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PATIENT SAFETY MANAGEMENT IN NURSING: TRENDS, CHALLENGES AND OPPORTUNITIES IN THE DEPARTMENT OF CESAR

Rikilda Isabel Rincón Jiménez[1], Paola Margarita Camargo Mejía[2], Luz Alba Hurtado Luján[3], Cielo Esther Hernández Gutiérrez[4], Najia Mohamed Farah Carrillo[5], Breidis Patricia Ariza Duque[6]

[1]Universidad Popular del Cesar rikirincon2@gmail.com, ORCID: https://orcid.org/0000-0003-4285-7718
[2]Universidad Popular del Cesarpcamargomejia@gmail.com, ORCID: https://orcid.org/0000-0001-6943-4518
[3]Universidad Popular del Cesar Correo: Luzhurtado@unicesar.edu.co, ORCID: https://orcid.org/0000-0002-8619-1594
[4]Universidad Popular del Cesar cielohernandez@unicesar.edu.co, ORCID: https://orcid.org/0000-0003-2490-7451
[5]Universidad Popular del Cesar najiafarah@unicesar.edu.co, ORCID: https://orcid.org/0000-0001-6428-8689
[6]Universidad Popular del Cesar Ariza_breidis36@outlook.com., ORCID: https://orcid.org/0009-0003-4267-138X

ABSTRACT

Cesar, with Valledupar as its main referral center, faces growing pressure on hospital services due to the high healthcare demand of a population of nearly one million inhabitants, characterized by high rurality and gaps in access to specialized services (Ministerio de Salud y Protección Social, 2024). Under these conditions, patient safety becomes a strategic priority, as limitations in infrastructure, coverage, and availability of human resources increase the risk of preventable adverse events. In this regard, this article analyzes patient safety management in nursing in the department of Cesar, identifying trends, challenges, and opportunities in a context of high rurality, service concentration, and structural and human resource gaps. The study is grounded in Donabedian's model (structure–process–outcome), patient safety culture, and clinical nursing leadership. These conceptual frameworks help explain how structural, organizational, and educational factors affect the quality

[1] Enfermera profesional, magíster en pedagogía de la Universidad Mariana en Pasto, Nariño, y especialista en cuidado crítico de la Pontificia Universidad Javeriana en Bogotá, D.C. Docente universitaria, con experiencia en la gestión en servicios de salud y la atención clínica en unidades de cuidado intensivo y neonatal. Ha participado en líneas de investigación relacionadas con la formación pedagógica en ciencias de la salud, la gestión de calidad en servicios de salud y la atención clínica basada en guías y protocolos institucionales. Pertenece al grupo de investigación CEGOSA, dentro del CVLAC y ORCID, promoviendo el desarrollo de proyectos que contribuyen a la mejora continua en la educación y gestión en salud.

[2] Enfermera profesional de la Universidad Popular del Cesar, Colombia, Magister en Ciencias de la Enfermería de la Universidad Cuauhtémoc, México. Especialista en Sistema de Calidad y Auditoría en Servicios de Salud de la Universidad Popular del Cesar. Su trayectoria profesional se centra en la evaluación y gestión de sistemas de calidad en servicios de salud, así como en la atención clínica en enfermería, actividades asistenciales, administrativas y en docencia en el ámbito de la enfermería, promoviendo prácticas centradas en el bienestar integral del paciente, la ética profesional y la humanización de la atención. Participa activamente en grupos de investigación relacionados con la calidad en la salud y la seguridad del paciente, contribuyendo a la generación de conocimientos en estos campos.

[3] Profesional en enfermería con sólidos antecedentes académicos y experiencia en el ámbito de la salud pública y atención integral en salud. Magister en Educación para el Desarrollo Sociocultural, Especialista en Sistemas de Calidad y Auditoría de Servicios de Salud, de la Universidad Popular del Cesar. Con diplomados en atención integral en salud para poblaciones con discapacidad, salud pública y detección temprana del cáncer de cuello uterino, entre otros. Docente de la Universidad Popular del Cesar, adscrita a la Facultad de Ciencias de la Salud. Su experiencia profesional se centra en la atención en salud materno-infantil, urgencias, y programas de salud pública, participando en proyectos relacionados con la gestión programática y modelos de atención en VIH/SIDA y violencia sexual. Su trayectoria también incluye cargos en instituciones como la Secretaría de Salud Departamental y hospitales locales, donde ha desarrollado competencias en promoción, prevención y atención en salud.

