PROTOCOL

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APPLICABILITY OF ARTIFICIAL INTELLIGENCE IN NURSING LEADERSHIP AND MANAGEMENT: A SCOPING REVIEW PROTOCOL

APLICABILIDADE DA INTELIGÊNCIA ARTIFICIAL NA LIDERANÇA E GESTÃO EM ENFERMAGEM: PROTOCOLO DE REVISÃO DE ESCOPO

APLICABILIDAD DE LA INTELIGENCIA ARTIFICIAL EN EL LIDERAZGO Y LA GESTIÓN DE ENFERMERÍA: PROTOCOLO DE REVISIÓN DE ALCANCE

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ABSTRACT
Introduction: Artificial Intelligence has emerged as a strategic tool for innovation in nursing, particularly in leadership and care management. Its ability to process large volumes of data and support evidence-based decision-making enhances nurse leaders' capacity to optimize resources, improve care quality, and strengthen patient safety. **Objective:** To map the available evidence on the benefits, challenges, and recommendations related to the use of AI by nurses in management and leadership positions within hospital settings. **Method:** This is a scoping review protocol, registered in the *Open Science Framework* (DOI: 10.17605/OSF.IO/J6Q5V), developed according to the JBI methodology and reported following the PRISMA-ScR extension. Empirical studies of various designs, qualitative research, systematic reviews, and grey literature addressing the application of AI in nursing leadership and management will be included. Searches will be conducted in MEDLINE, CINAHL, Embase, Scopus, and Web of Science, as well as additional sources. No language or time restrictions will be applied. Two independent reviewers will perform screening, data extraction, and analysis, with results presented narratively and in tabular form. **Expected results:** The review aims to identify evidence on the benefits, challenges, barriers, and practical recommendations for using Artificial Intelligence in managerial and decision-making processes. **Conclusion:** The findings are expected to support the ethical, safe, and effective incorporation of AI in hospital nursing management, strengthening professional training, evidence-based decision-making, and continuous improvement in care quality and patient safety.
Keywords: Artificial Intelligence; Decision Making; Nursing Leadership; Health Services Administration; Scoping Review.

RESUMO
Introdução: A Inteligência Artificial tem se consolidado como uma ferramenta estratégica para a inovação na enfermagem, especialmente nas áreas de liderança e gestão do cuidado. Sua capacidade de processar grandes volumes de dados e apoiar decisões baseadas em evidências amplia o potencial dos enfermeiros-líderes para otimizar recursos, promover a qualidade assistencial e fortalecer a segurança do paciente. **Objetivo:** Mapear as evidências disponíveis sobre os benefícios, desafios e recomendações relacionadas ao uso da IA por enfermeiros em posições de gestão e liderança no contexto hospitalar. **Método:** Trata-se de um protocolo de revisão de escopo, registrado no *Open Science Framework* (DOI: 10.17605/OSF.IO/J6Q5V), elaborado conforme a metodologia do JBI e reportado segundo a extensão PRISMA-ScR. Serão incluídos estudos empíricos de diferentes delineamentos, pesquisas qualitativas, revisões sistemáticas e literatura cinzenta que abordem a aplicação da IA na liderança e gestão em enfermagem hospitalar. As buscas serão realizadas nas bases MEDLINE, CINAHL, Embase, Scopus e Web of Science, além de fontes adicionais. Não haverá restrição de idioma ou período. Dois revisores independentes realizarão a triagem, extração e análise dos dados, com apresentação narrativa e tabular dos resultados. **Resultados esperados:** Pretende-se identificar evidências sobre benefícios, desafios, barreiras e recomendações práticas para o uso da Inteligência Artificial em processos decisórios e de apoio gerencial. **Conclusão:** Espera-se que esta revisão contribua para a incorporação ética, segura e efetiva da IA na gestão em enfermagem hospitalar, fortalecendo a formação profissional, a tomada de decisão baseada em evidências e a melhoria contínua da qualidade e segurança do cuidado.
Palavras-chave: Inteligência Artificial; Tomada de Decisão; Liderança em Enfermagem; Administração de Serviços de Saúde; Revisão de Escopo.

