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ORIGINAL

Indicators Associated with Scientific Production and Competencies in Clinical Nurses at a Specialized Institute, Lima-Peru

Indicadores Asociados a la Producción Científica y Competencias en Enfermeras Asistenciales en un Instituto Especializado, Lima-Perú

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ABSTRACT

Introduction: nursing research is a scientific process that supports the practice of care by improving and generating new knowledge for incorporation into practice. However, it is limited by factors that affect the development of the research function, such as indicators that hinder the work of researchers and their investigative competencies.
Objective: to determine the indicators associated with scientific production and competencies in clinical nurses at a specialized institute.
Method: this was a non-experimental study with a quantitative, descriptive, correlational, and cross-sectional approach. The population consisted of a total of 248 nurses working in a specialized institute. Two instruments were used: the Scale of Indicators Associated with Scientific Production and the Instrument of Research Competencies.
Results: regarding the indicators associated with scientific production, the highest scored dimension was preparation for research production (Me=3,00, RI=1,00), and the lowest scored dimension was teamwork and network formation (Me=0,00, RI=1,00). In the variable of scientific production competencies, the lowest scored dimension was dissemination (Me=20,00, RI=8,50). Conclusions: It is evident that the nursing professional's production is limited by factors supporting research. Moreover, scientific production can be boosted by identifying its relationship with the competencies required to conduct research in health institutions.

Keywords: Research Competencies; Scientific Production Indicators; Scientific Production; Nursing; Research.

RESUMEN

Introducción: la investigación en enfermería es un proceso científico que apoya la práctica del cuidado al mejorar y generar nuevo conocimiento para su incorporación en la práctica. Sin embargo, está limitado por factores que afectan el desarrollo de la función investigativa, como los indicadores que obstaculizan el trabajo de los investigadores y sus competencias investigativas.
Objetivo: determinar los indicadores asociados a la producción científica y las competencias en enfermeras asistenciales en un instituto especializado.
Método: este fue un estudio no experimental con un enfoque cuantitativo, descriptivo, correlacional y

transversal. La población consistió en un total de 248 enfermeras que trabajan en un instituto especializado. Se utilizaron dos instrumentos: la Escala de Indicadores Asociados a la Producción Científica y el Instrumento de Competencias de Investigación.
Resultados: en cuanto a los indicadores asociados a la producción científica, la dimensión con mayor puntuación fue la preparación para la producción de investigación (Me=3,00, RI=1,00), y la dimensión con menor puntuación fue el trabajo en equipo y formación de redes (Me=0,00, RI=1,00). En la variable de competencias de producción científica, la dimensión con menor puntuación fue la divulgación (Me=20,00, RI=8,50).
Conclusiones: es evidente que la producción del profesional de enfermería está limitada por factores de apoyo a la investigación. Además, la producción científica puede ser impulsada identificando su relación con las competencias requeridas para realizar investigación en instituciones de salud.

Palabras clave: Competencias de investigación, indicadores de producción científica, producción científica, enfermería, investigación.

INTRODUCTION

The interaction between scientific production and competencies in clinical nursing is a key area of study aimed at advancing healthcare practices and fostering nursing research. This research field emphasizes the importance of identifying and examining indicators that demonstrate both the contribution of clinical nurses to scientific knowledge and their ability to develop and apply specialized competencies in patient care. The significance of this topic is anchored in the need to understand how nurses' clinical and research skills can positively influence the improvement of healthcare and the effectiveness of nursing interventions.[1] Historically, the role of the clinical nurse has undergone significant evolution, extending beyond direct patient care to include participation in research projects and the generation of scientific evidence that underpins nursing practices.[2,3] This transformation has been driven by the increasing complexity of healthcare needs and the belief that empirical research in nursing is crucial for the development of effective interventions and for improving health outcomes.[4,5]

However, the active participation of clinical nurses in research faces significant obstacles, such as time constraints, lack of resources, and an organizational culture that often prioritizes direct care over research activities.[6] Despite these challenges, nursing science has progressed thanks to the development of graduate programs, which have strengthened the profession's role in the scientific field.[7] This progress is reflected in the creation of research groups and networks, which facilitate the dissemination of scientific knowledge and promote the training of nursing staff. Yet, challenges persist in directing nursing science, highlighting the need for a literature review focused on indicators related to scientific production and competencies in clinical nurses.[8] Key indicators of nursing science include publication rates, citation counts, research funding, and collaboration with other researchers. Clinical nursing competencies may include skills in evidence-based practice, critical thinking, and effective communication with both colleagues and patients.[8] Graduate education plays a crucial role in the personal and intellectual development of nurses, demonstrating quality in their work and ensuring reliable healthcare.[9]

