


# Favorable Attitudes Toward Research in Nursing Students During Internship: A Cross-Sectional Study in Peru

SAGE Open Nursing  
Volume 9: 1–7  
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DOI: 10.1177/23779608231206776  
journals.sagepub.com/home/son



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## Abstract

**Introduction and objective:** Research attitudes among nursing students are essential to improve the quality of care and promote evidence-based practice. The objective of this study was to determine the attitude towards research of nursing students during their undergraduate internship and explore the demographic and study-related factors that may affect these attitudes.

**Materials and Methods:** In this cross-sectional retrospective study, 100 nursing interns who are >18 years old, currently studying and working, and have a prior academic background were included. To assess the attitudes toward research, the 43-item Likert-like Scale of Attitudes Towards Research questionnaire was used, which has been previously validated in the Peruvian population and includes three distinct dimensions: affective, cognitive, and behavioral.

**Results:** The mean age was  $28.7 \pm 5.2$  years and 88% were women. Fifty percent had favorable attitudes toward research. The favorable attitude according to the affective, cognitive, and behavioral dimensions was 28%, 11%, and 45%, respectively. Although the youngest age group (20 to 30 years old) had the highest frequency of favorable attitudes (36%), no significant differences were found when compared to other age groups ( $p = .082$ ).

**Conclusions:** Nursing students presented favorable attitudes toward research during their undergraduate internship, especially among young students. However, more research is needed to understand how these attitudes are shaped and consolidated during the research process and how they can be further improved to promote evidence-based practice in nursing.

## Keywords

attitude, nursing research, scientific research and technological development, Peru

Received 14 January 2023; Revised 24 August 2023; accepted 23 September 2023

## Introduction

Scientific research is a systematic and organized process that aims to provide explanations for natural and social phenomena, leading to the generation of new knowledge and the resolution of practical problems (Aldana de Becerra et al., 2016). In the current era, quantifying scientific research has become imperative for all countries due to its potential impact on the (bio)economy and society. Ranking systems have been developed to identify leaders in research, such as Scimago (SCImago Journal Rank), which indicates that high-income countries such as the United States (~9 million published documents), China (~4 million), and the United Kingdom (~2 million) are responsible for the majority of scientific production (2). In contrast, Latin America faces a different reality, with Brazil being the country with

the highest scientific output, but with only 669,280 published documents, followed by Mexico (~232 thousand documents) and Argentina (~159 thousand documents). Peru falls far behind the top of the list with only about 14,000 published documents (Mejia et al., 2018).

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This scientific distance is partly due to the fact that only 0.15% of the gross domestic product (GDP) is invested in Peruvian research, compared to 2.5% of GDP invested by the United States or the Scandinavian countries (>3% of GDP; De la Cruz, 2019). Although COVID-19 has been a trigger to promote the development of scientific research, with a lot of financial support from the state and nongovernmental organizations, the realities have not changed much, and despite the effort, there is still a scientific gap among countries (Moya-Salazar, Gomez-Saenz, et al., 2021, Moya-Salazar, Jaime-Quispe, et al., 2022).

The research landscape in Peru is multifaceted. Despite government initiatives to fund and encourage research in health-related fields (Moya-Salazar, Gomez-Saenz, et al., 2021), a number of obstacles exist that impede systematic and sustained scientific dissemination. One gap is the uneven distribution of resources and opportunities across professions, which has recently been demonstrated in a disparity between doctors and nurses (Vergara-Mejía et al., 2022). As a result, the quantity of scientific publications authored by nurses has been limited. Additionally, while nursing students are required to undertake research as part of their undergraduate thesis, few of these studies are ultimately published (Tenorio et al., 2021). This means that much of the valuable scientific evidence produced by nursing students remains overlooked and underutilized.