RESUMEN
Introducción: La Inteligencia Artificial se ha consolidado como una herramienta estratégica para la innovación en enfermería, especialmente en las áreas de liderazgo y gestión del cuidado. Su capacidad para procesar grandes volúmenes de datos y apoyar decisiones basadas en evidencias amplía el potencial de los enfermeros líderes para optimizar recursos, mejorar la calidad asistencial y fortalecer la seguridad del paciente. **Objetivo:** Mapear las evidencias disponibles sobre los beneficios, desafíos y recomendaciones relacionadas con el uso de la IA por parte de enfermeros en cargos de gestión y liderazgo en el contexto hospitalario. **Método:** Se trata de un protocolo de revisión de alcance (*scoping review*), registrado en el *Open Science Framework* (DOI: 10.17605/OSF.IO/J6Q5V), elaborado según la metodología del JBI y reportado conforme a la extensión PRISMA-ScR. Se incluirán estudios empíricos de diferentes diseños, investigaciones cualitativas, revisiones sistemáticas y literatura gris que aborden la aplicación de la IA en el liderazgo y la gestión en enfermería hospitalaria. Las búsquedas se realizarán en las bases MEDLINE, CINAHL, Embase, Scopus y Web of Science, además de fuentes adicionales, sin restricción de idioma o periodo. Dos revisores independientes llevarán a cabo la selección, extracción y análisis de los datos, presentando los resultados de forma narrativa y tabular. **Resultados esperados:** Se espera identificar evidencias sobre beneficios, desafíos, barreras y recomendaciones prácticas para el uso de la Inteligencia Artificial en procesos decisorios y de apoyo gerencial. **Conclusión:** Esta revisión busca aportar fundamentos para la incorporación ética, segura y efectiva de la IA en la gestión de enfermería hospitalaria, fortaleciendo la formación profesional, la toma de decisiones basada en evidencias y la mejora continua de la calidad y seguridad del cuidado.
Palabras clave: Inteligencia Artificial; Toma de Decisiones; Liderazgo em Enfermería; Administración de los servicios de Salud; Revisión de Alcance.

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INTRODUCTION

Artificial Intelligence (AI) is a multidisciplinary field aimed at the development of systems capable of executing tasks that traditionally require human intelligence, such as rational thinking, decision-making, problem resolution, and learning. Its approaches range from those that seek to replicate human cognitive processes and those that prioritize rational performance, based on the capacity to act effectively from the effective analysis of large data volumes available[1,2].

With the rising digitalization of health, AI has been progressively incorporated into clinical, administrative, and managerial practices. In the nursing field, this integration is designed as a strategic opportunity for transformation, particularly in the leadership and care management areas[3].

Leadership in nursing is a fundamental and complex competence, which involves the mobilization of people and resources to provide excellent assistance and the best clinical outcomes[4]. In this context, AI emerges as a promising ally of nursing leaders by enabling work organization, favoring evidence-based decisions, and boosting continuous improvements in the quality and safety of care[5].

Recent studies suggest that adopting AI technologies in healthcare systems may generate significant benefits. However, its implementation requires the consideration of ethical, operational, and economic aspects. Beyond technological infrastructure, AI efficacy is conditioned to the training of professionals with competencies in digital literacy, critical thinking, and transformational leadership. In this context, nursing leaders play a key role in articulating technology and care practice, promoting innovation without losing sight of the humanization of care[5].

Considering the growing complexity of healthcare services and demand for greater care efficiency, customization, and safety, it becomes imperative to understand how AI is being used in nursing leadership. In addition to identifying consolidated advances, it is necessary to map emerging challenges and recommendations in scientific literature to support the ethical, safe, and effective adoption of AI[6].