A study on nurses' competencies and associated factors highlights the importance of examining competency from the nurses' perspective to identify possible improvements in nursing practice.[10] Nursing is based on the principle of protecting and promoting health through care, implying an essential responsibility to adhere to high-quality standards, supported by robust scientific evidence.[11] In this framework, it is crucial to emphasize the need for nursing professionals to integrate research into their practice as a fundamental component of their activity.[12] The World Health Organization points out that it is essential for nursing professionals to include research in their work to promote healthy lifestyles and provide high-quality, warm care.[13,14]

As for scientific production in nursing, it remains a constant challenge despite the number of research studies and publications, as nurses face barriers to developing and applying research in nursing practice.[15] Peru is not exempt from this reality; a significant number of research projects have not been converted into scientific articles, missing the opportunity to gain visibility in scientific production.[16] The main problems identified are the sources and management of information derived from searches in high-impact indexed journals. Therefore, the use and improvement of indicators in the use of recognized journals of high methodological quality are key.[17]

Moreover, to develop research competencies, cognitive competencies and sub-competencies in research (self-regulation, tolerance to uncertainty, critical attitude, openness, and curiosity) are required, as well as scientific production.[18,19] Additionally, scientific production related to the training of health professionals in Peru has been scarce in the last 5 years. Scientometric indicators show a decreasing trend. Indicators of

scientific production are obtained from the count of scientific publications and provide information about one of the most important aspects of scientific activity, such as the growth of a discipline, a country, an institution, or a research group.[20,21] In this sense, some indicators favor or hinder scientific production and are related to attitudes, knowledge, and the use of resources, which can either obstruct or facilitate the work of the researcher.[22]

Thus, competencies are human skills and abilities for problem-solving and effective development in their environment. In this sense, dimensions are established: Attitudes towards research are considered as a cognitive and methodological factor that influences the conduct of research.[23] In this context of ideas, the attitude towards research can be understood as a system of beliefs, feelings, and dispositions towards research by a community.[24,25] It is an attitude that is not innate and largely depends on the conditions implemented during the educational process and its trajectory.[18]

Research knowledge is acquired through the human ability to identify, observe, and analyze facts and information surrounding them. Through their cognitive skills, they obtain and use it for their benefit. Knowledge, as such, is a very broad term that can be practical or theoretical, besides having numerous branches and areas. Scientific knowledge is that obtained through the scientific method. This knowledge is generated through a series of steps and has properties and characteristics that other types of knowledge do not have. The steps of the scientific method are as follows: observation, induction, hypothesis, experimentation, analysis, and conclusion.[15]

The use of resources for research constitutes a complex system that must be known, assimilated, understood, and efficiently exploited by the researcher or research team.[26,27] The skills, abilities, and attitudes necessary for generating new knowledge involve the ability to distinguish in the surrounding reality situations or problems susceptible to research, to formulate a situation from reality as a research problem adequately, to understand that every research must constitute an original contribution to an area of knowledge, to formulate a scientific problem in terms of hypotheses or research questions, to distinguish among various methodologies the most suitable for a determined problem, to have the judgment to select participants for a study appropriately, to select and design data collection instruments, to master basic statistical analysis tools for processing results, to have the ability to reflect results in tables or graphics, to contrast one's results with those of other research, and to know the ethical elements that must be followed when research involves human beings.[28,29]

The dissemination of knowledge involves all possibilities to make research results publicly available, choosing the most appropriate spaces according to the relevance of the results, and formatting the research report according to the principles and agreements of the scientific community. In this sense, a competent researcher must know the different scenarios (scientific meetings and publications) usual for the dissemination of research, to be able to adapt the format of the research results to the context in which they are presented.[28]

The localization of information sources are instruments for the knowledge, search, and access to information. The spread of computer communication use and information flows through the Internet acquires a decisive strategic importance in developed societies. This importance will continue to grow to shape future culture and increase the structural advantage of the elites that have determined its format.[30] Given the above, the general objective is to determine the indicators associated with scientific production and competencies in clinical nurses of a Specialized Institute, Lima 2022. It is important to measure the phenomenon of study to fill knowledge gaps on the chosen topic to improve the indicators of scientific production as well as the development of research competencies in nursing professionals.

METHODS

Design and participants

The study utilized a quantitative, descriptive-correlational approach with a non-experimental, cross-sectional design.[31] A non-probabilistic convenience sampling was used. Among the 241 nursing professionals who participated in the study, the average age was 40.03±7.68 years, with 92,5 % being female and 7,5 % male. Regarding the level of education achieved, 80,1 % have a specialty degree, 13,7 % are in the process of obtaining it, and 6.2 % do not have one; 12,9 % have a master's degree, 19,9 % are in the process, and 67.2 % do not have master's studies; 1,2 % have a doctoral degree, 2,1 % are in the process, and 96.7 % do not have doctoral studies.

