

Nurse Managers as Promoters of Health Literacy Supported by Information Systems


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Abstract

Introduction

Health literacy, a multidimensional concept essential to equity and the sustainability of healthcare systems, empowers individuals to make informed decisions and use services effectively, overcoming sociocultural and economic barriers. Nurse managers play a strategic role in its promotion by combining leadership with standardized nursing information systems. This article offers a reflective analysis of this integration, with a particular focus on advancing health literacy.

Objective

To analyze the competencies of nurse managers and their interaction with nursing information systems in promoting health literacy.

Methods

This is a theoretical reflection grounded in a narrative literature review. Recent publications and foundational works were analyzed, emphasizing the evolution of concepts, technological integration in healthcare, and nursing management practices. The analysis is structured around four thematic axes that link conceptual foundations with practical implications.

Results

Findings indicate that the relationship between health literacy and health information systems significantly affects the safety and quality of care. Nurse managers emerge as key facilitators, leveraging information systems to promote health literacy, thereby empowering both healthcare professionals and the public to manage information more effectively. Integrating these dimensions systems has proven essential for improving clinical practice, enabling more effective leadership and more data-informed decision-making.

Conclusion

This theoretical reflection highlights the role of nurse managers in promoting health literacy by integrating leadership competencies, strategic information management, and effective use of health information systems. This integrative approach positions nurse managers as catalysts for citizen empowerment, contributing to equitable, informed, and sustainable care practices. By proposing an interdisciplinary conceptual framework, the study expands the discussion of nursing management as a driver of quality and empowerment in advancing health literacy.

Keywords

Nursing; Nursing Administration Research; Health Literacy; Health Information Systems; Health Policy.

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Introduction

Although originally coined as a neologism to highlight the urgent need to improve population literacy¹, the concept of *health literacy* was only fully recognized as a foundational pillar of nursing as both a discipline and a practice in the early 21st century.^{2,3} Recognized by the World Health Organization as a cornerstone of population well-being⁴, health literacy is now a key strategy for addressing economic, social, demographic, cultural, and ethnic vulnerabilities.⁵⁻⁷

The evolution of the health literacy concept—which encompasses not only the ability to read and interpret information but also the capacity to assess and apply knowledge in practical contexts—underscores the importance of an integrated approach that includes cognitive, social, and digital dimensions.

The digital transformations of recent decades have substantially redefined how individuals engage with the health–illness process.⁸ Today’s healthcare systems recognize people as active members of care teams, assigning them a central role in their own health journeys through informed and deliberate decision-making.^{7,9,10}

In this transitional landscape, both clinical nurses and nurse managers are positioned as key agents in promoting health literacy by assessing individuals’ knowledge levels and implementing interventions to support their development.^{10,11} To make this possible, health information systems must incorporate a standardized, systematized, and universally accessible language.^{8,12,13}

The value nurse manager’s value lies in the ability to integrate leadership, education, and information management with nursing information systems, transforming these systems into strategic tools for advancing health literacy. By facilitating access to information and supporting autonomous, informed decision-making, nurse managers enhance care quality, reinforce equity, and elevate health literacy as a core element of healthcare management and innovation.

Building health literacy capacity is essential for equipping professionals with specialized competencies, developing tailored educational materials, and optimizing available resources.¹⁴⁻¹⁶ Nurse managers are responsible for fostering a supportive nursing practice environment and ensuring the availability of necessary resources to implement robust interventions. Proactive leadership, coupled with integrated and innovative strategies, plays a critical role in reinforcing equity, effectiveness, and sustainability within healthcare systems—ultimately promoting well-being and improving quality of life.⁸

However, socioeconomic disparities and communication barriers continue to hinder the effectiveness of health literacy interventions, particularly in settings with limited access to high-quality health information. Moreover, although the benefits of health literacy are widely acknowledged, there is still a scarcity of research examining how health information systems intersect with nurse managers’ competencies.¹⁷

The innovative contribution of this study lies in articulating the conceptual evolution of health literacy, the advancement of standardized health information systems, and the managerial competencies of nurse leaders. By presenting an integrated perspective that remains underexplored in the scientific literature, this work expands the current discourse on nursing management as a catalyst for quality improvement and empowerment in promoting health literacy.