The motivation for this scoping review stems from observing the rapid advances in artificial intelligence technologies in society and their transformative potential in the hospital context. This study will enable us to map and analyze the available evidence on the use of AI by nurses in management and leadership roles, exploring the associated benefits and challenges, and recommending approaches to care, process management, and decision-making in healthcare services.

During the verification of evidence overlap step, a previously recorded scoping review protocol was identified in the Open Science Framework (OSF) platform, titled “Contributions of Artificial Intelligence to Nursing Leadership” (DOI: 10.17605/OSF.IO/PFR5T). However, until the date of our last search, no scientific publication derived from that protocol was found in indexed

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journals. Furthermore, the referred record presents a conceptually broader approach, with no explicit delimitation of the hospital context or the leadership roles performed by nurses. Unlike that proposition, this review explicitly delimits the hospital context and the use of artificial intelligence by nurses in leadership and management roles, intending to identify practical applications, benefits, challenges, and implications to decision-making in the management of care.

An article published in the Journal of Nursing Management (Volume 2025, Article ID 2797535, 6 pages. DOI: https://doi.org/10.1155/jonm/2797535) was also identified, whose objective is in line with the purpose of this review. The continuity of the present study is justified, as the aforementioned study presented limitations regarding the analyzed period (initiated in 2013) and language, restricted to English and Persian, in addition to the adopted methodology not following the same framework proposed in this review. It is further worth mentioning that the protocol for that article was not located on the OSF or PROSPERO platforms, and the authors neither mentioned any formal record of the study[7].

Therefore, considering the differences in thematic scope, context delimitation, eligibility criteria, methodological framework, and record transparency, the present review proposes a more specific mapping that is more methodologically aligned with the contemporary evidence synthesis guidelines. Chart 1 presents a structured comparison between the previously identified studies and the present protocol, showing their main distinctions.

Chart 1 – Comparison between previously identified studies and the present protocol. Rio de Janeiro, RJ, Brazil, 2026.

Aspect	OSF Protocol (DOI: PFR5T)	Journal of Nursing Management (2025) article	Present protocol
Type of study	Scoping review protocol	Published review	Scoping review protocol
Previous record	Registered on OSF	No protocol record identified	Previously recorded
Thematic scope	AI contributions to leadership in nursing (broad approach)	Use of AI in nursing leadership	Use of AI by nurses in leadership and management positions
Context delimitation	Unspecified	Not explicitly delimited	Hospital context
Focus population	Nursing leadership (general)	Nursing leadership	Nurses in leadership and management positions
Analyzed period	Not clearly delimited	From 2013 onwards	No initial period restriction

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Included languages	Unspecified	English and Persian	Broad language strategy
Methodological framework	Not clearly specified	Distinct methodology	JBI methodology for scoping review
Main objective	Explore contributions of AI to leadership	Review applications of AI in leadership	Map evidences on the use of AI by nurse leaders in the hospital context

Source: Authors, 2026.

Thus, the objective of this scoping review is to map the evidence available on the benefits, challenges, and recommendations for the use of artificial intelligence by nurses in management and leadership positions in the hospital context of healthcare.

METHODS

This is a scoping review protocol, registered in the Open Science Framework (DOI: 10.17605/OSF.IO/J6Q5V), developed according to the JBI methodology guidelines for scoping reviews, which rules on the rigorous and systematic elaboration of this type of study[8]. The presentation of results will follow the PRISMA extension for scoping reviews (PRISMA-ScR – Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews) [9] ensuring standardization, methodological clarity, and transparency of the findings.

The review question, designed from the PCC acronym, is: What is the evidence available on the benefits, challenges, and recommendations for the use of artificial intelligence by nurses in management and leadership positions in the hospital context of healthcare?