Instruments

The first instrument, developed by Marquina-Luján et al.[22], focuses on the Indicators Associated with Scientific Production, Attitude, Knowledge, and Use of Resources for Research (ACRIN). This tool includes 30 items with dichotomous response options, allowing a detailed evaluation of researchers' attitudes, knowledge, and use of resources. The validity of the instrument was confirmed through the assessment of 10 expert judges and the calculation of Aiken's V coefficient, which yielded a value of 0,89, indicating a high level of agreement

among the experts. Additionally, the reliability of the instrument was determined through Cronbach's alpha coefficient, obtaining a value of 0,718, reflecting acceptable reliability for the instrument.

Table 1. Sociodemographic Characteristics of Nursing Professionals at a Specialized Institute in Lima - 2022

Variables and Categories	No.	%
Gender		
Female	223	92,5
Male	18	7,5
Specialty		
No	15	6,2
In Process	33	13,7
Yes	193	80,1
Master's Degree		
No	162	67,2
In Process	48	19,9
Yes	31	12,9
Doctoral Degree		
No	233	96,7
In Process	5	2,1
Yes	3	1,2
	M (*S*)	Me (*RI*)
Age	40,03 (7,68)	39 (11)

The second instrument, created by Hernández et al.[28], is titled "Scale for the Assessment of Scientific Production Competencies in Higher Education Teachers". This instrument consists of 32 items distributed across three dimensions: identification and organization of information, knowledge generation, and dissemination of scientific knowledge. Each item is evaluated using a five-point Likert scale, ranging from "not competent at all" (1) to "completely competent" (5). The validity and reliability of the instrument were also confirmed, achieving a Cronbach's alpha of 0.962, denoting excellent reliability. The Aiken's V coefficient for this instrument was 0,93, reflecting a high degree of consensus among the five experts consulted.

Procedure

Initially, the necessary coordination with the Nursing Department was established to obtain the required permissions and coordinate the application of the research instruments in various areas of nursing staff care. Subsequently, dates for the application of the evaluation instruments were set. During the days established for data collection, each clinical nurse was informed about the purpose of the study and the instrument to be used, emphasizing the voluntary nature of their participation. The evaluation, conducted through a questionnaire provided in Google Forms format, had an estimated duration of 10 to 20 minutes for each nursing professional, seeking to minimize interference with their work responsibilities while ensuring complete and detailed data collection.

Data analysis

In our study's data analysis procedures section, advanced statistical methods were implemented to ensure an accurate and rigorous evaluation of the collected data. Using IBM SPSS Statistics software version 24.0, a detailed description of the variables involved in the research was conducted. For inferential analysis, the Rho Spearman correlation coefficient was applied, a non-parametric method suitable for evaluating the relationship between variables in studies of this type.

The research instrument was rigorously validated through the judgment of five expert specialists in the area, obtaining a Cronbach's alpha of 0.962, indicating excellent reliability. Furthermore, the statistical analysis process included data mining techniques, focusing on data cleaning and preparation. This process considered the transformation of reverse items to minimize biases in the results.[32]

Results were presented using frequency tables for categorical variables and measures of central tendency and variability for numerical variables. The bivariate analysis was conducted using the Spearman test to determine the correlation between variables. In addition, assumptions for linear regression were verified, including the

independence of errors through the Durbin Watson statistic (DW=2.172), which indicates the absence of error autocorrelation. Linearity and homoscedasticity were examined through scatter plots, and data normality was checked with the Kolmogorov-Smirnov test (K-S=0,030, p=0,200). Collinearity was evaluated through the variance inflation factor and tolerance, considering a significance level of 5 %.

The statistical treatment and analysis of the data were performed using IBM SPSS Statistics software version 26, ensuring compliance with essential ethical aspects of research at all times. This meticulous and detailed approach guarantees the validity and reliability of the findings obtained in the study.

RESULTS

Preliminary analysis

The indicators associated with scientific production are close to the scale's average score, with over 50 % of participants scoring below the median cut-off point (Mdn=13,00, IQR=7,00). The best-scored dimension was preparation for research production, where more than 50 % scored the maximum (Mdn=3,00, IQR=1,00). Dimensions around the median scores included document drafting and publishing (Mdn=2,00, IQR=3,00), time spent on scientific production (Mdn=2,00, IQR=2,00), infrastructure and resources (Mdn=3,00, IQR=2,00), and economic and professional benefits (Mdn=3,00, IQR=1,00). The lowest scoring dimension was teamwork and network formation, where more than 75 % scored below the cut-off point (Mdn=0,00, IQR=1,00) (Table 1).