Given this, the university's purpose is to encourage scientific development and continuously generate new knowledge that meets the needs of the population (Rosario et al., 2016). In it, students are sought to develop their critical thinking and enhance their skills from the first year of higher education; helping them to reflect, make decisions and provide creative solutions (Cangalaya, 2020). For this reason, the Law 30220 of the Peruvian Ministry of Education directs the university community to address search and teaching problems through research in response to the needs of the population as knowledge evolves, and technology improves (Superintendencia Nacional de Educación Superior Universitaria [SUNEDU], 2014). This has prompted university faculties, mainly those of health sciences, to strengthen and organize research activities, scientific publications, and large-scale technology transfer and development (R&D) activities involving students, teachers, and administrative staff.

Thus, nursing follows the scientific method to study care in all its dimensions. Research-based practice is central to the development of nursing professionals; therefore, it is highly relevant to document their findings and describe their contribution to healthcare (Trujillo et al., 2015). Faced with this situation, medical universities around the world seek the link between academic training and research (Gutiérrez et al., 2019). For this reason, students need to develop a positive attitude toward research, as occurs in countries with greater publications of papers (Ross & Burrell, 2019). However, the reality is different in Peruvian universities, where research is undergoing a crisis due to the low output and quality of

citable documents. Research shows that Peruvian nursing students have a moderate attitude toward research (58%; Chara-Saavedra & Olortegui-Luna, 2018). It is also estimated that it decreases as one reaches the end of the degree. One study showed that 58.8% of nursing interns had a negative attitude toward scientific research (González & Monsalve, 2017). Therefore, there is a need to continually assess such attitudes throughout higher education in order to understand the true state of students and facilitate their development of new knowledge as nursing professionals.

The objective of this study was to assess the attitudes of undergraduate nursing students toward research during their internship program. Furthermore, a comprehensive analysis was conducted to explore the influence of demographic and academic factors on their research attitudes, using a multidimensional approach.

## Methods

### *Study Design and Settings*

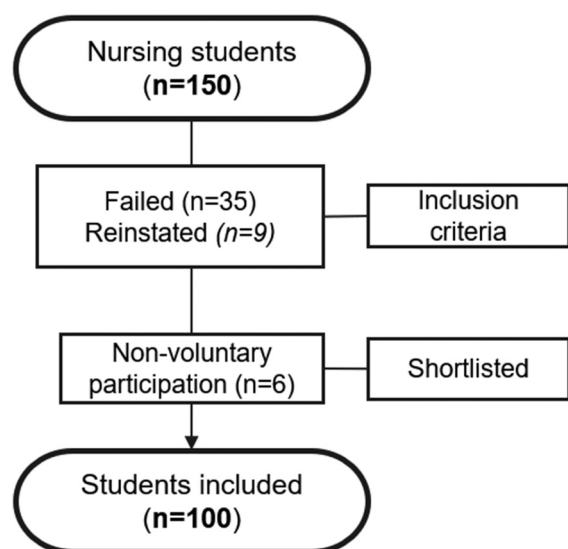
In the present study, a cross-sectional retrospective approach was utilized to investigate the attitude towards research among students of the nursing program at the Universidad Norbert Wiener in Lima (Peru). The university has a student population of approximately 3,400, which includes new students and students with a previous degree enrolled in the same program. The nursing program comprises 5 years, and the last year involves a hospital and community internship (Moya-Salazar et al., 2023). The data for this study were collected during the first semester of 2019.

The academic program comprises three main components: basic courses, specialty courses, and clinical courses (Moya-Salazar, Cañari, et al., 2021). In the third and fourth years, students are required to take a research course which is centered on the development of a dissertation project. While elective courses on research are not part of the program, students may opt to participate in "research hotbeds" programs that are offered by the university and are focused on scientific projects.

### *Population, Inclusion Criteria, and Instruments*

The study population was made up of 150 nursing students. The inclusion criteria were student volunteers of >18 years of both sexes, with a previous technical or university degree, who study and work, and who enrolled in 2019-I. The researchers excluded those who failed a subject or students reinstated to the program after a period of >1 year (Figure 1). Sampling was nonprobabilistic for convenience and patient recruitment was done through student emails and through social networks (i.e., WhatsApp and Facebook).