Methods

This study is guided by the following research question: To what extent do nurse managers’ competencies and the use of health information systems enhance person-centered health literacy?

This is a theoretical reflection based on a narrative literature review. The analysis primarily draws on studies published within the past five years, along with foundational references that inform the historical and theoretical development of the core concepts under examination. This combination allowed for the identification of studies that examined the relationship between the integration of health technologies and the improvement of health literacy among healthcare users, as well as innovative practices in nursing service management.

This analysis aims to explore the challenges and opportunities currently faced by nurse managers within dynamic healthcare systems and to examine their contribution to advancing health literacy.

To support a comprehensive exploration of the research question, the discussion is structured into four sections. The first defines and contextualizes health literacy, highlighting its progression and impact. The second explores the role of health information systems, focusing on terminology, electronic platforms, and interoperability. The third addresses the competencies related to nursing management and regulation. Finally, the fourth section presents a critical and reflective discussion of the main findings grounded in the study’s conceptual foundations.

Results

Health literacy

At the outset of this section, it is essential to examine the key concepts and variables that support this integrative perspective, to outline a comprehensive strategy to optimize care delivery and health outcomes.¹⁸ Health literacy functions as both a quality and effectiveness indicator and stands out as a critical determinant of population well-being by equipping individuals with the ability to access, assess, and use health information.^{2,19-24}

Historically, although the term was first introduced by the Organisation for Economic Co-operation and Development (OECD)²⁵, it was in 1974 that Simonds brought together the notions of “education” and “health” to highlight the role of health education in school-based settings.²⁶ The concept has since evolved from a set of

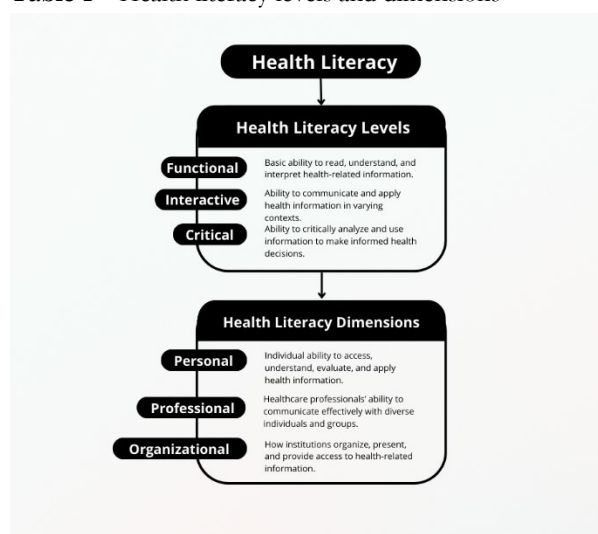
basic functional skills to a robust set of empowerment tools.

Health literacy can be conceptualized as a dynamic interplay between knowledge and prior health-related experiences. It is closely associated with a wide range of socioeconomic and demographic factors, including age, gender, ethnicity, educational attainment, income, occupation, literacy skills, language proficiency, and self-perceived health status. These variables contribute to both intra- and intergroup disparities, significantly influencing one's capacity to develop and apply health literacy and to access high-quality health information and services. This process involves not only knowledge acquisition but also the development of essential personal skills that support the adoption of healthy behaviors and lifestyle changes.^{21, 27–32}

In addition, several authors argue that health literacy must be understood as the capacity to influence, engage, educate, and support not only individuals but also organizations, communities, healthcare professionals, media, and policymakers. This holistic perspective seeks to strengthen the competencies needed for people to navigate the healthcare system effectively, overcome barriers, and promote a culture of prevention.^{33–38}

Three levels of health literacy are commonly recognized—functional, interactive, and critical—while a European definition introduces an integrated model that accounts for both individual competencies and contextual and social factors shaping the understanding of health information.^{2,39–41} Within this framework, health literacy is further defined by three complementary dimensions: personal, referring to an individual's ability to access, understand, assess, and apply health information; organizational, focused on how institutions organize and disseminate information; and professional, which relates to the capacity of healthcare professionals to communicate effectively with diverse populations.^{42–45} Table 1 summarizes and categorizes the interaction between these levels and dimensions of health literacy.

