation of this study was that no attempt was made to examine publications of full-papers in Medline indexed journals. Previously, Manfredi M et al. (5) had reported in a Pan American Health Organization study, the status of nursing research in seven Latin American countries. Despite these communications, no systematic review of nursing research articles published by Latin American countries in Medline indexed journals has been done.

The objectives of this study were to assess the production of articles on nursing research published by different Latin American countries in international journals, to evaluate the characteristics and priorities and trends throughout time, comparing results among countries in the region.

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METHODS

A bibliographic search of nursing research articles corresponding to the period 1997-2006 was carried out in Pubmed. The Medline database used in this study includes about 15 million references of biomedical articles and information from approximately 4500 journals from 70 countries. On the other hand, the Pubmed database provides free access to Medline and has an interface that allows the access of articles through several search strategies. (7) To identify the articles from different Latin American countries, various filters were used. (8) Mainly, the restrictive criteria <<country>> to identify the first author's affiliation or place of publication was employed; <<nurs* OR enferma-gem OR enfermeria>> was used with the same restrictive function to select the sites where the articles originated, and the temporal limit function to enclose different time periods. This "affiliation" based search strategy allowed us to recognize articles on nursing exclusively coming from a Nursing School, Department or Service. To identify nursing research from any other source, even articles including some reference to nursing, an additional search based on MeSH terms included in the Appendix was done. The same search strategies were used for each Latin American country, taking into account language differences (e.g. Brasil OR Brazil, Mejico OR Mexico NOT New Mexico).

Based on the compilation of this information, a descriptive analysis was performed on the number of nursing publications per country, the trends and the rate of temporal variation for the whole region. Finally, type of articles, priorities on nursing research in the region and Medline indexed journals most frequently involved in Latin American publications were identified.

Since this was a retrospective data analysis not involving human subjects, no informed consent and Institutional Review Board approval were obtained.

Statistical analysis

The data were expressed as absolute values, percentages, averages, or median and the comparisons among periods of time were performed with standard error of the total. In addition, the mean rates of annual variation for each temporal series and the growth index were estimated.

RESULTS

With the "affiliation"-based search strategy, 575 articles on nursing research from Latin American countries were identified in Medline indexed journals published between 1997 and 2006. This corresponds to articles exclusively coming from a Nursing School, Department or Service. The number of articles and the contribution rate of each country during the same decade are observed in Figure 1, with Brazil in the first place, followed by Mexico. Only these two countries contributed with 91% of the publications on nursing research in Latin America. Figure 2 shows the annual growth trend of Latin American publications (upper line), and comparatively with Brazil, Mexico and the rest of the countries (1997-2006). The mean variation rates from all the countries, Brazil and Mexico show that the average annual increase was 17%, 23% and 7% since 1997, respectively. In addition, the growth in the number of articles published since 1997 up to 2006 shows that the number of Brazilian publications was

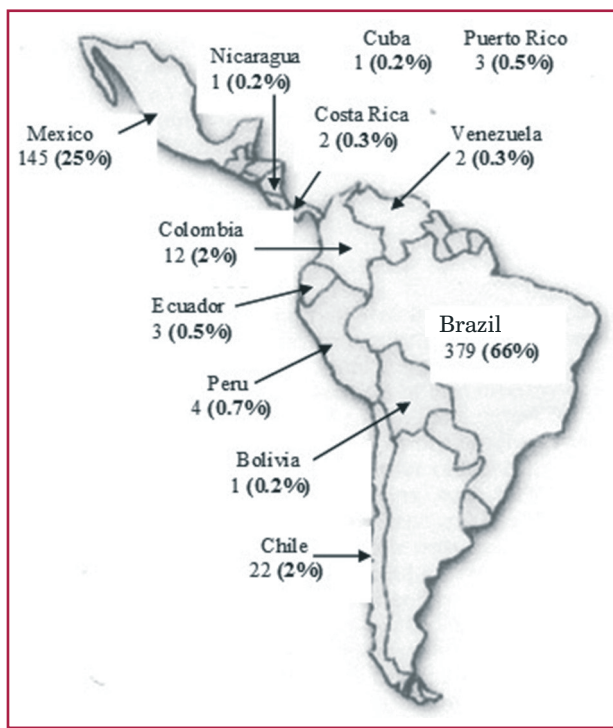


Fig. 1. Nursing research articles included in Medline/Pubmed from 1997 to 2006 exclusively coming from a Nursing School, Department or Service in Latin American countries. Total number (n = 575) and percentage by country.

