

Analysis of scientific production in nursing careers: a study from the Ecuadorian context

Análise da produção científica na carreira de enfermagem: um estudo no contexto equatoriano

Análisis de la producción científica en las carreras de enfermería: un estudio desde el contexto ecuatoriano

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The article presents a regional context-specific analysis of the scientific production in nursing, such as Ecuador. The results presented here can help in science, technology and innovation policies oriented towards nursing and health sciences.

Originality/value:

The originality of the article lies in its analytical vision, as it contrasts public data with the particular reality of the chosen Ecuadorian context. These results may open space for new research agendas.

ABSTRACT

This investigative work is a study on the scientific production of Nursing research. The objective of the study is to characterize the research and scientific production of nursing career teachers in the period from January 2023 to January 2024. This will allow us to obtain a complete and deep understanding of the impact of research in the academic field. Among the results are that the majority of scientific research (55.4%) is quantitative, with a descriptive design 72.2%, correlational 12.2% and quasi-experimental 12%. Approximately, 60.2% of the investigations were carried out on adults and 12% on nurses respectively. Furthermore, 30.1% of the total referred to original publications indexed in Latindex and 14.5% included publications in journals indexed in Scopus. It is for this reason that the analysis is not done based on the number of annual publications, but rather the analysis of the quality of each publication is done, taking into account its impact value according to the indexing of the journal.

Keywords: indicators of scientific production, indicators of science, technology and innovation, research in nursing education, methodological research in nursing.

RESUMO

Este trabalho investigativo é um estudo sobre a produção científica de la investigación en Enfermería. El objetivo del estudio es caracterizar la investigación y la producción científica de los docentes de la carrera de Enfermería en el período comprendido entre enero de 2023 y enero de 2024. Esto nos permitirá obtener un conocimiento completo y profundo del impacto de la investigación en el ámbito académico. Entre los resultados se encuentra que la mayoría de las investigaciones científicas (55,4%) son cuantitativas, con un diseño descriptivo 72,2%, correlacional 12,2% y cuasi experimental 12%. Aproximadamente, el 60,2% de las investigaciones se realizaron en adultos y el 12% en enfermeros. Además, el 30,1% del total se refería a publicaciones originales indexadas en Latindex y el 14,5% incluía publicaciones en revistas indexadas en Scopus. Es por ello que el análisis no se realiza en base al número de publicaciones anuales, sino que se analiza la calidad de cada publicación teniendo en cuenta su valor de impacto según la indexación de la revista.

Palavras-chave: indicadores de produção científica, indicadores de ciência, tecnologia e inovação, pesquisa em educação em enfermagem, pesquisa metodológica em enfermagem.

RESUMEN

Este trabajo investigativo é um estudo sobre a produção científica da pesquisa em Enfermagem. O objetivo do estudo é caracterizar a pesquisa e a produção científica dos professores da carreira de enfermagem no período de janeiro de 2023 a janeiro de 2024. Isso nos permitirá obter uma compreensão completa e profunda do impacto da pesquisa no campo acadêmico. Entre os resultados, destaca-se que a maioria das pesquisas científicas (55,4%) é quantitativa, com um desenho descritivo de 72,2%, correlacional de 12,2% e quase-experimental de 12%. Aproximadamente 60,2% das pesquisas foram realizadas com adultos e 12% com enfermeiros, respectivamente. Além disso, 30,1% do total referiam-se a publicações originais indexadas no Latindex e 14,5% incluíam publicações em periódicos indexados no Scopus. É por esse motivo que a análise não é feita com base no número de publicações anuais, mas sim na análise da qualidade de cada publicação, levando em conta seu valor de impacto de acordo com a indexação do periódico.

Palabras clave: indicadores de producción científica, indicadores de ciencia, tecnología e innovación, investigación en educación en enfermería, investigación metodológica en enfermería.

INTRODUCTION

Nursing is a profession that provides patient care according to the best standards of quality and health safety. The management and execution of nursing work must have a scientific basis, which is why it is necessary for nursing professionals to develop research that promotes teaching-learning (Ñique et al., 2021). Scientific knowledge is an indispensable and important tool to develop writing skills and is enhanced when the results of the studies are published (Ñique-Carbajal et al., 2021). The development of skills is as necessary as the clinical ones, because scientific methods and their application are basic in practical-care work.