Table 2. Scientific Production Indicators among Nursing Professionals at a Specialized Institute in Lima - 2022

	Min	Max	Mean	SD	Median	IQR
Preparation for Research Production	1	3	2,47	0,64	3,00	1,00
Document Drafting and Publishing	0	6	2,27	1,72	2,00	3,00
Time Spent on Scientific Production	0	6	2,07	1,36	2,00	2,00
Teamwork and Network Formation	0	5	0,86	1,23	0,00	1,00
Infrastructure and Resources	0	5	2,58	1,34	3,00	2,00
Economic and Professional Benefits	0	4	2,69	1,05	3,00	1,00
Indicators Associated with Scientific	2	26	12,94	5,01	13,00	7,00

Scientific Production Competencies

The competencies in scientific production are close to the median cut-off values, slightly above (Mdn=86,00, IQR=24,00) for more than 50 % of the participants. The lowest scored dimension among participants was dissemination, with more than 50 % scoring below the median cut-off (Mdn=20,00, IQR=8,50). The identification (Mdn=27,00, IQR=7,00) and generation (Mdn=39,00, IQR=11,00) dimensions had over 50 % of participants scoring above the median cut-off (Table 3).

Table 3. Scientific Production Competencies among Nursing Professionals at a Specialized Institute in Lima - 2022

	Min	Max	Mean	SD	Median	IQR
Identification	9	45	26,35	5,80	27,00	7,00
Generation	17	61	39,27	8,36	39,00	11,00
Dissemination	9	37	21,12	6,03	20,00	8,50
Scientific Production Competencies	35	141	86,73	18,37	86,00	24,00

Correlations

The bivariate analysis shows a moderate and significant direct relationship between the indicators associated with scientific production and scientific production competencies (Rho=0,592, p=0,000). Dimensions that showed a moderate and significant direct relationship with scientific production competencies include indicators related to preparation for research production (Rho=0,434, p=0,000), indicators related to document drafting and publishing (Rho=0,503, p=0,000), indicators of time spent on scientific production (Rho=0,481, p=0,000), and indicators related to infrastructure and resources (Rho=0,490, p=0,000); however, indicators related to teamwork and network formation (Rho=0,298, p=0,000), and indicators related to economic and professional benefits (Rho=0,203, p=0,002) showed a low direct correlation with scientific production competencies (Table 4).

Table 4. Bivariate Correlations between Scientific Production Indicators and Scientific Production Competencies among Nursing Professionals at a Specialized Institute in Lima - 2022

	IA_PPI Rho (*p*)	IA_EPD Rho (*p*)	IA_PC Rho (*p*)	IA_TEFR Rho (*p*)	IA_IR Rho (*p*)	IA_BEP Rho (*p*)	IAPC Rho (*p*)	CPC_I Rho (*p*)	CPC_G Rho (*p*)	CPC_D Rho (*p*)
IA_EPD	0,453** (0,000)									
IA_PC	0,368** (0,000)	0,432** (0,000)								
IA_TEFR	0,453** (0,000)	0,490** (0,000)	0,278** (0,000)							
IA_IR	0,342** (0,000)	0,444** (0,000)	0,387** (0,000)	0,341** (0,000)						
IA_BEP	0,227** (0,000)	0,239** (0,000)	0,286** (0,000)	0,083 (0,200)	0,193** (0,003)					
IAPC	0,634** (0,000)	0,808** (0,000)	0,692** (0,000)	0,630** (0,000)	0,700** (0,000)	0,460** (0,000)				
CPC_I	0,365** (0,000)	0,483** (0,000)	0,476** (0,000)	0,261** (0,000)	0,509** (0,000)	0,228** (0,000)	0,577** (0,000)			
CPC_G	0,372** (0,000)	0,427** (0,000)	0,409** (0,000)	0,241** (0,000)	0,456** (0,000)	0,170** (0,008)	0,507** (0,000)	0,808** (0,000)		
CPC_D	0,445** (0,000)	0,490** (0,000)	0,441** (0,000)	0,339** (0,000)	0,368** (0,000)	0,179** (0,005)	0,550** (0,000)	0,617** (0,000)	0,695** (0,000)	
CPC	0,434** (0,000)	0,503** (0,000)	0,481** (0,000)	0,298** (0,000)	0,490** (0,000)	0,203** (0,002)	0,592** (0,000)	0,887** (0,000)	0,950** (0,000)	0,840** (0,000)

Note: ** Significant correlation <0,01, IA_PPI= Preparation for research production, IA_EPD= Document drafting and publishing, IA_PC= Time in scientific production, IA_TEFR= Teamwork and network formation, IA_IR= Infrastructure and resources, IA_BEP= Economic and professional benefits, IAPC= Indicators associated with scientific production, CPC_I=Identification, CPC_G= Generation, CPC_D= Dissemination, CPC=Scientific production competencies.