Table 1 – Health literacy levels and dimensions



Building on this framework, the 2019 European Health Literacy Survey revealed that approximately 30% of

respondents reported inadequate or problematic levels of health literacy.^{46,47} The results showed that participants found it easier to acquire information related to health promotion than to engage in disease prevention or navigate healthcare services.⁴⁶ Notably, the highest levels of health literacy were recorded in Central and Northern European countries⁶, in contrast to the national context, where more vulnerable groups—including individuals with low educational attainment, those over 65 years old, and immigrants with limited perceptions of healthcare quality—exhibited lower levels of health literacy.^{40,48–55} Meanwhile, Portugal's Directorate-General of Health, through its 2019–2021 Health Literacy Action Plan, identified the country as having a relatively high proportion of individuals with “sufficient” health literacy.^{56,57}

Health literacy requires a solid theoretical foundation to explain the many factors that influence it. Conceptual models provide this foundation, guiding both analysis and intervention from an integrated, holistic perspective [58].

In the field of communication, the ACP Model—Assertiveness, Clarity, and Positivity—stands out as a practical strategy for healthcare professionals to effectively promote health literacy. This model consists of three core components: assertiveness, which emphasizes balance in the therapeutic relationship; clarity, which ensures that information is understandable regardless of how it is presented; and positivity, which promotes a constructive and resilient mindset that facilitates understanding of one's health status and supports the adoption of healthy behaviors.^{59–62}

However, traditional approaches focused solely on one-way information transmission have proven insufficient to foster adequate levels of health literacy. According to the Nursing Care Quality Standards established by the Portuguese Order of Nurses, professional practice must ensure care that is safe, effective, timely, and person-centered.¹² Therefore, it is essential to adopt strategies that foster dynamic therapeutic relationships grounded in active citizen engagement, shared responsibility for the care process, and continuous health education.

Within this framework, Afaf Meleis's Transition Theory serves as a key theoretical model, recognizing that transitional processes—whether related to health conditions, organizational change, or skill development—require intentional nursing interventions to facilitate individuals' adaptation and empowerment.⁶³ Engel's Biopsychosocial Model⁶⁴, which incorporates biological, psychological, and social factors in understanding health and illness, underscores the importance of health literacy as a fundamental element in informed health management. This model's principles call for a care approach that is person-centered rather than task-centered.⁶⁵

This paradigmatic shift is strongly supported by the person-centered approach, which emphasizes the promotion of communication that is clear, accessible, and tailored to individual needs.^{66–68} The evolution of care practices—from a traditional model grounded in professional authority to a holistic framework incorporating cultural, social, and

personal belief systems—has become essential to advancing health literacy.⁶⁹

McLeroy's Ecological and Social Model⁷⁰ acknowledges that health is shaped by interrelated factors across multiple levels, from the individual to the policy domain. Within this framework, health literacy should be viewed as a multidimensional process requiring not only the development of individual competencies but also the creation of supportive social, institutional, and political environments that facilitate access to information and informed decision-making in health.