Regarding the eligibility criteria, the design of this review provides that, regarding participants (P), it will include studies that address nurses in leadership positions or who perform management roles in nursing services. In concept (C), there will be studies exploring the benefits, challenges, and recommendations related to the use of artificial intelligence-based technologies applied to leadership and nursing management, including clinical or management decision support systems, predictive algorithms, administrative automation tools, and *big data*-based resources. As to context (C), it will consider studies conducted in public, private, or philanthropic hospital environments, of any size and geographical location, targeted at healthcare. The scope will exclude studies conducted in long-term care facilities for the elderly, since these settings present particular characteristics of chronic and home care, unlike the hospital context, which could compromise the comparability of results that are the focus of this review.

The review will further include randomized clinical trials, non-randomized

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clinical trials, experimental before and after studies, observational studies (prospective and retrospective cohort, case-control, and analytical cross-sectional studies), as well as descriptive studies (case series, case reports, and descriptive cross-sectional studies). It will also include qualitative studies (such as phenomenology, grounded theory, ethnography, qualitative description, action research, and feminist research), systematic reviews that meet the inclusion criteria, and opinion documents or texts by specialists.

The search strategy was elaborated initially considering the MEDLINE via PubMed database, using combinations of controlled descriptors (MeSH), free terms, and Boolean operators, involving the domains “nursing”, “leadership”, “management”, and “artificial intelligence”. The initial search was refined from the analysis of the most frequent terms in the titles and abstracts of the identified studies. Later, the strategy was adapted to other bases, including CINAHL, Scopus, Embase, and Web of Science. Gray literature sources will also be consulted, as well as reference lists from the included studies. No language or date restrictions will be applied.

The following electronic databases will be consulted, as described in Chart 2: MEDLINE via PubMed, Scopus (Elsevier), LILACS, BDENF/BVS, and Web of Science (Clarivate). Furthermore, a search for gray literature in bases such as Google Scholar and ProQuest Dissertations & Theses will be conducted. The reference lists from the studies included will also be examined to identify additional sources. The most recent search will be updated until the last study selection step.

Chart 2 – Search Strategies. Rio de Janeiro, RJ, Brazil, 2026.

Databases/ Gray Literature	**Search strategy**
PUBMED	("nursing"[MeSH Terms] OR nurs*[Text Word] OR "Nursing Care"[MeSH Terms] OR "Nursing Care"[Title/Abstract] OR nursing[Title/Abstract]) AND ("leadership"[MeSH Terms] OR Leadership[Title/Abstract] OR leader[Title/Abstract] OR "Personnel Management"[MeSH Terms] OR "Health Management"[Title/Abstract] OR "Nursing Management*"[Text Word] OR "nurse administrators"[MeSH Terms] OR Nurse Administrators[Text Word] OR "Nurse Administrator"[Text Word] OR "Nurse Executives*"[Text Word] OR "Nurse Executive"[Text Word] OR "Nurse Managers*"[Text Word] OR "Nurse Manager"[Text Word] OR "nurse leader*"[Text Word] OR "Decision Making"[MeSH Terms] OR "Decision Making"[Title/Abstract] OR "decision making, organizational"[MeSH Terms] OR "Organizational Decision Making"[Text Word] OR "Decision"[Title/Abstract]) AND ("artificial intelligence"[MeSH Terms] OR "Artificial intelligence"[Text Word] OR "AI"[Title/Abstract] OR "Artificial Intelligence"[Title/Abstract] OR "Machine Intelligence"[Title/Abstract] OR "Computational Intelligence"[Title/Abstract] OR "Technology"[MeSH Terms] OR "software"[MeSH Terms]) AND ("Hospitals"[MeSH Terms] OR Hospitals*[Text word] OR "Delivery of Health Care"[MeSH Terms])