Aldana de Becerra's "Scale of Attitudes Towards Research—EAI," which was modified in Peru by Chocca



**Figure 1.** Flowchart for the inclusion of study participants.

in 2017, was employed to assess students' research attitudes (Aldana de Becerra et al., 2016; Chocca, 2018). This scale comprises 43 items divided into three dimensions: affective (eight items), cognitive (15 items), and behavioral (16 items) and has demonstrated good reliability ( $\alpha = 0.885$ ). The responses were recorded on a Likert scale ranging from strongly agree (4 points) to strongly disagree (0 points) for positive questions and vice versa for negative questions. The EAI also includes six negative questions. Based on the scores, the students' research attitudes were categorized as favorable ( $>114$  points), moderately favorable (95 to 114 points), and unfavorable ( $<95$  points). The utilization of this scale is expected to provide valuable insights into students' attitudes toward research in the current study.

### Variables, Data Processing, and Analysis

The variables under study included attitude dimensions, namely, affective, cognitive, and behavioral. Participants provided informed consent and completed the paper survey in approximately 7 min, and response quality was checked. Data were entered into an IBM SPSS v24.0 database (Armonk, USA). Descriptive statistics were initially applied to estimate absolute and relative frequencies for categorical variables and the mean and standard deviation for continuous variables.

The Kolmogorov–Smirnov test was used to estimate the distribution of the data. In addition, the differences among the items evaluated (affective, cognitive, and behavioral dimension, and age group) and between the semesters of the study were detailed using the *t* student test for related samples and one-way ANOVA. The Rho Spearman's test was used to estimate correlations between study variables, considering a threshold of  $p < .05$  and a 95% confidence interval as significant.

### Ethical Aspects

This study was approved by the Ethics Committee of the Universidad de Ciencias y Humanidades (ACTA N° 057, May 3, 2019) and has complied with the bioethical principles and guidelines of the Declaration of Helsinki (WMA, 2013).

### Results

The sample ( $n = 100$ ) consisted mostly of women (88%), with an age range of 21 to 47 years and a mean age of  $28.7 \pm 5.2$  years (95%CI [27.4–30.1]). The majority of the students were between 20 and 30 years old (70%), while 25% were between 31 and 40 years old and 5% were between 41 and 50 years old. None of the students were affiliated with a research group or had previously published academic papers (Table 1).

Half of the students had favorable attitudes toward the investigation and 14% (14/100) were unfavorable. The attitudes according to the three dimensions showed that in the affective dimension, 28 (28%) nursing students had a favorable attitude and 11 (11%) were an unfavorable one. In cognitive, 11 (11%) students presented a favorable attitude, 49 (49%) moderately favorable, and 30 unfavorable. And, in the behavioral one, 45 (45%), 51 (51%), and 19 (19%) students had favorable, moderately favorable, and unfavorable attitudes, respectively (Table 2).

Half of the students agree that research can be too much workload and that participating in research arouses a lot of interest. In addition, 59 (59%) felt that research provided the elements to make good decisions, 58 (58%) felt that innovative ideas came from everyday problems, and 52 (52%) felt that there were many opportunities for training.

The youngest age group, from 20 to 30 years, had the highest frequency of being positive about the research at 36% (36/100), although there was no difference with the other groups ( $p = .082$ ). Women had the highest frequency of favorable attitudes with 43% and 28% of students from the community boarding school having favorable attitudes, although they did not show differences ( $p > .05$ ; Figure 2).

### Discussion

This study evaluated the attitude toward research in a hundred nursing students during their undergraduate internship, finding that half had a favorable attitude, mainly the group of younger students, without demonstrating changes between the hospital and community internship programs.