Since the adoption of the Ottawa Charter, individuals have increasingly been viewed not merely as recipients but as decision-makers, managers, co-producers, evaluators, and agents of change in their own health.⁷¹ At the international level, recent public policies have reinforced this perspective. The *National Action Plan to Improve Health Literacy*⁷² and the *Health Literacy Promotion and Education Strategy*⁷³ outline educational and communication strategies that highlight the central role of education and communication in improving healthcare and strengthening health literacy. The European Commission, through the *European Health Literacy Survey (EHLS)*, has advanced integrated policies aimed at monitoring and enhancing health literacy levels while reducing disparities among Member States.¹⁹

In Portugal, the commitment to health literacy is closely tied to the evolution of public health policies, which have shifted from an assistance-based model to one that recognizes the universal right to health⁷⁴, as enshrined in the Health Framework Law.⁷⁵ Article 12 of this law highlights the need to integrate health literacy into strategic areas such as education, labor, and social and environmental welfare, involving local governments as well as public, private, and nonprofit entities. This legal framework ensures that health literacy remains a central element in all public health decision-making processes.⁷⁶ The 2019–2021 Health Literacy Action Plan⁷⁷ and the current 2023–2030 National Plan for Health Literacy and Behavioral Sciences⁷⁸ reinforce the goal of reducing inequalities and empowering the population to make informed choices. Several national initiatives promote access to health information and support healthcare professional training while encouraging healthy and inclusive lifestyles.^{56,79–81}

Aligned with international guidelines^{82,83}, the 2021–2026 National Patient Safety Plan incorporates health literacy as a strategy to enhance empowerment and active public participation in care safety.^{84–86} Portugal's decentralized administrative structure assigns local governments and intermunicipal entities a central role in promoting health literacy by managing investments, building partnerships, and mobilizing stakeholders.^{87–90}

In sum, health literacy extends beyond the simple accumulation of knowledge; it constitutes a dynamic and multifaceted process essential for advancing a more informed and healthier society. Its progression—from early health education concepts to a contemporary framework encompassing cognitive, social, critical, and digital

dimensions—underscores the importance of adopting an integrated and participatory perspective. Implementing innovative and comprehensive strategies, supported by active professional leadership—particularly from nurse managers—is key to fostering equity, effectiveness, and sustainability in healthcare systems, transforming them into spaces where well-being and quality of life are truly prioritized.⁸ Therefore, these disparities must be considered in health policy development and resource allocation to ensure equity and social justice.^{91–93}

Health Information Systems

Health literacy, as a dynamic and multidimensional process that underpins the empowerment of individuals, professionals, and communities, is put into practice through health information systems. These systems function as operational tools for fostering clear communication, active participation, and informed decision-making by organizing, protecting, and sharing clinical data and sensitive indicators—key elements that define the theoretical models and integrated policies discussed in the previous section.

In nursing management, this integration is reflected in the capacity to design personalized care strategies and optimize resource allocation, ensuring effective, high-quality, and continuous care in accordance with the Nursing Care Quality Standards.¹² The integration of these standards with health information systems has the potential to identify and overcome barriers to accessing information, promote measurable, evidence-based practices, and align care delivery with recognized quality models.⁹⁴ Using health information systems to extract data supports the development of nursing-sensitive indicators, enhancing the visibility and value of nursing practice and enabling real-time monitoring of professional activities.^{95–97}

The historical evolution of health information systems—from early electronic records to interoperable, user-centered platforms—represents a logical progression in transforming healthcare systems: bridging theory and practice, advancing excellence, and consolidating health literacy as a pillar of quality, safety, and innovation. Initially focused on financial management support, health information systems gradually incorporated clinical data through electronic health records, later evolving into personal health records and, more recently, personal health information systems.^{7,13,98} This modernization has enabled the structuring and protection of sensitive data while also promoting interoperability across different sectors of the healthcare system and driving the development of initiatives in the field of information and communication technologies. It is rooted in a foundation of collaboration and knowledge sharing.^{95,99}

Studies such as the *Portuguese Health Literacy Survey (HLiteracia em Saúde-PT)*, conducted in 2014, underscore the relevance of information sources as essential tools for improving population health literacy. These findings emphasize the critical role of information and communication technologies—particularly health information systems—in enhancing access to high-quality

information and supporting informed decision-making by citizens [37]. Integrating health information systems into health literacy promotion strategies provides a powerful tool for empowering individuals, enabling them to make informed and contextually appropriate decisions through centralized access to clinical data and health indicators.