Scientific production, which is considered a materialized part of the knowledge generated, is more than a set of documents archived in an information institution, it includes all the academic and scientific activity of a researcher, (Castro & Simian, 2018) scientific production is evaluated, for scientific articles published in journals indexed in world-renowned databases. The transmission of knowledge through publications is a key element for the development of a specific science or field and today, this concept has been revalued even more. Time is showing us an important tendency to publish, disseminate and socialize research results through scientific journals. In this way, the quality of higher education in nursing lies in the need to form research seedbeds that identify problems or risks; formulate intervention proposals and, in turn, provide valuable knowledge (Vallejo López et al., 2020). However, many times nurses have factors that affect their quality of life, limiting their capacity for scientific production (Ayala et al., 2023).

Scientific journals are gathered in databases of different levels of quality and prestige (Falagas et al., 2008). However, there are specific Nursing databases, such as CINAHL or Cuiden, Web of Science (WOS) and Scopus, which currently have the greatest curricular relevance. Due to their multidisciplinary importance and having quality measurement systems, they are the most frequently consulted in the academic field. Especially the WOS (Lima-Serrano et al., 2015) is provided by the Institute for Scientific Information (ISI), a group integrated into Thomson Reuters (North America), and the Scopus database (Lima-Serrano et al., 2015), by Elsevier publishing house (Europe).

WOS is a series of databases that indexes the content of approximately 12,000 journals and conferences in science, technology, social sciences, arts and humanities from 1900 to the present with a US bias. It is an interdisciplinary resource that facilitates access to multiple bibliographic information and databases from different areas of academic knowledge. In fact, Scielo recently took over the Scielo Citation Index database, which includes, among others, four Spanish nursing journals (Index de Enfermería, Enfermería, Global, Gerokomos y Enfermería Nefrológica)(Lima-Serrano et al., 2015; Sánchez-Gómez et al., 2023).

Scopus is another database, also interdisciplinary, that contains approximately 20,000 journals, book chapters and publications from conferences and conferences in the life sciences, health sciences, physics, social sciences and humanities (although production before 1996 is small), in this case, with a European bias. This database includes 8 Spanish Nursing journals (Clinical Nursing, Nursing Index, Nursing Role, Global Nursing, Gerokomos, Intensive Nursing, Midwife Profession and Scientific Journal of the Spanish Society of Neurological Nursing) (Angordans & Noguera, 2009; Burnham, 2006; Lima-Serrano et al., 2015).

According to the information provided by the Academic Database Assessment Tool (DAT), these databases share a significant number of publications and an important feature of both is the ability to track citations to specific publications, articles, and authors. To measure the quality of scientific journal publications, they use the Journal Citation Report or JCR (WOS) resource and SCImago Journal Rank or SJR (Scopus). These measures are based on the number of citations that each scientific contribution receives, on the uncritical assumption that the more citations, the higher the quality of the work (Sánchez-Gómez et al., 2023). Considering the importance of scientific production, the understanding of the process based on research and the dissemination of results through publications in certified scientific journals, it was decided to carry out a study that has as its objective.

METHODS

A descriptive research was carried out because it allows us to give a purpose or an overview that is as precise as possible of the phenomenon studied, transversal since the data were taken at a single moment and in a single time in the Nursing career of an Ecuadorian University (Carrero & Paredes, 2021), in the period January 2023 – January 2024. The universe was represented by 75 full-time and part-time teachers. The variables used were: research design, type of population and location, type of publication, indexing, level of education, sex, number of publications, impact of publications. The educational level variables were measured taking into account the doctorate in Health Sciences or Nursing, master's degree

and professional degree.

To determine whether the research and scientific production of the professors were sufficient, the performance of annual research and the publication of publications per year in indexed journals during the period studied were taken as a reference. The data were obtained from the database of the scientific production criteria of the Nursing career, teaching records and the updated curricula of the Nursing career professors.

Descriptive statistics methods such as absolute and relative frequencies were used to analyze the results. The results were processed in the SPSS version 25 program. The graphs were processed in Excel.

The ethical principles for medical research involving human beings of the Declaration of Helsinki were complied with in the design and execution of the study. The research was carried out by qualified people and informed consent was requested, providing detailed information on the purpose of the research and the confidentiality of the data.