### Strengths

The strengths of the study are that it is one of the first developed for internship nursing students, unlike other Peruvian studies that evaluated regular students, even though there is evidence that attitudes toward research decrease as the end

**Table 1.** Attitudes Toward Research According to the Characteristics of Internship Nursing Students.

Variable	Categories	Attitudes toward research			Total
		Favorable	Moderately favorable	Unfavorable	
Sex	Female	43 (43%)	34 (34%)	11 (11%)	88 (88%)
	Male	7 (7%)	2 (2%)	3 (3%)	12 (12%)
Age group (years)	20–30	36 (36)	27 (27)	7 (7)	70 (70)
	31–40	12 (12)	7 (7)	6 (6)	25 (25)
	41–50	2 (2)	2 (2)	1 (1)	5 (5)
Internship	Hospital	22 (22)	22 (22)	6 (6)	50 (50)
	Community	28 (28)	14 (14)	8 (8)	50 (50)

Data in N%.

**Table 2.** Multidimensional Analysis of Research Attitudes in Nursing Students.

Dimensions	Attitudes toward research			Total
	Favorable	Moderately favorable	Unfavorable	
Affective	28 (28%)	61 (61%)	11 (11%)	100 (100%)
Cognitive	11 (11)	49 (49)	30 (30)	100 (100)
Behavioral	45 (45)	51 (51)	19 (19)	100 (100)

Data in N%.

of the degree is reached (Chara-Saavedra & Olortegui-Luna, 2018). Then, several systematic reviews have not included studies in Latin American countries due to the low production of papers (Mejia et al., 2018). As a result, this study serves as a significant scientific contribution aimed at filling this gap within the context of Latin America (Ross & Burrell, 2019).

### Main Findings

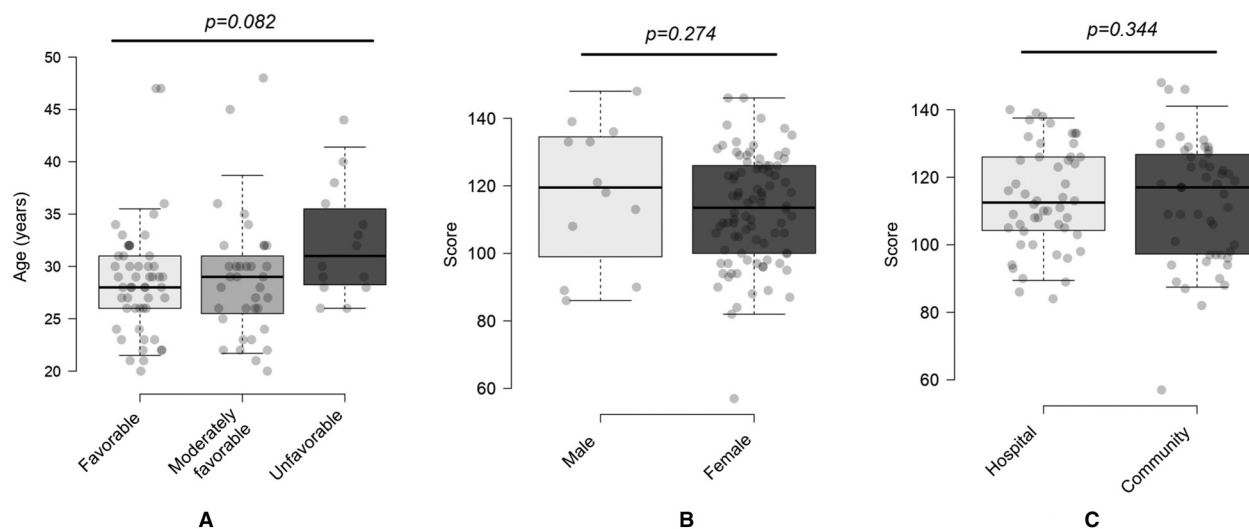
This study showing that half of the students had a positive attitude toward the survey, are consistent with a study of populations in the United States, Turkey, and the United Kingdom where nursing students generally had a positive attitude toward the research (Ross & Burrell, 2019). Furthermore, the findings of this study align with research conducted in three Arab medical universities, which also demonstrated a significantly positive attitude toward research (Amin et al., 2012). This is because students understand the value of research in professional practice, as a solid research foundation strengthens the professional's identity and increases the credibility of the nurse as a valued member of the health team (Ross & Burrell, 2019). These findings are relevant because universities are currently seeking to create links between academic training and research. In the United Kingdom, universities such as Manchester and Oxford have student research centers to promote research as an active commitment to society (Gutiérrez et al., 2019). These initiatives are important because they link the two