By securing and sharing sensitive clinical data and promoting structured intersectoral interoperability, health information systems increase safety, reduce errors, and personalize treatment—strengthening health literacy and fostering person-centered, humanized care. At the same time, nurse managers, supported by these systems, plan, coordinate, and assess care quality through real-time indicators, optimizing resources and promoting excellence in care delivery.^{100–104}

In summary, health literacy—as a dynamic and multidimensional empowerment process—takes concrete form through health information systems, which put into practice transparent communication, shared decision-making, and personalized care. By integrating theory with technological innovation, a paradigm emerges in which the person receiving care—as both a care recipient and an informed citizen—transitions from a passive role to that of an active participant within a collaborative network that supports clinical excellence, equity, and the humanization of healthcare services. Figure 1 illustrates the intersection of health literacy, nurse management, and health information systems, positioning the citizen at the center as the key figure, thereby validating their role in shared health decision-making.

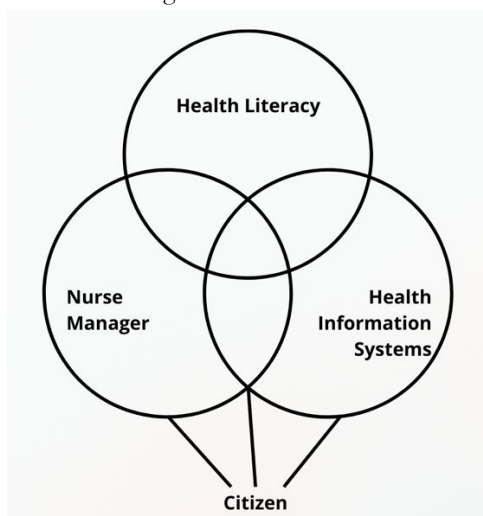


Figure 1 - Intersection of health literacy, nurse manager, and health information systems.

Nursing management and regulation

Promoting health literacy is a central responsibility of nurse managers, who—acting as educators, organizational facilitators, and managers of human and material resources—play a proactive role in shaping health policy, ensuring the continuous improvement of nursing care quality, managing services and units to better meet users' healthcare needs, and integrating health information systems to create supportive nursing practice environments

oriented toward citizen empowerment.^{3,105–107} This role requires a well-defined set of competencies, including reflective practice and in-depth knowledge of population needs. Its relevance is outlined in the Nurse Manager Competency Profile Regulation, which highlights the importance of advanced knowledge in management and organizational consulting.¹⁰⁶

Consistent with the ethical principles of autonomy, dignity, freedom, and beneficence set forth in the Nurses' Code of Ethics¹⁰⁸, the nurse manager becomes a key figure in supporting the full realization of these values by equipping nurses to promote health literacy. Accordingly, this professional is responsible for implementing continuous quality improvement processes, managing risks, and monitoring practice-sensitive indicators using internal audits and quality data to assess conditions and plan strategic interventions. These responsibilities require solid technical expertise combined with advanced communication, motivational, and innovation skills—essential for leading nursing teams in complex and high-pressure care environments.^{109–110} However, the nurse manager's mission goes beyond organizational efficiency: they serve as catalysts for promoting health literacy, embedding this dimension into their daily management practices.

By leading teams in the collection, analysis, and dissemination of reliable clinical information—and by promoting the integration of health information systems designed to support health education—nurse managers actively contribute to citizen empowerment, fostering more autonomous, informed, and responsible participation in healthcare decision-making.^{3,106,112} Strategic quality management and health literacy promotion are interdependent dimensions of their role, in which the nurse manager's leadership ensures that healthcare services not only deliver care but also educate and empower the population. This alignment strengthens sustainability, equity, and the humanization of care, positioning health literacy as a foundational pillar for continuous improvement and the positive transformation of healthcare organizations.^{107,113}