Linear Regression

The linear regression model obtained indicates a good fit (F=47,424, p=0,000), explaining 44,6 % of scientific production competencies. Indicators associated with scientific production that best explain investigative competencies include preparation for research production (ß=4,258, p=0,008), indicators of document drafting and publishing (ß=2,573, p=0,000), time associated with scientific production (ß=2,932, p=0,000), and infrastructure and resources (ß=3,900, p=0,000) (Table 5).

Table 5. Multivariate Analysis of Scientific Production Indicators Predicting Scientific Production Competencies among Nursing Professionals at a Specialized Institute in Lima - 2022

	B	t	*p*	IC 95 % B (LI-LS)	Tol,	VIF
Constante	54,239	14,900	0,000	47,068-61,411		
Preparación para la producción de la investigación	4,258	2,675	0,008	1,122-7,393	0,766	1,305
Document Drafting and Publishing	2,573	4,067	0,000	1,327-3,820	0,666	1,501
Time Spent on Scientific Production	2,932	3,806	0,000	1,414-4,450	0,724	1,382
Infrastructure and Resources	3,900	5,064	0,000	2,383-5,418	0,748	1,337

Note: Tol.=Tolerance; R2=0,446; F=47,424; p=0,000

DISCUSSION

Scientific production is currently undertaken as part of the refinement of research competencies to address society's demands. The findings indicate that the highest-scoring dimension in the variable of scientific production indicators was preparation for research, where over 50 % scored the maximum. Survey respondents noted that time is allocated to initiate the research process, search for information, and that there are many means of accessing it. The lowest-scoring dimension was teamwork and network formation, with over 75 % scoring below the cutoff point, indicating that the majority are not part of any scientific research network. This study can be compared with Schebella et al.[33] which suggests that conducting various types of research, such as quantitative and qualitative studies, integrative reviews, case studies, experience reports, and the translation, adaptation, and validation of instruments, provides readers with the opportunity to enhance their scientific understanding and professional performance. These contributions facilitate the dissemination of knowledge generated in the field of Nursing and Health, promoting the publication of information and reflections that

lead to new questions, novel discoveries, and changes that bind us and hold us accountable to societal needs.

The expectation regarding education, research, and outreach from the nursing professional community broadens the boundaries and development of the institution in the academic field, projecting us towards the future and fostering internationalization, the maintenance of alliances, and integration between different knowledge areas. This, in turn, stimulates interdisciplinary collaboration and the promotion of innovation in the discipline.

The vast amount of research focused on healthcare provision confirms the imperative and constant demand to stay updated and disseminate knowledge to promote health.[34,35,36,37,38,39,40] This dissemination of knowledge contributes to strengthening care delivery more effectively, generating benefits for both the community and the healthcare system as a whole. The scientific production presented in these studies reflects a deep concern for the development of nursing as a discipline that sits at the intersection of the social and the humanistic.[41]

Regarding scientific production competencies, the lowest-scoring dimension among participants was dissemination, with over 50 % scoring below the median cutoff, which limits the accessibility of the scientific productions worked on by nursing professionals. These results align with Paz et al.[16], which identifies a large number of academic theses that have not yet been transformed into scientific articles, resulting in a lost opportunity to increase their visibility in the realm of scientific production. Nursing, as a profession, is responsible for exploring and perfecting various care delivery strategies, relying on advancements in knowledge and research outcomes. This discipline faces two imperatives: first, to adapt to the health needs of an ever-evolving society where scientific and technological knowledge becomes quickly outdated; and second, to assume its role as a knowledge generator, its dissemination, and application to enhance the quality of care provided to individuals and communities.

However, it is essential to note that not all nursing professionals recognize the urgent need to maintain an active and constant search for improvement through continuous training. Therefore, the authors emphasize the importance of promoting the development of research competencies, particularly in the context of primary healthcare, as a fundamental means to meet these professional and disciplinary commitments.[42]

Moreover, the development of research competence in professional nursing, the desire to do and the ability to do, is crucial for carrying out studies on the phenomena of practice, along with knowing, knowing how, and being. It is the health institution's responsibility to provide the means and infrastructure necessary for realizing the ability to do within research competence. Additionally, there is a low scientific productivity, partly due to the high academic and administrative load.[43]

However, it is worth noting that several studies have revealed factors that hinder nursing professionals' participation in research activities. Among these factors are the lack of resources, ranging from the availability of funding to limited access to relevant technologies and tools; unfavorable attitudes towards research, which may manifest as reluctance or apathy towards scientific exploration; and insufficient levels of knowledge and competence in the research field.