[4] Licenciada en Enfermería de la Universidad Popular del Cesar, Especialista en Gerencia de Servicios de Salud por la Universidad del Norte, con diplomados en formulación y gestión de proyectos, educación, pedagogía y didáctica, facturación y auditoría en los servicios de salud, entre otros, ha sido docente de la Fundación Universidad San Martín y el Instituto Técnico de la Costa. Su experiencia abarca la administración hospitalaria, la formación en salud comunitaria, y la gestión de proyectos sanitarios orientados a la mejora de la calidad del servicio y el desarrollo institucional.

[5] Enfermera profesional, Especialista en Auditoría en Salud, Seguridad y Salud en el Trabajo, y en Cuidados Intensivos Neonatales y Magister en Riesgos Laborales de la Universidad Internacional Iberoamericana (UNINI). Con estudios en pedagogía y estrategias pedagógicas del SENA, consolidando su formación en áreas educativas y de gestión en salud. Actualmente, se desempeña en roles de coordinación y docencia en entidades del sector salud, promoviendo la gestión del riesgo laboral, la seguridad del paciente y la formación en salud ocupacional.

[6] Enfermera profesional, Especialista en Auditoría en Salud, Seguridad y Salud en el Trabajo, y en Cuidados Intensivos Neonatales y Magister en Riesgos Laborales de la Universidad Internacional Iberoamericana (UNINI). Con estudios en pedagogía y estrategias pedagógicas del SENA, consolidando su formación en áreas educativas y de gestión en salud. Actualmente, se desempeña en roles de coordinación y docencia en entidades del sector salud, promoviendo la gestión del riesgo laboral, la seguridad del paciente y la formación en salud ocupacional.

and safety of care. An integrative review was conducted, drawing on academic literature, national and international regulatory documents, and institutional reports from Cesar. Inclusion criteria covered the period between 2019 and 2025, with sources in English and Spanish, and the findings were organized into three analytical dimensions: trends, challenges, and opportunities. The results show progress in the implementation of safety protocols and training programs, but persistent challenges include underreporting of adverse events, nurse workload, and limitations in training. At the same time, opportunities were identified in strengthening nursing leadership, incorporating local safety indicators, and integrating patient safety into undergraduate nursing education. The discussion contrasts these findings with international experiences, highlighting similarities in structural barriers and marked differences in reporting culture. The findings provide inputs to guide regional policies, strengthen nursing education, and consolidate safe practices in territories with inequitable conditions. This study contributes to knowledge by integrating scientific literature and contextual evidence from Cesar, showing how nursing leadership can bridge national and international policies with local realities of coverage, quality, and sustainability.

KEYWORDS: patient safety, nursing, safety culture, clinical leadership, healthcare quality

INTRODUCTION

Patient safety has established itself as a strategic axis in the global health agenda, recognized by the World Health Organization (WHO) and the Pan American Health Organization (PAHO) as an essential condition to guarantee quality of care and the right to health. The Global Action Plan for Patient Safety 2021–2030 proposes a 50% reduction in preventable healthcare-related harms, in a context where adverse events continue to be one of the main causes of avoidable morbidity and mortality (Astier-Peña et al., 2021). The scientific literature shows that failures in clinical processes, deficiencies in communication, and absence of a safety culture continue to affect health systems, especially those with structural and organizational limitations (Panattieri et al., 2019; Rocco & Garrido, 2017).

In Colombia, this challenge is articulated through the Mandatory System of Quality Assurance in Health (SOGCS), which integrates the Audit Program for Quality Improvement (PAMEC), the qualification standards and institutional security policies (Ministry of Health and Social Protection, n.d.). However, recent research shows difficulties in the homogeneous implementation of policies, low adherence to protocols, and an organizational culture that has not yet managed to consolidate reporting and learning from errors (Reyes Ramos, 2024; Zuleta González et al., 2024).