As highlighted in the literature, the nurse manager also serves as a key educator.^{3,107,109,113} In high-complexity care settings, this role demands transformational leadership grounded in a proactive, adaptable, and future-oriented approach—capable of mobilizing teams around shared goals of quality, safety, and equity in care delivery.^{113,114} This form of leadership goes beyond administrative functions: it is educational and inspirational, promoting the development of supportive nursing practice environments where citizens are empowered to make informed decisions about their health.^{14,15,107,114}

Accordingly, it is essential to ensure that the necessary resources are available to implement effective health literacy promotion interventions, recognizing that such investments not only lead to individual and population-level health gains but also help prevent professional burnout and increase organizational health literacy.^{6,14–16,115,116} Evidence indicates that systematic strategies—such

as adopting standardized interventions like a health literacy promotion checklist—can positively affect population health literacy levels by facilitating communication between professionals and citizens and promoting more participatory, person-centered care.^{47,112} In this context, Portugal's Directorate-General of Health published the *Framework for the Development of Health Literacy Promotion Projects*, which explicitly recommends using this tool as a structural element of good healthcare practices.⁴⁷

The nurse manager's leadership in integrating health information systems represents a strategic pillar in promoting both health literacy and eHealth literacy.^{117,118} By incorporating health information systems into care management, nurse managers ensure that clinical information is not only securely and interoperably recorded and shared but also structured in ways that make it understandable, accessible, and useful to citizens.^{98,99,119,120} Health information systems that feature patient portals, teleconsultations, shared care plans, and digital educational content create opportunities for individuals to develop the skills needed to locate, interpret, evaluate, and apply health information independently.^{121,122}

As a facilitator, the nurse manager is responsible for helping adapt these systems to the population's actual informational needs.¹²³ By incorporating health literacy-sensitive indicators into planning, monitoring, and evaluation processes, nurse managers ensure that health information systems function not only as management tools but also as pedagogical resources essential to citizen empowerment. Their work strengthens the connection between clinical data and meaningful knowledge for individuals, supporting shared decision-making, informed self-care practices, and active participation in personal health management.^{124,125}

Figure 2 highlights the nurse manager, equipped with the four core pillars of their role and grounded in the conceptual models that underpin their practice.

In summary, the nurse manager embodies a multidimensional profile that brings together leadership, health education, and strategic management with the transformative potential of health information systems. By integrating these systems in an accessible and educational way, they promote health literacy, equipping citizens to make more autonomous and informed decisions. This approach improves care quality, equity, and humanization, positioning health literacy as a foundational pillar of management practice and a key driver of positive transformation within healthcare organizations.^{107, 126}

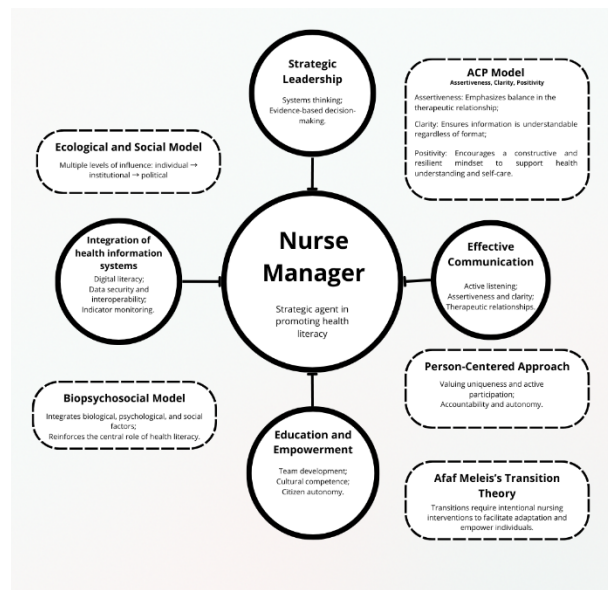


Figure 2 – Conceptual Framework.