Implications

The interrelation between indicators associated with scientific production and competencies in clinical nurses reflects a crucial dimension for advancing nursing practice and promoting a research culture in the healthcare sector. This study highlights the importance of addressing the challenges faced by clinical nurses at the Specialized Institute in Lima, Peru, focusing on preparation for research, training in research competencies, and dissemination of results, which are key aspects for enhancing nursing's contribution to scientific knowledge and healthcare improvement.

From a professional perspective, these findings underscore the need for strategies aimed at strengthening nurses' research skills, promoting their active participation in research. Implementing mentorship programs and developing training workshops could be effective measures to improve research competencies and encourage teamwork and the formation of scientific networks.

Politically, it is crucial for healthcare and educational institutions to collaborate in creating an environment that supports nursing research. This includes allocating adequate financial resources, access to information technologies, and promoting policies that incentivize research and the publication of results. Integrating research as an essential component of nursing practice could significantly transform healthcare quality and the efficacy of nursing interventions.

Theoretically, this study contributes to a deeper understanding of the factors influencing scientific production in nursing. Future research should explore specific strategies to overcome identified barriers, examine the impact of advanced training on research competency, and assess the effect of nursing research on patient health outcomes.

Limitations

These inherent limitations in our study might have biased the results and their interpretation. The cross-

sectional design of the research, for example, prevents establishing causal relationships between indicators associated with scientific production and competencies in clinical nurses. Moreover, the non-probabilistic convenience sampling may not be representative of all clinical nurses in specialized institutes, limiting the generalization of findings to other populations or contexts.

A major restriction of this study is its ability to reflect only an instant snapshot of the evaluated situation, without capturing the evolution of competencies and scientific production over time. This design does not allow for observing the development or change in attitudes, knowledge, and resource use for research that could occur as a result of specific interventions or the natural progression of the profession.

The limitation related to the use of self-administered tools, such as Google Forms questionnaires, also deserves consideration. While these methods facilitate data collection, they may be subject to social desirability bias, where participants might tend to respond in ways that are perceived more favorably. This factor could influence the accuracy of the collected information on research competencies and scientific production.

To address these limitations in future research, employing longitudinal designs that allow tracking the evolution of competencies and scientific production over time would be advisable, as well as expanding the sample to other specialized institutes or even a broader spectrum of health professionals to increase the generalization of results. Additionally, incorporating mixed methods that combine quantitative with qualitative techniques could enrich the understanding of the dynamics underlying the indicators and research competencies, allowing for a deeper exploration of clinical nurses' perceptions, experiences, and motivations towards research.

CONCLUSIONS

It is crucial to implement strategies aimed at mitigating the exposed obstacles to foster and enhance the active participation of nursing professionals in research, promoting the convergence of efforts towards an evidence-based practice that optimizes the quality of care provided and contributes to the progress of the nursing discipline as a whole.

REFERENCES

1. Van Bogaert P, Clarke S, Willems R, et al. Nurse practice environment, workload, burnout, job outcomes, and quality of care in psychiatric hospitals: A structural equation model approach. J Adv Nurs; 69. Epub ahead of print 2013. DOI: 10.1111/jan.12010.

2. Aiken LH, Clarke SP, Cheung RB, et al. Educational Levels of Hospital Nurses and Surgical Patient Mortality. JAMA; 290. Epub ahead of print 2003. DOI: 10.1001/jama.290.12.1617.

3. Kutney-Lee A, Sloane DM, Aiken LH. An increase in the number of nurses with baccalaureate degrees is linked to lower rates of postsurgery mortality. Health Aff; 32. Epub ahead of print 2013. DOI: 10.1377/hlthaff.2012.0504.

4. Estabrooks CA, Scott S, Squires JE, et al. Patterns of research utilization on patient care units. Implement Sci; 3. Epub ahead of print 2008. DOI: 10.1186/1748-5908-3-31.

5. Rycroft-Malone J, Kitson A, Harvey G, et al. Ingredients for change: Revisiting a conceptual framework. Quality and Safety in Health Care; 11. Epub ahead of print 2002. DOI: 10.1136/qhc.11.2.174.

6. Edwards N, Webber J, Mill J, et al. Building capacity for nurse-led research. Int Nurs Rev; 56. Epub ahead of print 2009. DOI: 10.1111/j.1466-7657.2008.00683.x.

7. Alvim NAT. Produção e difusão do conhecimento científico da enfermagem na atualidade: desafios e implicações na formação e qualificação do enfermeiro. Esc Anna Nery; 14. Epub ahead of print 2010. DOI: 10.1590/s1414-81452010000100001.