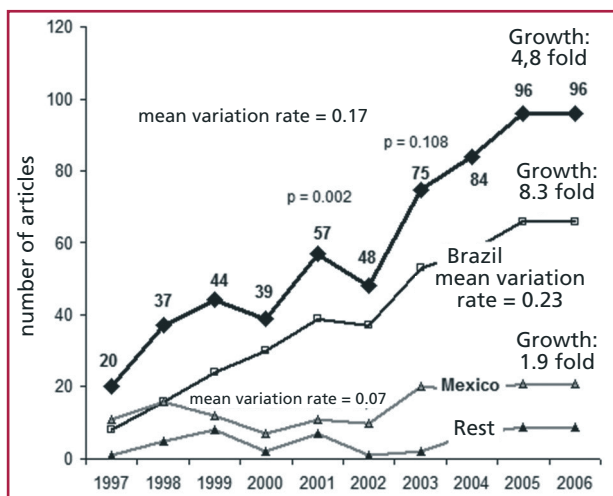


Fig. 2. Number of articles on nursing research from Latin American countries included in Medline/Pubmed from 1997 to 2006, (values of p as regards 2006). Analysis only includes articles coming from a Nursing School, Department or Service.

greater than that from Mexico and the rest of Latin American countries.

With the second search strategy to identify nursing research from any other source, even articles including only some reference to nursing, 1246 publications from Latin American countries were found in

Medline indexed journals between 1997 and 2006. Figure 3 shows the number of articles and the contribution rate of each country during the same decade, in this case, not restricted to a Nursing School, Department or Service. Also here, Brazil and Mexico contributed with 76% of the articles. Comparison with the “affiliation” search strategy showed that 46% (575/1246) of the articles published in this period came from a Nursing School, Department or Service and the rest from other biomedical sources.

Figure 4 summarizes the type of articles and priorities on nursing research based on the analysis of 575 publications. In addition, Table 1 shows Medline indexed journals most frequently involved in Latin American articles on nursing, based on 2004-2006 publications coming from a Nursing School, Department or Service. In this case, 44% of articles were published in an indexed nursing journal, and the rest in others international biomedical journals.

DISCUSSION

The analysis of the individual contribution of each country to the number of articles on nursing research exclusively coming from a Nursing School or Department included in Medline showed that – in order of importance – Brazil and Mexico contributed with 91% of the publications from Latin America between 1997 and 2006. The same analysis not restricted to

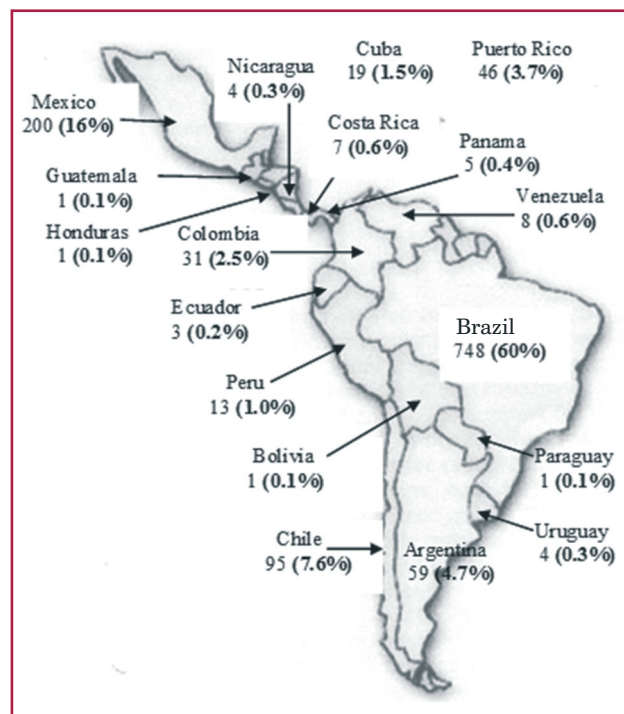


Fig. 3. Nursing research articles included in Medline/Pubmed from 1997 to 2006, not restricted to a Nursing School, Department or Service in Latin American countries. Total number (n = 1,246) and percentage by country.