The department of Cesar clearly illustrates these tensions. With a population of close to one million inhabitants, 62% reside in rural areas, which generates inequalities in access and opportunity for care (Department of Cesar, 2024). The 2023 Health Situation Analysis documented multidimensional poverty of 22.8% and unmet basic needs of 22.82%, conditions that correlate with limitations in effective access to health services (Ministry of Health of the Department of Cesar, 2023). Added to this is the concentration of medium and high complexity services in Valledupar, which increases the pressure on a small number of institutions and clinical teams. Critical indicators such as the sustained incidence of dengue (251.7 per 100,000 inhabitants since 2022), high rates of adolescent pregnancy (82.3 per 1,000 women aged 15 to 19 years), and the persistence of inequalities in maternal and infant mortality reflect how structural gaps have a direct impact on patient safety (Ministry of Health of the Department of Cesar, 2023).

In this scenario, nursing personnel emerge as a central actor in the prevention, detection, and reporting of adverse events, as they are the operational core of care and the direct link between institutional policies and daily care (Charry & Beltrán, 2019; De Araújo Lopes et al., 2023). However, regional and national reports warn that challenges persist in adherence to protocols, systematic notification, and continuous training, which limits the potential of nursing leadership to consolidate a robust safety culture (González Leiva, 2025; Gutiérrez & Fajardo, 2023).

From the above context, the research question arises: What are the trends, challenges and opportunities in the management of patient safety in nursing in the department of Cesar, considering the territorial particularities of high rurality, concentration of services and gaps in infrastructure and human talent?

The justification for the study is based on three dimensions:

- **Health:** The persistence of structural gaps in Cesar poses high risks of adverse events, the characterization of which is key to guiding regional quality and safety policies.
- **Disciplinary:** analyzing safety management from nursing practice makes visible the role of clinical leadership in contexts with limitations, contributing to the consolidation of the discipline as the axis of safe care.
- **Academic and formative:** the integration of contextualized evidence in nursing education contributes to the training of professionals with competencies in risk management, reporting culture, and leadership in quality of care (Cardoso Rocha et al., 2021).

Consequently, this article aims to analyze the management of patient safety in nursing in the department of Cesar, identifying trends, challenges, and opportunities for the strengthening of care practice. To this end, an integrative review is developed that articulates conceptual and normative frameworks, international and national empirical evidence, and a critical analysis located in the reality of Cesar. The text is organized into four sections: review of conceptual and regulatory frameworks, presentation of empirical findings, analysis of trends and challenges in Cesar, and finally, conclusions and recommendations to consolidate nursing leadership in patient safety.

BACKGROUND TO THE PROBLEM

Patient safety has been a priority issue in public health since the report Erring is Human by the United States Institute of Medicine (2000) showed that more than 100,000 deaths per year were associated with preventable medical errors. This finding prompted international policies, such as the Joint Commission's International Patient Safety Goals and, more recently, the WHO's Global Action Plan 2021–2030, aimed at reducing preventable harm in care by 50% (Astier-Peña et al., 2021).

In Latin America, studies have identified that up to 10% of hospitalized patients experience adverse events, of which between 50% and 70% are preventable (Panattieri et al., 2019). In Colombia, the creation of the Mandatory Health Quality Assurance System (SOGCS) and the issuance of the National Patient Safety Policy (2008) marked a starting point for institutionalizing safe practices in services (Ministry of Health and Social Protection, n.d.). However, national and regional diagnoses show persistence of problems such as underreporting of adverse events, low adherence to protocols, and gaps in human talent training (Reyes Ramos, 2024; Zuleta González et al., 2024).

In the department of Cesar, the difficulties are aggravated by structural factors. The ASIS 2023 reports a multidimensional poverty of 22.8%, unmet basic needs of 22.82%, and 62% of the population in rural areas with limited access to specialized services (Ministry of Health of the Department of Cesar, 2023). These conditions generate overload in the medium and high complexity institutions of Valledupar, with direct effects on the quality and safety of care. The concentration of hospital care, added to the shortage of human talent, increases the risks of adverse events in critical procedures and in the continuity of care.

Theoretical framework and analysis approaches

The analysis of patient safety in nursing is based on various theoretical frameworks. One of the most influential is the Donabedian model (structure-process-result), which states that the quality of care depends on the availability and organization of resources (structure), the way in which interventions are developed (process) and the effects obtained on the patient's health (outcome). This approach is useful for analyzing how the gaps in infrastructure and human talent in Cesar condition care processes and, consequently, safety outcomes.