branches of university education (Pereyra-Elías et al., 2014), as scientific research is closely related to the socio-economic development of countries, and high-income countries benefit most from it (Mejía et al., 2018).

The reality is quite different in Peruvian universities, where national research is going through a crisis due to the low output and low quality of citable documents (Moya-Salazar, Cañari, et al., 2021). In addition, it is also limited by the “academic update course” protected by the SUNEDU, a modality to obtain a bachelor's degree and/or professional title quickly and easily. This reduces the value and merit of the student in the research process when a degree or title is earned by performing a thesis (Chara-Saavedra & Olortegui-Luna, 2018).

This study is supported by an analysis by Latin American universities, which showed that half of the population had a positive attitude toward research (Palacios, 2021). However, this is far from studies in other countries, where only 20.3% of students in the Faculty of Health Sciences responded to the survey with a favorable attitude and 50.9% showed a normal attitude (Arellano-Sacramento et al., 2018). This is confirmed in nursing interns in the province of Chiclayo (Peru), where 58.8% had a negative attitude toward scientific research, so it is estimated that attitudes decrease as the end of the degree is reached (Gonzales & Monsalve, 2017).

On the other hand, 36% of students had a moderately favorable attitude, which differs from other studies in Lima where this attitude exceeded 50% (Chara-Saavedra & Olortegui-Luna, 2018; Jurado, 2017). Moderately positive attitudes were also reported among Venezuelan dental undergraduates, as they considered the complex process and the limited time available to prepare their research paper (Brito et al., 2008). The same occurs in Peruvian medical students (Moya-Salazar, Cañari, et al., 2021), where 63.2% had a moderately favorable attitude, and in Costa Rican students, where an inadequate attitude (78.5%) and deficient knowledge about research predominated (Acón-Hernández et al., 2015). A possible explanation for why more than half of nursing students are positive is that they find participation in research of great interest to them because it provides the ingredients to make good decisions. Also, they often think they have come up with innovative ideas from common



**Figure 2.** Distribution of research attitudes according to age (A), sex (B), and type of nurse internship (C).

problems that help them train. Future research must be conducted to find out how these attitudes are changed and consolidated during the research process, both as a product of degree attainment and as a product of science.

### Limitations

First, due to the nature of the research, this study does not ascertain the frequency or duration allocated to research courses within the university curriculum, nor does it delve into the depth of training imparted on this subject (Gonzalez & Monsalve, 2017). Second, this study does not consider the perception of the teacher's attitude toward research, since it has a direct correlation with that of the student and may be a mechanism that influences the process of strengthening scientific interest (Brito et al., 2008). Nor was it taken into account whether the participants' work since they worked for more than 10 h is associated with an unfavorable attitude. Third, this study was carried out before the COVID-19 pandemic and attitudes may be altered due to the lockdown and virtual education. Finally, this study enrolled nursing interns, however, there may be differences between students from other health science schools and other cities in the jungle and mountains of Peru (Acón-Hernández et al., 2015; Brito et al., 2008; Chocca, 2018; Jurado, 2017).