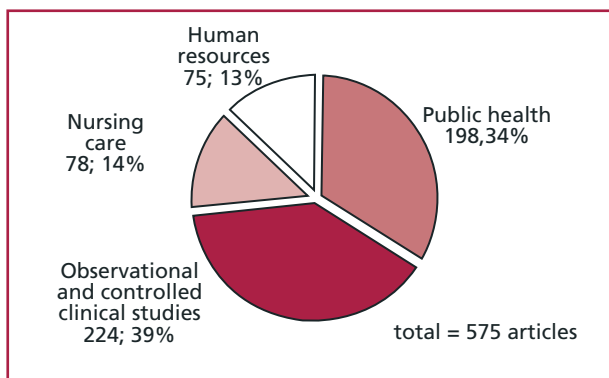


Fig. 4. Identification of type of articles and priorities on nursing research from Latin American countries included in Medline/Pubmed between 1997 and 2006. Analysis only includes articles coming from a Nursing School, Department or Service.

Table 1. Medline indexed journals most frequently involved in Latin American articles on nursing (based on 2004-2006 publications coming from a Nursing School, Department or Service).

Rev Lat Am Enfermagem	19%	J Nurs Scholarsh	
Cad Saude Publica	9%	Arch Latinoam Nutr	
Rev Saude Publica	5%	J Bras Pneumonol	
Mem Inst Oswaldo Cruz	3%	Int J Nurs Terminol Classif	
Stud Health Technol Inform	3%	Nurs Clin North Am	
		J Wound Ostomy	
		Continece Nurs	
J Perinat Neonatal Nurs		Int J Tuberc Lung Dis	
Am J Infect Control		Rev Bras Enferm	
Heart Lung		J Clin Nurs	1%
Birth		Arq Neuropsiquiatr	
Issues Ment Health Nurs	2%	Rev Enferm	
Braz J Infect Dis		Nurs Sci Q	
Braz Dent J		Cancer Nurs	
J Nurs Educ		Evid Based Nurs	
		J Psychosoc Nurs Ment	
		Health Serv	
		Rev Panam Salud Publica	
Other journals	28%	Ren Fail	

a Nursing School or Department showed that Brazil, Mexico, Chile and Argentina contributed with 88% of the publications. Differences obtained when considering articles coming from a Nursing School or Department or from other sources showed that nursing research in many Latin American countries is not directly performed by research nurses, except in Brazil and Mexico. Similarly, a survey on nursing research published in Italian nursing journals showed that 78% of reviewed articles focused on clinical aspects and

only 55% were carried out by nurses. (9)

The magnitude of growth in the number of articles on nursing published since 1997 was between 1.9 and 8.3 fold in the first two countries, Brazil showing a significantly greater increment in the number of publications since 1998 compared with Mexico and the rest of the countries. Based on the data from Table 1, it can be estimated that almost 50% of the articles were published in a local, Medline indexed journal. This is a common characteristic also observed in non English speaking countries, as for example those of Eastern Europe and Japan, that usually publish in a local journal. (10) Muñoz-Soler V. et al. (11) have compared Spanish nursing journals with English-language standard publications in order to identify possible quantitative and qualitative shortcomings in scientific documentation. They concluded that though Spanish scientific publications on nursing have improved, they are not comparable to international nursing journals, especially due to low citation of English bibliography.

Hussein Rassool G. (2, 3) reported some guidelines in order to encourage the publication of Latin America nursing articles in internationally indexed journals; especially since financial institutions increasingly value publications in renowned journals as a criterion for granting research funding. The report of Ailinger RL et al. (4) on the six Pan American Colloquia (PACINR) performed between 1988 and 1998 showed that more studies were done in public health (32%) than in human resources (23%), clinical settings (14%) or other sites (31%). Here we reported similar percentages for public health research, and a significant volume of observational and controlled clinical trials. Based on the number of articles, there was considerable emphasis in human resources and nursing care focused on processes, quality and standards of care. The World Health Organization's list of priorities for a common nursing research agenda proposed in 1997, included workforce supply and demand, education, quality of care, home care, ethics and infection control among others. (12) An analysis of the research topics investigated by Australian nurses from 1995 to 2000 showed that the most frequent were education of nurses and practice issues associated to patient care. (13)

One of the limitations of this study could be the search strategy used. The restrictive criterion <<nurs* OR enfermagem OR enfermeria>> and the MeSH terms (see Appendix) used to select the origin and type of the publication could pose a bias for article individualization, though the manual review of each publication did not show inconsistencies. Also, by not restricting the search exclusively to the nursing category of the Journal Citation Report, articles published in journals of general medicine and other similar specialties could have been included. Although no attempt was made to compare the volume of Latin American publications with the rest of the world, an inventory of nursing education research done by Yonge OJ et al.