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SCOPUS	TITLE-ABS(("nursing" OR nurs* OR "Nursing Care" OR "Nursing Care") AND (Leadership OR Leader OR "Personnel Management" OR "Health Management" OR "Nursing Management*" OR Nurse Administrators OR "Nurse Administrator" OR "Nurse Executives*" OR "Nurse Executive" OR "Nurse Managers*" OR "Nurse Manager" OR "nurse leader*" OR "Decision Making" OR "Decision Making" OR "Organizational Decision Making" OR "Decision") AND ("artificial intelligence" OR "AI" OR "Machine Intelligence" OR "Computational Intelligence" OR "Technology" OR "software") AND ("Hospitals" OR Hospitals* OR "Delivery of Health Care"))
LILACS	(mh:("enfermagem" OR "cuidados de enfermagem" OR "enfermeiras e enfermeiros" OR "enfermeiros") OR ti:(enfermagem OR "nursing" OR "Nursing Care" OR "enfermeiras e enfermeiros" OR enfermeiro*)) AND (mh:("liderança" OR "Gestão de Recursos Humanos" OR "Enfermeiros Administradores" OR "Tomada de Decisões" OR "Tomada de Decisões Gerenciais") OR ti:(liderança OR leadership OR leader OR líder OR "Gestão de Recursos Humanos" OR "Administração de Pessoal" OR "Personnel Management" OR "Health Management" OR "Administração de Pessoal em Saúde" OR "Administração de Recursos Humanos" OR "Administração de Recursos Humanos em Saúde" OR "Administração dos Recursos Humanos em Saúde" OR "Gestão de Pessoal" OR "Gestão de Pessoal em Saúde" OR "Gestão de Pessoas" OR "Gestão de Pessoas na Área de Saúde" OR "Nursing Management*" OR "Enfermeiros Administradores" OR "nurse administrators" OR "Nurse Administrators" OR "Nurse Administrator" OR "Nurse Executive*" OR "Nurse Executive" OR "Nurse Managers*" OR "Nurse Manager" OR "nurse leader*" OR "Administradores Enfermeiros" OR "Enfermeiras Administradoras" OR "Enfermeiros Executivos" OR "Enfermeiros Gerentes" OR "Executivos Enfermeiros" OR "Gerentes Enfermeiros" OR "tomada de decisão" OR "Decision Making" OR decisão OR decisões OR "Tomada de Decisão" OR "Tomada de Decisões Gerenciais" OR "Organizational Decision Making" OR "Decision" OR "Decisão Administrativa" OR "Decisão Gerencial" OR "Decisões Administrativas" OR "Decisões Gerenciais") OR ab:(liderança OR leadership OR leader OR líder OR "Gestão de Recursos Humanos" OR "Administração de Pessoal" OR "Personnel Management" OR "Health Management" OR "Administração de Pessoal em Saúde" OR "Administração de Recursos Humanos" OR "Administração de Recursos Humanos em Saúde" OR "Administração dos Recursos Humanos em Saúde" OR "Gestão de Pessoal" OR "Gestão de Pessoal em Saúde" OR "Gestão de Pessoas" OR "Gestão de Pessoas na Área de Saúde" OR "Nursing Management*" OR "Enfermeiros Administradores" OR "nurse administrators" OR "Nurse Administrators" OR "Nurse Administrator" OR "Nurse Executive*" OR "Nurse Executive" OR "Nurse Managers*" OR "Nurse Manager" OR "nurse leader*" OR "Administradores Enfermeiros" OR "Enfermeiras Administradoras" OR "Enfermeiros Executivos" OR "Enfermeiros Gerentes" OR "Executivos Enfermeiros" OR "Gerentes Enfermeiros" OR "tomada de decisão" OR "Decision Making" OR decisão OR decisões OR "Tomada de Decisão" OR "Tomada de Decisões Gerenciais" OR "Organizational Decision Making" OR "Decision" OR "Decisão Administrativa" OR "Decisão Gerencial" OR "Decisões Administrativas" OR "Decisões Gerenciais")) AND (mh:("Inteligência artificial" OR "tecnologia" OR "software") OR "artificial intelligence" OR "Inteligência Artificial" OR "Inteligência de Máquina" OR "Machine Intelligence" OR "Computational Intelligence" OR "Technology" OR "tecnologia" OR "software") AND (mh:("hospitais" OR "Atenção à saúde") OR hospital OR hospitais OR "Hospitals"or "Atenção à saúde" OR "Delivery of Health Care") AND db:("LILACS") AND instance:"regional"