Discussion

The findings of this theoretical reflection underscore the strategic role of nurse managers in promoting health literacy—not only by leading organizational processes but also by driving cultural transformations that frame knowledge as a tool for citizen empowerment and as a foundation for building a more equitable, efficient, and sustainable healthcare system.^{3,14,16,112,113,116,127} In this context, health information systems emerge as essential tools that support this process by enabling the collection, analysis, and dissemination of relevant data, thereby fostering knowledge sharing between professionals and citizens.^{100–104} The nurse manager serves as a catalyst in creating an organizational culture that values education and innovation—both essential to motivating and empowering teams to adopt innovative practices that advance health literacy.^{3,14,105–107}

This multidimensional profile—integrating leadership, technological competence, and health education—reinforces care quality, equity, and humanization. As a strategic nursing leader, the nurse manager emerges as a key figure in building synergies among stakeholders to promote strategic alignment that places citizens at the center of the healthcare system.^{3,105–107}

A critical analysis of the theoretical models presented in this study highlights their epistemological value in supporting the nurse manager's role in advancing health literacy. Meleis's Transition Theory positions the nurse manager as an active facilitator of adaptation and citizen empowerment. This perspective legitimizes the implementation of deliberate and systematic educational strategies designed to guide individuals through vulnerable transitions and maximize their capacity for informed, conscious participation in care.⁶³

The ACP Model provides practical guidance on how communication between healthcare professionals and citizens can be structured to strengthen therapeutic

relationships that are both effective and engaging. In this model, communication is understood as a core leadership competency in nursing—particularly relevant in management contexts, where fostering positive relational environments is a prerequisite for organizational alignment and the adoption of innovative processes.^{59–62}

McLeroy's Ecological Model, in turn, broadens the analysis to encompass multiple levels of health influence and guides nurse managers toward multilevel strategic engagement. When interpreted through this model, promoting health literacy requires coordinated efforts integrating public policy, institutional practices, and community action. Nurse managers are, therefore, called to transcend operational boundaries and position themselves as mediators between clinical practice, institutional governance, and the policy sphere.^{107,113}

From this perspective, Engel's Biopsychosocial Model introduces an essential interpretive lens. This holistic framework reinforces the need for health literacy interventions to move beyond purely informational approaches and instead adopt person-centered, culturally sensitive strategies responsive to diverse populations' real-world contexts. By embracing this complexity, nurse managers not only broaden the scope of educational practice but also adopt a critical stance toward reductionist biomedical models.^{64,65}

The person-centered approach introduces a crucial ethical and relational dimension by placing the citizen at the center of the care process. This orientation resonates with the empowerment mission underlying health literacy promotion, requiring nurse managers to ensure organizational practices that uphold autonomy, self-determination, and respect for individual uniqueness.^{66–68}

In line with these frameworks, the Nurse Manager Competency Profile highlights the concept of transformational leadership, advocating for a transformative stance that not only drives internal processes but also helps establish an organizational culture that fosters health literacy and advances innovations that add value to healthcare services.^{106,114,128}

Accordingly, health information systems must be recognized as strategic instruments that facilitate knowledge flow, promote the sharing of best practices, support evidence-based decision-making, and enhance transparent communication between professionals and citizens.^{13,95,96,98,99,119} However, adopting these systems depends on the presence of leadership capable of articulating a conceptual framework that cultivates an environment conducive to organizational learning.

The literature emphasizes that nurse managers are simultaneously visionaries, communicators, and caregivers to their teams.^{105,106,109,110,113} This combination of competencies is particularly critical to ensuring that health literacy is embedded as a core organizational value.

In light of the analysis presented, it is evident that nurse managers possess a set of core competencies that position them as central actors in advancing health literacy due to their strategic leadership, change management capabilities,

and capacity to generate value in healthcare services. Their critical engagement with the conceptual framework reflects their role's complexity and multidimensional nature, reinforcing the importance of a systems-based, person-centered, communicatively effective approach grounded in evidence-based practice.^{12,47,112}

In this context, health information systems emerge as foundational tools for enhancing knowledge collection, analysis, and dissemination, thereby supporting informed decision-making and organizational innovation. However, their effectiveness is intrinsically dependent on the presence of transformational leadership capable of implementing these systems critically and reflectively, fostering supportive nursing practice environments that promote professional autonomy and citizen empowerment.^{14,105–107} The interplay between nurse manager competencies and health information systems thus constitutes a strategic lever for institutionalizing health literacy as a central pillar of care quality, equity, and sustainability in healthcare delivery.

