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Original article

Artificial intelligence in nursing education: representations and expectations at the Autonomous University of Guerrero

Inteligencia artificial en formación de enfermería: representaciones y expectativas en la Universidad Autónoma de Guerrero

Inteligência artificial na formação em enfermagem: representações e expectativas na Universidade Autônoma de Guerrero

Alicia Morales Iturio[1] 0000-0002-4428-5998 profesmx2023@gmail.com
Blanca Estela Sánchez Jaimes[1] 0009-0007-7939-0193 blancasanchezjaimes@hotmail.com
Jose Alejandro Montelongo Herrera[2] 0009-0001-6195-5578 josealejandromontelongo8181@gmail.com
Laura Isabel Vázquez Pérez[3] 0009-0002-3716-727X lauraisabel960324@gmail.com

[1] Autonomous University of Guerrero. Mexico.
[2] University of Medical Sciences of Pinar del Río. Cuba.
[3] Latin American University. Mexico.

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ABSTRACT

Artificial intelligence has been gaining prominence, especially in the training of future graduates, experiencing steady growth over time, particularly in the education of healthcare professionals. The aim of this research was to examine the social perceptions and the views that students express

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regarding artificial intelligence in nursing education among students at the Autonomous University de Guerrero. The study was conducted using a quantitative approach, with a descriptive, non-experimental, and cross-sectional design. The findings revealed that most students hold a favorable view of the use of artificial intelligence tools, highlighting their capacity to facilitate learning, improve access to scientific data, and deepen the understanding of complex topics. Furthermore, participants pointed out the relevance of including education on artificial intelligence and digital health in the university curriculum. However, concerns also emerged regarding overreliance on technology, the potential erosion of critical thinking, and the ethical risks associated with the inappropriate use of these tools. It is concluded that students' perceptions of artificial intelligence encompass both positive views related to educational innovation and concerns about ethical and academic issues. Therefore, it is necessary to encourage pedagogical approaches that promote a critical, responsible, and ethical use of artificial intelligence in professional nursing education.

Keywords: artificial intelligence; nursing; higher education; social representations; university students; professional training.

RESUMEN

La inteligencia artificial ha ido cobrando protagonismo, especialmente en la capacitación de los futuros egresados. Ha experimentado un crecimiento sostenido con el tiempo, en particular en la formación de profesionales en el ámbito de la salud. La investigación tuvo como fin examinar las percepciones sociales y las proyecciones que el alumnado manifiesta en relación con la inteligencia artificial en la preparación de enfermería, entre alumnos de la Universidad Autónoma de Guerrero. La investigación se llevó a cabo con un enfoque cuantitativo, utilizando un diseño descriptivo, no experimental y transversal. Los hallazgos mostraron que la mayoría de los estudiantes posee una visión favorable acerca de la utilización de herramientas de inteligencia artificial, subrayando su capacidad para facilitar el aprendizaje, mejorar el acceso a datos científicos y profundizar en la comprensión de temas complejos. Además, los participantes señalaron la relevancia de incluir educación sobre inteligencia artificial y salud digital en el plan de estudios universitario. Sin embargo, también surgieron inquietudes sobre la dependencia de la tecnología, la posible merma del pensamiento crítico y los riesgos éticos asociados con el uso inapropiado de esas herramientas. Se concluye que las percepciones que los estudiantes tienen sobre la inteligencia artificial abarcan tanto

visiones positivas relacionadas con la innovación educativa como inquietudes sobre cuestiones éticas y académicas. Por lo tanto, se hace necesario incentivar enfoques pedagógicos que fomenten un uso crítico, responsable y ético de la inteligencia artificial en la formación profesional en el ámbito de la enfermería.

Palabras clave: inteligencia artificial; enfermería; educación superior; representaciones sociales; estudiantes universitarios; formación profesional.