### Education Implications and Future Directions

In university education in health sciences in Peru, prioritizing the educational implications related to research is crucial. Although various educational models have been implemented in nursing education to include research courses, internal competitive funds to finance projects led by students and teachers, research seedbed workshops, as well as free courses in scientific writing, revision, and publication

(Lavalle & de Nicolas, 2017), these efforts have been insufficient. For example, during the pandemic, scientific production in nursing has not been expanded (Espinosa et al., 2021; Moya-Salazar, Gomez-Saenz, et al., 2021). Apparently, nursing students show a favorable attitude and motivation towards research, but they are limited in their diligence to transcend toward the consolidation of research skills provided in undergraduate studies, which impedes scientific production. This study ratify this situation and highlights the need for future research with a qualitative or mixed approach (Jimenez et al., 2017) to explore in-depth nursing students' perceptions of research.

Persistent gaps among healthcare professionals in Peru are another aspect related to nursing research. One of these gaps is the differences in employment opportunities. A significant number of newly graduated nurses do not work in the Ministry of Health due to the lack of incentives and job and research opportunities (Jimenez et al., 2017). Another gap that affects nursing students and professionals is the disparity in academic opportunities and activities between urban and rural communities. Although many nursing students express an interest in working in rural areas (Huicho et al., 2015), the number of professionals in these zones remains low (Huarachi et al., 2023). While opportunities for clinical development and research are increasing in peri-urban and rural health centers, these positions are not attractive enough to newly graduated nurses due to a lack of offers, interventions, and policies. Gender is another gap in nursing, as only 8% of male nurses in Peru earn slightly higher monthly income than female nurses (Rosas et al., 2019). Additionally, the influx of immigrant professionals and students (Barchfield, 2023) creates a competitive environment whose consequences for research have yet to be evaluated. University decision-makers must consider all these factors to improve educational programs, focusing on

nursing students' opportunities in Peru and emphasizing the importance of research in all aspects.

## Conclusion

This study found that nursing students exhibited positive attitudes toward research during their undergraduate internship, regardless of age or demographic factors. However, to further improve the quality of care, scientific advancements, and technological innovations, it is crucial to establish stronger connections between students and research practices. Therefore, promoting research-oriented training programs and encouraging student participation in research projects could facilitate the development of the necessary skills and competencies required for nursing practice in the current era of science and technology.

## Acknowledgments

The authors thank the nursing students for their selfless and voluntary collaboration during the study. In addition, we thank the Nesh Hubbs team for their support in the statistical analysis and review of the manuscript.

## Author Contribution Statements

Conceptualization: Jeel Moya-Salazar, Marleny Ccorahua, Eliane A. Goicochea-Palomino, and Hans Contreras-Pulache; data curation: Jeel Moya-Salazar, Marleny Ccorahua, and Eliane A. Goicochea-Palomino; formal analysis: Jeel Moya-Salazar, Marleny Ccorahua, Eliane A. Goicochea-Palomino, and Hans Contreras-Pulache; research: Jeel Moya-Salazar, Marleny Ccorahua, Jeel G. Moya-Espinoza, and Hans Contreras-Pulache; methodology: Jeel Moya-Salazar, Marleny Ccorahua, Jeel G. Moya-Espinoza, and Hans Contreras-Pulache; project administration: Hans Contreras-Pulache; resources: Marleny Ccorahua; software: Jeel Moya-Salazar and Hans Contreras-Pulache; supervision: Jeel Moya-Salazar, Jeel G. Moya-Espinoza, and Hans Contreras-Pulache; validation: Jeel Moya-Salazar, Marleny Ccorahua, and Eliane A. Goicochea-Palomino; visualization: Jeel Moya-Salazar and Eliane A. Goicochea-Palomino; writing: Jeel Moya-Salazar, Marleny Ccorahua, Eliane A. Goicochea-Palomino, and Jeel G. Moya-Espinoza; writing—proofreading and editing: Jeel Moya-Salazar, Marleny Ccorahua, Eliane A. Goicochea-Palomino, Jeel G. Moya-Espinoza, and Hans Contreras-Pulache.

## Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.


## Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

## Ethical Aspects

This study was approved by the Ethics Committee of the Universidad de Ciencias y Humanidades (ACTA-CEI-N°-057, May 3, 2019) and has complied with the bioethical principles and guidelines of the Declaration of Helsinki (16).

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