(14) showed that 90% of these articles were generated in North America and Europe. Since an association between funding and quality of published medical education research has been clearly demonstrated (15), this type of research has been more common in industrialized countries than in Latin America.

Nursing research is an important activity for nurses, and its main objective is to improve the quality of practice. Publication in nursing journals allows sharing information; however, access of Latin American articles to international indexed journals can be difficult. This barrier usually depends on poor language translation, paucity of study designs, and the lack of multidisciplinary members on the research team. For example, an exploratory study aimed at detecting critical aspects of the manuscripts submitted to the Brazilian Journal of Nursing showed that most of the articles accepted for publication were deficient and needed correction. (16) Another work reporting the tendencies of research on nursing during the 90's in Argentina, Chile, Paraguay y Uruguay, Lange C et al. (17) demonstrated the lack of multidisciplinary teams in these local studies, with 50.7% of the articles having only one author.

The challenge that Latin America must face is to encourage the publication of articles on nursing in international indexed journals. In this sense, co-authorship with international researchers could be a potentially stimulating model to publish. (2, 3) In the past decade, this model was used to improve nursing research performance in Taiwan. (18) In this case, the tendency showed a significant growth in the quantity of papers, which averaged more authors, more international collaboration, higher impact factors and more references listed than earlier articles.

In conclusion, the scientific production on nursing from Latin America was assessed, based on the number of publications indexed in Medline. This product shows strong differences among the countries of the region, with Brazil and Mexico alone accounting for 76% of the publications. Brazil seems to lead the region, especially since 1999. This information could be useful not only to evaluate the individual status of each country, but also to establish more adequate policies regarding the promotion of nursing research.

RESUMEN

Producción de artículos latinoamericanos de investigación en enfermería indexados en Medline

Con el objetivo de evaluar la producción de artículos de enfermería provenientes de Latinoamérica publicados en revistas internacionales, se realizó una búsqueda bibliográfica de artículos de enfermería en PubMed entre 1997 y 2006. Se encontraron 1.246 artículos latinoamericanos publicados en revistas indexadas en Medline; el 46% (575/1.246) provenían de una Escuela o Departamento de Enfermería y el resto eran de otro origen. Brasil y México contribuyeron con el 76% de las publicaciones. Los tipos de artículos y prioridades

incluyeron estudios observacionales y ensayos clínicos controlados (39%), salud pública (34%), cuidados de enfermería (14%) y recursos humanos (13%). El 44% de los artículos se publicaron en revistas de enfermería y el resto en otras revistas biomédicas. En conclusión, esta evaluación de la producción científica latinoamericana en enfermería, basada en la cantidad de artículos publicados en revistas indexadas en Medline, arrojó un producto que muestra fuertes diferencias entre los países de la región, con Brasil y México con el mayor número (76%) de las publicaciones.

Palabras clave > Enfermería - Investigación - Bibliometría - Latinoamérica

Conflicts of interest

None declared.

APPENDIX:

MeSH terms of Pubmed included in the search.

("nurses"[All Fields] OR "nurses"[MeSH Terms] OR nurse[Text Word]) OR nurse's[All Fields] OR ("nurseries"[MeSH Terms] OR nurseries[Text Word]) OR "nurseries"[All Fields] OR "nurseries"[MeSH Terms] OR nursery[Text Word] OR ("nurses"[MeSH Terms] OR nurses[Text Word]) OR nurses'[All Fields] OR ("nursing"[Subheading] OR "nursing"[MeSH Terms] OR "breast feeding"[All Fields] OR "breast feeding"[MeSH Terms] OR nursing[Text Word]) OR nursing's[All Fields] OR ("nursing"[All Fields] OR "nursing"[MeSH Terms] OR nursings[Text Word]) AND Country[Affiliation] AND ("Date"[EDAT]:"Date"[EDAT])

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