8. Gálvez Toro A. La legitimidad del valor de la producción científica enfermera. Index de Enfermeria; 16. Epub ahead of print 2007. DOI: 10.4321/s1132-12962007000200001.

9. Tschannen-Moran M, Hoy AW. Teacher efficacy: Capturing an elusive construct. Teach Teach Educ; 17. Epub ahead of print 2001. DOI: 10.1016/S0742-051X(01)00036-1.

10. Istomina N, Suominen T, Razbadauskas A, et al. Competence of nurses and factors associated with it. Medicina (B Aires); 47. Epub ahead of print 2011. DOI: 10.3390/medicina47040033.

11. Aldana GM, Babativa DA, Caraballo GA, et al. Attitudes towards Research Scale (ATRS): Evaluation of its psychometric properties in a Colombian Sample. Rev CES Psicol 2020; 65: 89–103.

12. Arellano-Sacramento C, Hermoza-Moquillaza R, Elías-Podestá M, et al. Actitud hacia la investigación de estudiantes universitarios en Lima, Perú. Rev la Fund Educ Médica 2017; 20: 191–197.

13. Organización Mundial de la Salud. La situación de la enfermería en la Región de las Américas.

14. Arias E, Bornacelly I, Elacqua G. Educación superior en América Latina: ¿Cómo las crisis económicas de las últimas décadas han afectado la matrícula? Banco Interam Desarro 2021; 1–25.

15. Restrepo DM. La investigación en enfermería: un constante reto para la disciplina. CES Enfermería 2022; 2: 1–4.

16. Tenorio CP, Ñique C, Rodríguez LD, et al. Características y producción científica de las investigaciones de una escuela de enfermería en Perú. Univ Médica; 62. Epub ahead of print 2021. DOI: 10.11144/javeriana.umed62-2.cpci.

17. Díaz-Chieng LY, Alejandro Vitón-Castillo A. Analysis of scientific information issued in the Revista de Información Científica Journal, 2017-2019. Rev Habanera Ciencias Médicas 2020; 19: 2017–2019.

18. Rojas-Cama LF, Contreras-Camarena CW. Competencias en investigación y producción científica en médicos de hospitales e institutos de salud de Lima, Perú. An la Fac Med 2022; 83: 95–103.

19. Arias Gómez A. La investigación en enfermería. Rev ESDEN 2017; 20: 4321.

20. Suyo-Vega JA, Meneses-La-Riva ME, Fernández-Bedoya VH, et al. Undergraduate Teaching in Scientific Research: A Systematic Review of the Literature Available in Scopus, Eric and Scielo, 2012-2021. J Educ Soc Res 2022; 12: 12–31.

21. Vitvitskaya O, Suyo-Vega JA, Meneses-La-Riva ME, et al. Behaviours and Characteristics of Digital Natives Throughout the Teaching-Learning Process: A Systematic Review of Scientific Literature from 2016 to 2021. Acad J Interdiscip Stud 2022; 11: 38–49.

22. Marquina-Luján RJ, Huaire-Inacio EJ, Horna-Calderón VE, et al. Indicadores asociados a la producción científica en docentes de educación superior de Lima. Aporte Santiaguino 2020; 168–173.

23. Rietveldt F, Vera L. Factores que influyen en el proceso de elaboración de la tesis de grado. Omnia Año 2012; 18: 109–122.

24. Becerra A De, Marlen G, Ramírez J, et al. Actitudes hacia la investigación científica en docentes de metodología de la investigación. Tabula Rasa 2011; 14: 295–309.

25. Castro M, Simian D. Nursing and Research. Rev Medica Clin Las Condes 2018; 29: 301–310.

26. Barriga SF, Barbón OG, Buenaño C V., et al. Impact on the scientific production of a preparation for research experiential program for university teachers. Form Univ 2018; 11: 41–48.

27. Vidal MJ, Araña AB. Gestión de la información y el conocimiento. Rev Cuba Educ Medica Super 2012; 26: 474–484.

28. Hernández C, Gamboa A, Avendaño W. Validación de una escala para evaluar competencias investigativas en docente de Básica y Media. Boletín Redipe 2020; 10: 239–406.

29. Cardoso EO, Cerecedo MT. Valoración de las Competencias Investigativas de los Estudiantes de Posgrado en Administración. Form Univ 2019; 12: 35–44.

30. Manzanet A. La gestion de información para el desarrollo de la enfermeria. 2016; 32: 1–2.

31. Auza-Santivañez JC, Lopez-Quispe AG, Carías A, Huanca BA, Remón AS, Condo-Gutierrez AR, et al. Work of the emergency system in polytraumatized patients transferred to the hospital. AG Multidisciplinar 2023;1:9-9. https://doi.org/10.62486/agmu20239.