Conclusion

This theoretical reflection presents an innovative perspective by demonstrating that the nurse manager plays a critical role in promoting health literacy by integrating leadership competencies, care organization, and the strategic use of health information systems. The articulation between nursing management, information, and health literacy enables the individualization of care and fosters citizen empowerment, aligning clinical practice with the principles of equity and quality. In fact, the literature indicates that healthcare organizations that institutionalize health literacy strengthen citizen engagement and improve the quality of care.

This work makes an original contribution by highlighting an interdisciplinary field that remains largely underexplored: the synergy between health literacy, health information systems, and the strategic intervention of the nurse manager. Rather than addressing these domains in isolation, it proposes an integrated conceptual framework in which the nurse manager emerges as a key facilitator of informational transformation. This holistic perspective transcends the traditional boundaries of nursing research and introduces a new lens that recognizes scientific knowledge as a means of empowerment—not only for professionals but also for citizens. By emphasizing this articulation, the study contributes to advancing the state of the art and opens new pathways for empirical research to explore the framework's various dimensions.

Despite its conceptual contributions, this work presents limitations that must be acknowledged. As a primarily theoretical and reflective study, it does not rely on original empirical data, limiting its findings' immediate generalizability. This lack of empirical evidence warrants caution in interpreting the results and underscores the need for future studies to validate the proposed framework in real-world contexts.

Implementing integrated strategies that address multiple dimensions of professional practice is recommended to support the effective translation of knowledge into clinical practice and achieve measurable improvements in health outcomes. Specifically, there is a critical need to invest in the continuing education of nurse managers through structured programs that strengthen competencies in health literacy, data analysis, and health technology management. In parallel, ensuring health information systems' interoperability and standardization through mechanisms incorporating standardized ontologies and terminologies is essential. Moreover, empirical research should be encouraged to examine the interaction between nursing practice and innovative technologies in order to support effective, citizen-centered interventions and inform the formulation of innovative, equitable, and sustainable public health policies.

This analysis achieved its objective of examining nurse manager competencies and their articulation with health information systems in promoting health literacy. The nurse manager emerges as a strategic actor with a critical role in information management, care planning and monitoring, and the coordination of multidisciplinary teams. Health information systems serve as essential tools for decision support, operationalizing care processes, and reinforcing practices focused on quality and safety.

Authorship

NS: Conception and design of the study; Collection of data; Analysis and interpretation of data; Obtaining funding; Writing the manuscript; Critical revision of the manuscript; Approval of the final version of the manuscript and assumption of responsibility for it.

SM: Conception and design of the study; Collection of data; Analysis and interpretation of data; Obtaining funding; Writing the manuscript; Critical revision of the manuscript; Approval of the final version of the manuscript and assumption of responsibility for it.

AP: Study conception and design; Data collection; Data analysis and interpretation; Obtaining funding; Writing the manuscript; Critical revision of the manuscript; Approval of the final version of the manuscript and taking responsibility for it.

CP: Study conception and design; Data collection; Data analysis and interpretation; Obtaining funding; Writing the manuscript; Critical revision of the manuscript; Approval of the final version of the manuscript and assumption of responsibility for it.

RO: Study conception and design; Data collection; Data analysis and interpretation; Obtaining funding; Writing the manuscript; Critical revision of the manuscript; Approval of the final version of the manuscript and assumption of responsibility for it.

SD: Conception and design of the study; Collection of data; Analysis and interpretation of data; Obtaining funding; Writing the manuscript; Critical revision of the manuscript; Approval of the final version of the manuscript and assumption of responsibility for it.

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