RESUMO

A inteligência artificial vem ganhando destaque, especialmente na capacitação de futuros egressos, experimentando um crescimento sustentado ao longo do tempo, particularmente na formação de profissionais da área da saúde. A pesquisa teve como objetivo examinar as percepções sociais e as projeções que os estudantes manifestam em relação à inteligência artificial na preparação em enfermagem entre alunos da Universidade Autônoma de Guerrero. O estudo foi conduzido com uma abordagem quantitativa, utilizando um delineamento descritivo, não experimental e transversal. Os achados mostraram que a maioria dos estudantes possui uma visão favorável acerca da utilização de ferramentas de inteligência artificial, destacando sua capacidade de facilitar o aprendizado, melhorar o acesso a dados científicos e aprofundar a compreensão de temas complexos. Além disso, os participantes apontaram a relevância de incluir a educação sobre inteligência artificial e saúde digital no currículo universitário. No entanto, também surgiram preocupações quanto à dependência excessiva da tecnologia, à possível redução do pensamento crítico e aos riscos éticos associados ao uso inadequado dessas ferramentas. Conclui-se que as percepções dos estudantes sobre a inteligência artificial abrangem tanto visões positivas relacionadas à inovação educacional quanto inquietações sobre questões éticas e acadêmicas. Portanto, faz-se necessário incentivar abordagens pedagógicas que promovam um uso crítico, responsável e ético da inteligência artificial na formação profissional em enfermagem.

Palavras-chave: inteligência artificial; enfermagem; educação superior; representações sociais; estudantes universitários; formação profissional.

INTRODUCTION

Artificial intelligence (AI) has established itself as one of the most impactful technological advances in the educational and healthcare sectors in recent years. Its use in higher education has revolutionized teaching and learning methods. to tools that they can create content, examine data, and facilitate guidance in academic decisions such as Medical. In the health sciences, technologies have evolved using clinical simulations, as well as offering intelligent tutoring and enhancing diagnostic reasoning (Buchanan *et al.*, 2021).

For nursing education, AI It constitutes an opportunity that enhances skills in areas such as critical thinking, digital competence, and problem-solving. For Shang (2021), the incorporation of AI into the nursing teaching-learning process not only implies adopting technological tools, but also leads to an evolution in the professional skills necessary to face the challenges. raised by current health systems. Likewise, Buchanan *et al.* (2021) argue that AI has the capacity to considerably enrich nursing education by providing learning pathways adapted to each student and more advanced clinically simulated environments.

The increasing use of digital tools in universities has opened a space for reflection on their ethical, pedagogical, and community implications. Among students, there is a largely favorable perception of artificial intelligence, considering it an effective support for enhancing learning processes and streamlining the handling of large volumes of information. However, a significant portion of the faculty expresses reservations, especially regarding the potential loss of critical thinking skills, overexposure to automated environments, and the increase in dishonest behavior in academic work.

Along these lines, Porayska *et al.* (2023) argue that the integration of AI into educational settings requires an approach that considers both its ethical dimensions and its educational effects, taking into account the social transformations that these technologies generate in teaching and learning methods. Reviewing contemporary academic literature allows us to understand how students in health sciences programs perceive and use artificial intelligence in their training. For example, Vera's (2024) work with nursing students shows that they value AI's contribution positively, especially in the rapid retrieval of information and as a study aid. However, the participants themselves pointed out significant shortcomings related to the limited training they receive from their institutions and the inadequate integration of these technologies into curricula.

Along similar lines, Han *et al.* (2025) found that nursing students were turning to generative artificial intelligence tools to assimilate complex subjects, develop academic tasks and improve their clinical practice, although concerns about the veracity of the information generated and the ethics in the use of these digital platforms continued to exist.

From the perspective of social representations, formulated by Moscovici (1961), the ideas that students are trained about AI not only cover his application practice, but also include beliefs, meanings, values, and expectations that They are shared within society. These social representations help to to understand how certain groups analyze emerging phenomena and how these assessments affect their attitudes and reactions Regarding new technologies. In the university environment, these representations can have a direct impact on the acceptance or resistance towards the incorporation of AI in training procedures.

Similarly, Sharples (2023) indicates that generative AI is changing the way in which students generate, structure, and disseminate knowledge, leading educational institutions to review their methods of teaching and its ethical principles. By Therefore, it is crucial understanding how future Nursing professionals see these innovations technological and what expectations they develop about of its influence on its professional training.

For this reason, the purpose of this analysis is to examine social ideas and aspirations of the students about AI in nursing education, having taking into account the opinions, advantages, concerns and obstacles that university students recognize in the face of the inclusion of these technologies in their learning.