32. Gonzalez-Argote J, Castillo-González W. Update on the use of gamified educational resources in the development of cognitive skills. AG Salud 2024;2:41-41. https://doi.org/10.62486/agsalud202441.

33. Marcillí MI, Fernández AP, Marsillí YI, Drullet DI, Isalgué VMF. Characterization of legal drug use in older adult caregivers who are victims of violence. SCT Proceedings in Interdisciplinary Insights and Innovations 2023;1:13-13. https://doi.org/10.56294/piii202313.

34. Machuca-Contreras F, Lepez CO, Canova-Barrios C. Influence of virtual reality and augmented reality on mental health. Gamification and Augmented Reality 2024;2:25-25. https://doi.org/10.56294/gr202425.

35. Quiroz FJR, Gamarra NH. Psychometric evidence of the mobile dependence test in the young population of Lima in the context of the pandemic. AG Salud 2024;2:40-40. https://doi.org/10.62486/agsalud202440.

36. Marcillí MI, Fernández AP, Marsillí YI, Drullet DI, Isalgué RF. Older adult victims of violence. Satisfaction with health services in primary care. SCT Proceedings in Interdisciplinary Insights and Innovations 2023;1:12-12. https://doi.org/10.56294/piii202312.

37. Auza-Santiváñez JC, Díaz JAC, Cruz OAV, Robles-Nina SM, Escalante CS, Huanca BA. Gamification in personal health management: a focus on mobile apps. Gamification and Augmented Reality 2024;2:31-31. https://doi.org/10.56294/gr202431.

38. Cuervo MED. Exclusive breastfeeding. Factors that influence its abandonment. AG Multidisciplinar 2023;1:6-6. https://doi.org/10.62486/agmu20236.

39. Ato M, López-García JJ, Benavente A. Un sistema de clasificación de los diseños de investigación en psicología. An Psicol 2013; 29: 1038–1059.

40. Perez C, Santín D. Minería de datos. Técnicas y herramientas. Editor Paraninfo.

41. Schebella GM, Olschowsky A. Comunicación de la producción científica y visibilidad del conocimiento en la enfermería. 2017; 38: 12–13.

42. Morales-García WC, Vallejos M, Sairitupa-Sanchez LZ, et al. Depression, professional self-efficacy, and job performance as predictors of life satisfaction: the mediating role of work engagement in nurses. Front Public Heal; 12. Epub ahead of print 1 February 2024. DOI: 10.3389/fpubh.2024.1268336.

43. Ricalde-Castillo Y, Celis-Mendoza M, Morales-García M, et al. Sociodemographic Factors, Mental Health, and Emotional Eating Associated With Concern for COVID-19 Contagion in Nurses: A Cross-Sectional Study. J Prim Care Community Heal; 14. Epub ahead of print 2023. DOI: 10.1177/21501319231200400.

44. Cabrera-Aguilar E, Zevallos-Francia M, Morales-García M, et al. Resilience and stress as predictors of work engagement: the mediating role of self-efficacy in nurses. Front Psychiatry 2023; 14: 1202048.

45. Dilas D, Flores R, Morales-García WC, et al. Social Support, Quality of Care, and Patient Adherence to Tuberculosis Treatment in Peru: The Mediating Role of Nurse Health Education. Patient Prefer Adherence; 17. Epub ahead of print 2023. DOI: 10.2147/PPA.S391930.

46. Sucapuca C, Morales-García WC, Saintila J. Work-Related Factors Associated With Burnout Among Peruvian Nurses. J Prim Care Community Health 2022; 13: 1–8.

47. Chura S, Saintila J, Mamani R, et al. Predictors of Depression in Nurses During COVID-19 Health Emergency; the Mediating Role of Resilience: A Cross-Sectional Study. J Prim Care Community Health; 13. Epub ahead of print 2022. DOI: 10.1177/21501319221097075.

48. Bernales-Turpo D, Quispe-Velasquez R, Flores-Ticona D, et al. Burnout, Professional Self-Efficacy, and Life Satisfaction asPredictors of Job Performance in Health Care Workers: The Mediating Role of WorkEngagement. J Prim Care Community Health 2022; 13: 215013192211018.

49. Crossetti Oliveira M da G, Silva Giordani da C. Producción científica en enfermería contribuyendo a la innovación y traslado del conocimiento. 2019; 1–2.

50. Robles V. Competencias investigativas en profesionales de Enfermería de la Atención Primaria de Salud: necesidad inaplazable. 2022; 14: 1–6.

51. Ñique-Carbajal C, Díaz-Manchay R, Sandoval-Abanto R. Producción científica de docentes de medicina y enfermería en Google Académico. Rev la Fund Educ Médica 2021; 24: 65.

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