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BDENF/BVS	mh:("enfermagem" OR "cuidados de enfermagem" OR "enfermeiras e enfermeiros" OR "enfermeiros") OR ti:(enfermagem OR "nursing" OR "Nursing Care" OR "enfermeiras e enfermeiros" OR enfermeiro*)) AND (mh:("liderança" OR "Gestão de Recursos Humanos" OR "Enfermeiros Administradores" OR "Tomada de Decisões" OR "Tomada de Decisões Gerenciais") OR ti:(liderança OR leadership OR leader OR líder OR "Gestão de Recursos Humanos" OR "Administração de Pessoal" OR "Personnel Management" OR "Health Management" OR "Administração de Pessoal em Saúde" OR "Administração de Recursos Humanos" OR "Administração de Recursos Humanos em Saúde" OR "Administração dos Recursos Humanos em Saúde" OR "Gestão de Pessoal" OR "Gestão de Pessoal em Saúde" OR "Gestão de Pessoas" OR "Gestão de Pessoas na Área de Saúde" OR "Nursing Management*" OR "Enfermeiros Administradores" OR "nurse administrators" OR "Nurse Administrators" OR "Nurse Administrator" OR "Nurse Executive*" OR "Nurse Executive" OR "Nurse Managers*" OR "Nurse Manager" OR "nurse leader*" OR "Administradores Enfermeiros" OR "Enfermeiras Administradoras" OR "Enfermeiros Executivos" OR "Enfermeiros Gerentes" OR "Executivos Enfermeiros" OR "Gerentes Enfermeiros" OR "tomada de decisão" OR "Decision Making" OR decisão OR decisões OR "Tomada de Decisão" OR "Tomada de Decisões Gerenciais" OR "Organizational Decision Making" OR "Decision" OR "Decisão Administrativa" OR "Decisão Gerencial" OR "Decisões Administrativas" OR "Decisões Gerenciais") OR ab:(liderança OR leadership OR leader OR líder OR "Gestão de Recursos Humanos" OR "Administração de Pessoal" OR "Personnel Management" OR "Health Management" OR "Administração de Pessoal em Saúde" OR "Administração de Recursos Humanos" OR "Administração de Recursos Humanos em Saúde" OR "Administração dos Recursos Humanos em Saúde" OR "Gestão de Pessoal" OR "Gestão de Pessoal em Saúde" OR "Gestão de Pessoas" OR "Gestão de Pessoas na Área de Saúde" OR "Nursing Management*" OR "Enfermeiros Administradores" OR "nurse administrators" OR "Nurse Administrators" OR "Nurse Administrator" OR "Nurse Executive*" OR "Nurse Executive" OR "Nurse Managers*" OR "Nurse Manager" OR "nurse leader*" OR "Administradores Enfermeiros" OR "Enfermeiras Administradoras" OR "Enfermeiros Executivos" OR "Enfermeiros Gerentes" OR "Executivos Enfermeiros" OR "Gerentes Enfermeiros" OR "tomada de decisão" OR "Decision Making" OR decisão OR decisões OR "Tomada de Decisão" OR "Tomada de Decisões Gerenciais" OR "Organizational Decision Making" OR "Decision" OR "Decisão Administrativa" OR "Decisão Gerencial" OR "Decisões Administrativas" OR "Decisões Gerenciais")) AND (mh:("Inteligência artificial" OR "tecnologia" OR "software") OR "artificial intelligence" OR "Inteligência Artificial" OR "Inteligência de Máquina" OR "Machine Intelligence" OR "Computational Intelligence" OR "Technology" OR "tecnologia" OR "software") AND (mh:("hospitais" OR "Atenção à saúde") OR hospital OR hospitais OR "Hospitals"or "Atenção à saúde" OR "Delivery of Health Care") AND db:("BDENF") AND instance:"regional"