Artificial intelligence in higher education

In recent years, AI has acquired a role important in university education thank you to the creation of digital solutions that help in learning, assessment, and Academic administration. Of agreement with Luckin *et al.* (2016), during the last few years, AI facilitates the creation of more personalized learning experiences to through adaptive systems that are They adapt to the needs and to rhythm individual of each student. These innovations Technological advancements have fostered new forms of interaction between students, teachers, and the educational resources.

Similarly, the emergence of generative AI technologies has changed the way students They obtain, structure, and generate educational information. According to Sharples (2023), systems based on generative artificial intelligence are substantially transforming traditional pedagogical models, affecting areas such as text writing, access to documentary sources, and high-level problem-solving. However, the same researcher warns that these technologies bring with them ethical tensions, especially related to intellectual honesty and the development of reflective thinking.

In parallel, various studies have shown that the university population oscillates between seeing AI as an opportunity to revitalize education and perceiving it as a source of uncertainty within the academic environment. This is reflected in the work of Cotton *et al.* (2024), where participants recognized the potential of these tools to improve their performance and facilitate studying, although at the same time they expressed fears regarding excessive reliance on automated systems and the moral risks arising from their unchecked use.

Conversely, the emergence of AI in the university environment has led to discussions about the urgency of improvement the digital skills and technological literacy in curricula academics. According to it indicated According to Holmes *et al.* (2019), educational entities Come face the challenge of including artificial intelligence in an ethical and pedagogically responsible way, fostering a critical and reflective use of these tools among the students.

In the field of nursing, artificial intelligence has begun to establish itself as a resource important for improving processes, both clinical as educational. According to Buchanan et al. (2021), AI can help in the Acquisition of care skills through advanced simulated environments, support platforms for clinical guidance, and learning platforms adapted to different healthcare settings.

In a way similarly, Shang (2021) argues that the digitization of care systems medical requires that future nursing professionals acquire skills in the use of advanced technologies, information analysis, and critical reasoning in the clinical setting. Therefore, the institutions university students have started the search of approaches to integra topics related to artificial intelligence in their health training curricula.

In recent years, several studies have focused on how nursing students perceive the use of artificial intelligence in their professional training. Vera's (2024) work, conducted with university students in this discipline, revealed that they considered AI a particularly valuable tool for enhancing learning

and optimizing the review of scientific materials. However, participants also expressed concerns related to the limited training provided by institutions and the lack of clear regulatory frameworks to guide its use in academic contexts.

In line with the above, Han *et al.* (2025) found that nursing students used generative AI systems primarily to answer curricular questions, synthesize extensive content, and strengthen their performance in healthcare settings. Although the participants they pointed out advantages significant, also they stated concerns regarding the accuracy of the answers provided and the possible dangers linked to dependence on technology.

Social representations and student expectations about artificial intelligence

The idea of social representations, presented by Moscovici (1961), facilitates the understanding how social groups create common meanings about of phenomena that arise in his life daily. From this perspective, the related collective imaginaries AI is shaped by experiences, knowledge, principles, and social discourses that affect how students understand these technologies.

Jodelet (1986) argues that social representations guide attitudes and behaviors group dynamics, which facilitates the interpretation of acceptance, resistance, or adjustment procedures in the face of new social and technological realities. In the university setting, these representations affect of manner directly influences the expectations of the students create about of the effect of AI on your professional development.

In this regard, several current studies have shown that students of education superior develop opinions mixed opinions about artificial intelligence. While Some think that these technologies They promote autonomy in study and the renewal of teaching practices, others express concerns on the potential Decreased analytical skills and increased unethical academic conduct. According to Porayska *et al.* (2023), the implementation of AI in the educational context involves addressing, on the one hand, its technical benefits and, on the other hand, the ethical and social conceptions that the educational actors themselves have been building. According to Hernández and Mendoza (2018), descriptive studies aim to detail characteristics, perceptions, and behaviors observed in a specific population. Therefore, this research employs a cross-sectional approach to facilitate data collection at a single point in time and to detail the perspectives, feelings, and experiences of students regarding the incorporation of AI-based tools into their university education.

Thus, the objective is to examine students' social perceptions and aspirations regarding AI in nursing education. This will help to understand how future professionals view the inclusion of these technologies and the educational challenges involved in attempting to implement them.