RESULTS AND DISCUSSION

The results obtained from the different characteristics of scientific research have shown that the majority (55.4%) are quantitative and 44.5% qualitative, with 72.2% descriptive design, 12.2% correlational and 12 quasi-experimental design. %. Approximately, 60.2% of the investigations were carried out on adults and 12% on nurses respectively. In that sense, 69.8% of the investigations took place in the urban and rural community and only 8.4% were in the university, information shown in Table 1.

Table 1. Characteristics of the investigations

Nature of the research		n	%
Quantitative		92	55.4
Qualitative		74	44.5
Research design			
Case study		0	0
Descriptive		120	72.2
Correlational		22	12.2
Quasi-experimental		20	12
Population type			
Adults		100	60.2
Nurses		20	12
University students		14	8.4
Preschoolers/schoolchildren		8	4.8
Family caregiver		8	4.8
Teenagers		7	4.2
Older adults		8	4.8
health equipment		1	0.6
Context			
Public/private health institutions		21	12.6
Community (urban and rural)		116	69.8
University		14	8.4
Educational institutions (initial, primary, secondary)		15	9

Source: own elaboration with the research data (2024)

It was observed that, of a total of 166 publications made by teachers of Nursing career, 44.6% corresponded to original articles, while 55.4% corresponded to review articles, there is no evidence of the appearance of publications of type letter to the editor. Furthermore, 30.1% of the total referred to publications originals indexed in Latindex and in 14.5% the publications are found in journals indexed in Scopus (Table 2).

Table 2. Type of publication and indexing

Database / Post Type	Original article		Review article		Letter to the editor	
	No.	% (N=166)	No.	% (N=166)	No.	% (N=166)
Scopus	24	14.5	47	28.3	0	0
Latindex	50	30.1	45	27.1	0	0

Source: own elaboration with the research data (2024)

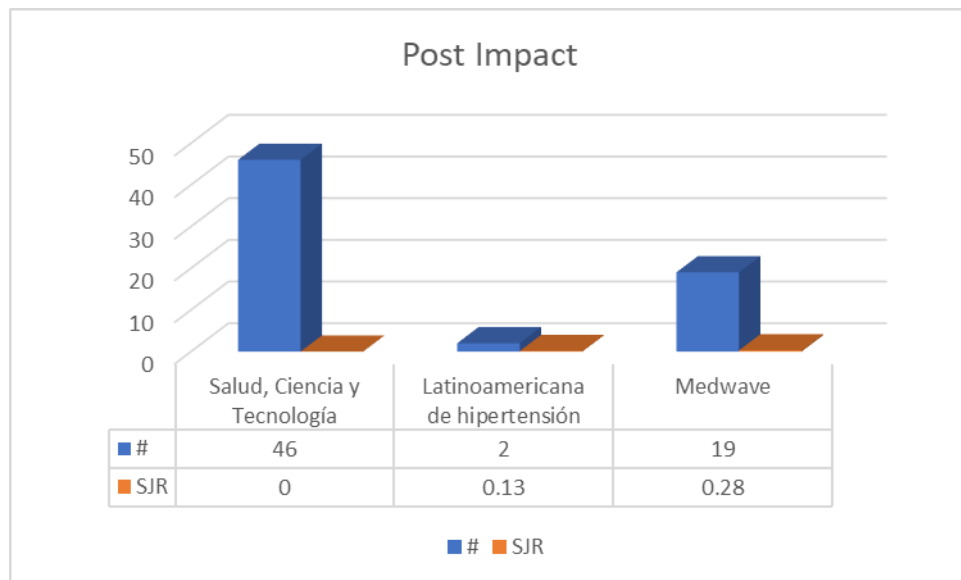
2.7% of the nursing career teachers had a Doctorate degree, of which women had a greater production scientific, represented by the 4 %. of the total. Besides, was a large percentage of teachers who had a master's degree, of these the women had greater scientific production 82.7% and a minimum of teachers with qualification professional (Board 3).