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Web of Science	TS=("nursing" OR nurs* OR "Nursing Care" OR "Nursing Care") AND (TI=(Leadership OR Leader OR "Personnel Management" OR "Health Management" OR "Nursing Management*" OR Nurse Administrators OR "Nurse Administrator" OR "Nurse Executives*" OR "Nurse Executive" OR "Nurse Managers*" OR "Nurse Manager" OR "nurse leader*" OR "Decision Making" OR "Decision Making" OR "Organizational Decision Making" OR "Decision") OR AB=(Leadership OR Leader OR "Personnel Management" OR "Health Management" OR "Nursing Management*" OR Nurse Administrators OR "Nurse Administrator" OR "Nurse Executives*" OR "Nurse Executive" OR "Nurse Managers*" OR "Nurse Manager" OR "nurse leader*" OR "Decision Making" OR "Decision Making" OR "Organizational Decision Making" OR "Decision")) AND (TI=("artificial intelligence" OR "AI" OR "Machine Intelligence" OR "Computational Intelligence" OR "Technology" OR "software") OR AB=("artificial intelligence" OR "AI" OR "Machine Intelligence" OR "Computational Intelligence" OR "Technology" OR "software")) AND TS=("Hospitals" OR Hospitals* OR " Delivery of Health Care")
Google Acadêmico	(enfermagem OR enfermeiros OR "cuidados de enfermagem" OR "nursing" OR nurses OR "Nursing Care") AND ("liderança" OR "Gestão de Recursos Humanos" OR "Enfermeiros Administradores" OR "Tomada de Decisões" OR "Tomada de Decisões Gerenciais" OR Leadership OR Leader OR "Personnel Management" OR "Health Management" OR "Nursing Managements" OR "Nurse Administrators" OR "Nurse Administrator" OR "Nurse Executives" OR "Nurse Manager" OR "nurse leader" OR "Decision Making" OR "Organizational Decision Making") AND ("inteligência artificial" OR "artificial intelligence") AND (Hospitals OR Hospitais OR "Delivery of Health Care" OR "Atenção à saúde")
Proquest	(nurs* OR "nursing care" OR nursing) AND (leadership OR leader* OR "personnel management" OR "health management" OR "nursing management" OR "nurse administrator*" OR "nurse executive*" OR "nurse manager*" OR "nurse leader*" OR "decision making" OR "organizational decision making" OR decision*) AND ("artificial intelligence" OR AI OR "machine intelligence" OR "computational intelligence" OR technolog* OR software) AND (hospital* OR "health care delivery" OR "delivery of health care")

Source: Authors, 2026.

For study selection, all retrieved records will be imported into EndNote reference manager for duplicate removal. Next, the records will be exported to the Rayyan QCRI platform, a widely used tool in scoping and systematic reviews. Two reviewers will proceed to screen titles and abstracts independently, with mutual concealment of decisions, assessing the studies based on the previously defined inclusion criteria. A pilot test will be conducted with 25 studies to ensure consistency in the screening process. In cases of disagreement between reviewers, these will be resolved by consensus; if the impasse persists, a third reviewer will be consulted for a final decision. The next phase will involve a full reading of the potentially eligible studies. Disagreements between reviewers will be resolved in consensus, and a third reviewer will be consulted in case of impasse. The selection process results will be graphically presented by a PRISMA-ScR (Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews) flowchart. Studies excluded

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after full reading will have their respective reasons for exclusion listed in a separate table.

Data extraction will be conducted by two reviewers independently and synthesized in an electronic form using Microsoft Excel, based on the relevant articles extracted from the databases present in Chart 3, in which topics like title, abstract, methodological design, objectives, country of origin, study design, and other research elements will be analyzed, such as concept, context, study method, intervention type, objectives, main results, and identified gaps. In cases of disagreement between reviewers, these will be resolved by consensus; if needed, a third reviewer will be consulted. When applicable, the authors of the studies may be contacted to complement or clarify absent data.