MATERIALS AND METHODS

The study was conducted using a quantitative methodology, with an observational, descriptive, and cross-sectional design. This quantitative approach facilitated the identification and the analysis of social perceptions and expectations of Students' perceptions of the use of AI in nursing education, based on the systematic collection of quantifiable information.

Context and study population

The study had place at the School of Nursing belonging to the Autonomous University of Guerrero, Mexico, during the 2025-2026 academic year. The population it consisted in students enrolled in the Nursing degree program from various semesters.

An intentional selection procedure based on accessibility was used to choose the participating subjects taking into account the availability and willingness of students to participate voluntarily. The sample composed of 120 nursing students who gained access to participate in the analysis and who responded to the questionnaire used for data capture.

Methods and tools for data collection

The strategy used to gather information was a survey. A structured questionnaire was designed, based on a review of academic literature related to AI, university education, and nursing training.

The instrument consisted of two sections:

Section I. Sociodemographic Data

It included variables such as:

- Age.
- Sex.

- Academic semester.
- Frequency of use of artificial intelligence tools.
- Digital platforms used most frequently.

Section II. Social representations and expectations about artificial intelligence

This block was integrated with five-level Likert scale statements:

- Completely opposite.
- Opposite.
- Indifferent.
- In favor.
- Completely in favor.

The dimensions evaluated were:

- Perception of academic usefulness.
- Impact on learning.
- Professional expectations.
- Perceived risks.
- Ethics and technological dependence.
- Acceptance of artificial intelligence in nursing.

The content of the instrument underwent a validation process based on the judgment of specialists in the field. including to professionals in nursing, research, and educational technology. specialists They assessed the clarity, relevance, and coherence of the different items. After this, it was carried out I conducted a pilot test with a group of 15 nursing students to ensure that would understand the questionnaire and for evaluate its internal consistency.

Data collection procedure

The collection of information took place during the period between January and March 2026. First, academic permission was obtained from the relevant authorities of the Faculty of Nursing attached to the Autonomous University of Guerrero, to carry out the research.

The students were then informed about the study's goals, the voluntary nature of their participation, and the privacy of the data they would share. A digital form created in Google Forms was used to conduct the survey, facilitating remote and anonymous participation from the students.

Prior to completing the questionnaire, all students signed an informed consent form in digital format. This document detailed the study's purpose, the voluntary nature of their participation, and the exclusive academic use of the information obtained. Furthermore, the study complied with the regulations of the General Health Law on Health Research in Mexico, as stipulated by the Ministry of Health in 2014. It was considered a low-risk study, as it only used a questionnaire to gather perceptions and opinions, without any direct interaction with the participants.

RESULTS

The sample consisted of 120 students from the Nursing program at the Autonomous University of Guerrero. Of these, 72.5% were women and 27.5% were men. Regarding semester distribution, 58.3% of the students were in their fourth and sixth semesters, while the remainder were distributed among the first, second, and eighth semesters.

Regarding the use of artificial intelligence technologies, 89.2% of students reported using AI platforms for educational activities related to their professional careers. The most common tools included ChatGPT, Gemini, and automated assistants for academic research. Similarly, 64.1% indicated that they regularly use these platforms to complete assignments, answer questions, and find scientific data.

Regarding the perceived usefulness in the academic field, 81.7% of respondents agreed or strongly agreed that AI is useful in the training process and provides immediate access to educational materials. Furthermore, 76.6% felt that these tools help in understanding complex issues related to the clinical field and strengthen academic thinking in the nursing profession.

In another aspect, 73.4% of students indicated that AI could be a transformative resource for renewing university education and improving teaching strategies in academic training. Likewise, 78.4% expressed that educational institutions should include formal training in artificial intelligence and digital health in their curricula.

However, opinions related to risks and concerns in the academic sphere were also detected. 68.3% of respondents expressed their fear of becoming dependent on technology due to the daily application of AI-based systems. Likewise, 71.6% believed that excessive use of these platforms could negatively impact the development of analytical judgment and the ability to conduct independent analysis.

Regarding ethical issues, 74.2% of students expressed that academic institutions should implement well-defined regulations to control the academic use of AI. Similarly, 69.1% expressed concern about the possibility of errors or inaccuracies in the data produced by these digital platforms.