Table 3. Distribution percentage of teachers of the career of Nursing according to degree of instruction, sex and number of publications

Degree of instruction	Male				Female			
	With some scientific publication		No scientific publication		With some scientific publication		No scientific publication	
	No.	% (n=75)	No.	% (n=75)	No.	% (n=75)	No.	% (n=75)
Doctor	2	2.7	0	0	3	4	0	0
Master	7	9.3	0	0	62	82.7	0	0
Job title	1	1.33	0	0	2	2.7	0	0

Source: own elaboration with the research data (2024)

Figure 1. Impact of publications



Source: own elaboration with the research data (2024)

Of the 67 articles published in Scopus, 46 have been published in the journal *Salud, Ciencia y Tecnología* with an SJR of 0, followed by 2 in the *Latin American journal of hypertension* with an SJR of 0.13 and 19 articles in Medwave with an SJR of 0.28.

In relationship with the characteristics of the investigations , the results indicate that 55.4% are quantitative with a descriptive study approach; while 44.5% are qualitative with design descriptive. These findings are similar to several studies in the which predominates (Castro & Simian, 2018) , the descriptive quantitative research with design No experimental, so much

in Nursing as in other careers in the health sector (Ávila et al., 2019; Ramírez-Sánchez et al., 2019) . The lowest percentage of studies qualitative can owe to little training and domain of teachers , a study confirms that the investigation qualitative prevails in doctoral theses in nursing in Brazil (Scochi et al., 2015) .

University teachers have up to the fifth grade of education. They are professionals in those areas in which they have been trained as doctors, masters, graduates in Nursing. At the same time, they work as teachers, as trainers, and are required to do so in the teaching-learning process. The preparation of teachers, both academically and research-wise, is becoming increasingly relevant as an essential condition for an excellent education (Carranza et al., 2022) . Postdoctoral training is a permanent updating process for teachers and researchers with the scientific degree of doctor, which can have different expressions in the diversity of postgraduate education (Andes, 2015) .

In the year 2023, considering journal articles with SJR greater than zero, the Nursing career contributes only 31.3% of scientific production, which indicates a low presence compared to other faculties or areas of knowledge (Utadeo & Specialized, nd) . The low proportion of production in the Nursing career in the context of the university may indicate the need to increase its efforts in the generation of knowledge and research by publishing in high-impact journals, targeting journals in the first 2 quartiles (Q1 and Q2). This strategy will contribute significantly to increasing their representation and contribution to the scientific production of the university (Sánchez et al., 2016) .

This underlines the importance of promoting interdisciplinary collaboration and the dissemination of research results between teachers and professionals from different faculties, universities and areas of knowledge. The findings from both the SCOPUS and WOS databases coincide with what was reported in the research matrices; however, depending on the cut of the query in the databases, the results may vary if the authors do not report their publications. (García Aretio, 2015; Viera Valencia & Garcia Giraldo, 2019) . Therefore, a publication registration, control and monitoring system must be implemented for authors and teachers, in which they can systematically record and update their publications. Additionally, implement a notification and reminder system for authors and teachers that reminds them of the importance of registering their publications in the publication tracking system.

CONCLUSIONS

In conclusion, there is a greater number of teachers who have the academic title of Master, it was evident that the research and scientific production of Nursing teachers is insufficient, so it is necessary to develop an action plan that allows increasing the number of researches. and publications in Nursing teachers.

It can be concluded that a system of registration, control and monitoring of publications must be implemented for authors and teachers, in which they can register and update their publications systematically. Additionally, implement a notification and reminder system for authors and teachers that reminds them of the importance of registering their publications in the publication tracking system.

Main limitations of the study and future research

At the level of limitations we can highlight that the research is a first exploratory effort to characterize the scientific production of nursing in the Ecuadorian context. In this context, it could be said that research is needed with larger samples and/or with a sufficient time frame to be able to compare conclusions and draw policy guidelines to promote scientific production in nursing departments.

In terms of future research, this study could serve as a starting point for longitudinal research to analyze the evolution of scientific production in nursing over time, as well as for comparative studies between different areas of research within the discipline. Furthermore, it would be interesting to further explore the impact of nursing research on clinical practice and improving patient care, as well as investigate the factors that influence the choice of certain research projects and publication in high-impact journals..

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Task	% of contribution of each author				
	A1	A2	A3	A4	A5
A. theoretical and conceptual foundations and problematization:	20%	20%	20%	20%	20%
B. data research and statistical analysis:	20%	20%	20%	20%	20%
C. elaboration of figures and tables:	20%	20%	20%	20%	20%
D. drafting, reviewing and writing of the text:	20%	20%	20%	20%	20%
E. selection of bibliographical references	20%	20%	20%	20%	20%
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