Chart 3 – Data extraction. Rio de Janeiro, RJ, Brazil, 2026.

Item	Description / Objective
Study ID	Unique code attributed to each article included for internal control.
Article Title	Full publication title, as presented in the database.
Authors / Year	Name of the main authors.
Year	Year of publication of the study.
Country / Location of the Study	The geographical location where the research was conducted.
Objective of the Study	Declaration of the main objective(s) of the article as presented by the authors.
Type of Study	Methodological design (ex: qualitative study, cohort, systematic review, case study etc.).
Participants	Description of the nurses involved in the study: role, work experience time, leadership profile etc.
Context	Type of hospital institution where the study was conducted (ex: public, private, philanthropic; care level).

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Type of AI Technology	Specification of the utilized artificial intelligence technology (ex: machine learning, predictive algorithm, chatbot, etc.).
AI Purpose	The purpose of the technology in leadership/management (ex: supporting decision, automation, screening etc.).
Main Results	Synthesis of the study findings with emphasis on the benefits, challenges, and recommendations of AI application.
AI Benefits	Benefits identified from the effective implementation or use of the technology.
AI Challenges / Barriers/risks	Obstacles identified from the effective implementation or use of the technology.
Recommendations from the Authors	Suggestions presented by the authors of the studies regarding the implementation, future use, or expansion of AI in nursing leadership.
Identified Gaps	Topics still little explored or absent in the literature highlighted by the study.
Relevant Conclusions	Final considerations of the study that may inform future decisions, policies, or studies.
Funding Sources	Information on who funded the research, when available.
Additional Notes	Relevant comments or observations made by reviewers during analysis.

Source: Authors, 2026.

The data will be analyzed through a descriptive synthesis, as recommended by the JBI Manual for Evidence Synthesis for scoping reviews. Initially, the included studies will be organized and presented in characterization tables, containing information on the authors, year, country, methodological design, participants, and institutional context.

Furthermore, the studies will be grouped according to previously defined analytical categories, including type of utilized artificial intelligence technology, purpose of AI application in nursing management or leadership (for instance, support to decision-making, automation of processes, resource prediction or allocation), and organizational leadership level (operational, tactical, or strategic).

The results will also be presented through charts and visual representations, when appropriate, to facilitate the identification of

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patterns and trends in the literature. The synthesis of the findings will highlight the benefits, challenges, ethical risks, and recommendations for the implementation of artificial intelligence in nursing leadership.

Additionally, a synthesis matrix will be constructed, crossing the type of AI Technology, leadership level involved, and organizational impacts reported in the studies, with the objective of mapping areas of evidence concentration and gaps in the literature.

The identification of research gaps will consider aspects such as the absence of empirical studies, predominance of conceptual or opinion studies, geographical concentration of evidence, and under-representation of certain hospital contexts.

FINAL CONSIDERATIONS

We hope this scoping review contributes to broadening our understanding of the use of Artificial Intelligence in decision-making processes and management support in hospital nursing, by mapping and describing the existing literature on the theme. By identifying how Artificial Intelligence has been applied in this context, including reported benefits, challenges, barriers, and recommendations described in the studies, this review will provide a broad perspective of the current state of knowledge.

Results may support nursing researchers, managers, and educators in understanding emerging trends, utilized approaches, and contexts in which these technologies have been explored, contributing to the development of educational, technological, and organizational initiatives related to nursing management.

Furthermore, literature mapping will enable us to identify knowledge gaps and priority areas for further investigation and may even support the development of primary studies and systematic reviews focused on assessing the effectiveness and impacts of using Artificial Intelligence in nursing leadership and management.

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All authors: Manuscript Review.

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Ana Clara Carmo de Jesus - Third Reviewer

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Data Availability Statement

No databases were generated in this study. The information presented is described in the body of the article.

Conflict of Interest Statement

Nothing to declare.

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