Regarding student expectations, 83.3% of respondents believed that AI will have a significant impact on the future of nursing practice. Furthermore, 80.8% expressed interest in receiving more training on the ethical, responsible, and clinical use of AI-based tools.

Ultimately, the social media images analyzed revealed an ambiguous view of artificial intelligence. On one hand, students associated it with progress, speed, updates, and assistance in their studies; however, representations also emerged related to excessive reliance on technological systems, ethical risks, and the potential erosion of traditional analytical skills. These perspectives demonstrate that students see artificial intelligence both as an opportunity for educational transformation and as a challenge to their professional nursing preparation.

DISCUSSION

The findings from this research indicate that students at the Autonomous University of Guerrero generally express a favorable disposition toward the use of AI in nursing. The internal consistency of the questionnaire was calculated using Cronbach's alpha statistic, yielding a result of 0.87, which is considered adequate, according to George and Mallery (2019). Most participants stated that these tools make learning easier, improve access to academic content, and aid in understanding complex topics related to the clinical field.

The findings of these investigations coincide with the observations of Buchanan *et al.* (2021), who point out that artificial intelligence has the potential to profoundly reconfigure nursing education by offering training pathways adapted to each student and the use of highly sophisticated clinical simulations.

For their part, the participants showed a favorable outlook regarding the impact that AI will have on their future professional practice. This attitude could be explained by the progressive digitalization of the healthcare sector and the pressing need for future professionals to master specific technological skills. Along these lines, Shang (2021) argues that the adoption of AI-based systems requires the development of new skills related to digital competence, data interpretation, and sound clinical judgment.

However, despite the benefits mentioned, respondents did not hide their unease about the risk of excessive reliance on automated procedures and the potential weakening of critical thinking skills resulting from intensive use of these platforms. These concerns echo the warnings of Cotton *et al.* (2024), who caution that overexposure to generative AI systems may promote academic habits lacking analytical depth and compromise students' intellectual autonomy.

The doubts expressed by students regarding the veracity of AI-generated content highlight the need to strengthen skills related to the rigorous evaluation of academic sources and the verification of information in digital environments. From this perspective, Porayska *et al.* (2023) emphasize that one of the central challenges posed by the integration of AI in education is promoting the ethical and prudent use of these tools within pedagogical practices.

Regarding the social representations that have been identified, it was noted that students form ambivalent meanings about artificial intelligence. On the one hand, they link it to innovation, modernization, and efficiency in the academic sphere; on the other hand, they also associate it with ethical dilemmas, dependence on technology, and the potential deterioration of traditional cognitive skills. According to Moscovici (1961), these social representations are created from shared experiences, discourses about technology, and social dynamics that influence how people understand emerging phenomena in their daily lives.

Among the most relevant findings is the widespread perception of the desirability of incorporating specialized training in artificial intelligence into the Nursing curriculum. A considerable proportion of respondents expressed interest in receiving training that addresses both the academic and ethical dimensions, as well as the practical aspects related to the use of AI-based tools. This demand is consistent with Vera's (2024) assertion that students positively value institutional support and pedagogical strategies that appropriately address the use of AI in higher education.

Furthermore, the data collected shows that artificial intelligence is reshaping how nursing students assimilate content, locate bibliographic references, and envision their professional future. Consequently, universities are challenged to design educational programs that integrate digital technologies without replacing essential skills such as clinical judgment, patient care reasoning, and critical evaluation of information.

It should be noted that this research has certain methodological limitations, including the use of non-probability sampling and the exclusive participation of students from a single institution, factors that limit the generalizability of the findings. Therefore, further studies with larger samples and mixed-methods designs are recommended to explore in greater depth the experiences, assessments, and collective understandings of AI among future healthcare professionals.

In general terms, the results obtained reflect that most participants maintain a favorable attitude towards the insertion of AI systems in the academic context, recognizing their contribution to streamlining study, expanding access to specialized literature and facilitating the assimilation of highly complex issues related to their nursing preparation.

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Conflict of interest

Authors declare no conflict of interests.

Authors' contribution

The authors participated in the design and writing of the article, in the search and analysis of the information contained in the consulted bibliography.