Another relevant perspective is patient safety culture**,** understood as the set of shared values, attitudes, and behaviors that prioritize harm prevention (Aranaz Andrés et al., 2020). The literature distinguishes between punitive organizational cultures, which discourage error reporting, and learning cultures, which promote reporting, systemic analysis, and continuous improvement (Rocco & Garrido, 2017). In this study, the second perspective is adopted, insofar as it allows safety to be understood as an organizational phenomenon and not just an individual one.

Likewise, clinical leadership in nursing constitutes a central conceptual framework. Evidence indicates that nursing staff, due to their continuous contact with patients, have a strategic role in the early identification of risks, the implementation of protocols, and the promotion of safe practices (Charry & Beltrán, 2019; De Araújo Lopes et al., 2023). This approach places nursing as a hinge between macro policies (WHO, Ministry of Health) and the micro reality of hospital institutions. Consequently, this article adopts an integrative perspective that combines Donabedian's model, safety culture, and nursing leadership as analytical categories, since together they allow us to understand the complexity of safety management in territories such as Cesar.

Empirical evidence and previous findings

Recent scientific production on patient safety in nursing has addressed the issue from multiple approaches. In Spain, Aranaz Andrés et al. (2020) developed an instrument to assess the perceptions and knowledge of health professionals regarding safety culture, finding significant gaps in academic training and clinical practice. In Brazil, Reis et al. (2019) identified the difficulties of nurse managers in implementing safety strategies, including work overload, scarcity of resources, and cultural resistance.

In Latin America, Cardoso Rocha et al. (2021) conducted an integrative review of patient safety teaching in nursing programs, concluding that training is still insufficient and lacks active methodologies that prepare students to manage risks. In addition, studies such as that of Céspedes Santacreu (2020) highlight the role of nursing leadership in highly complex scenarios such as operating rooms, where adherence to protocols is decisive in preventing harm.

In Colombia, recent research shows efforts to link academic training with institutional policies. Gutiérrez and Fajardo (2023) documented the implementation of evidence-based educational strategies and information technologies to strengthen the culture of safety in a public institution, making progress in the reporting of adverse events. However, Reyes Ramos (2024) warns that a gap persists between the perception of the importance of safety and its actual practice in hospitals.

At the local level, Cesar's institutional reports (Department of Cesar, 2024; Ministry of Health of the Department of Cesar, 2023) reveal deficiencies in adherence to protocols, training of human talent, and management of safety indicators. These findings coincide with the international literature in pointing out that the lack of organizational culture, work overload, and infrastructure limitations are recurrent barriers to consolidating safe environments (Reis et al., 2019; Zuleta González et al., 2024).

In summary, the review shows that, although there are advances in policies and programs, structural and cultural challenges persist in the management of patient safety. Most studies converge in highlighting the strategic role of nursing as a guarantor of safety, but also underscore the need to strengthen training, leadership, and the articulation between global policies and local realities. This framework constitutes the basis for analyzing the trends, challenges, and opportunities of safety management in Cesar.

METHODOLOGY

This article was developed under an integrative literature review design with a qualitative-descriptive approach**,** aimed at analyzing the management of patient safety in nursing in the department of Cesar. The integrative review was selected as a methodological strategy for its ability to systematically gather and synthesize empirical, theoretical, and documentary evidence, allowing a holistic view of the phenomenon studied (Whitehorse & Knafl, 2005, cited in Cardoso Rocha et al., 2021).

Sources of information and selection criteria

The search was carried out in indexed academic databases, favoring Scopus, PubMed, CINAHL and SciELO, as well as in institutional repositories and national regulatory documents (Ministry of Health and Social Protection, Resolution 3100 of 2019, PAMEC). Additionally, institutional reports from the Department of Cesar and the Departmental Health Secretariat were included, in order to contextualize the findings at the territorial level. The inclusion criteria were; publications between 2019 and 2025 in English or Spanish, studies whose object of analysis was patient safety and the role of nursing, and normative or technical documents related to quality management and health safety. Duplicate publications, opinion documents without empirical support, and institutional reports without verifiable data were excluded. The review was developed in four stages:

- Identificación de registros mediante descriptores MeSH y DeCS combinados (patient safety, nursing, safety culture, quality of care, Cesar Department).
- Selection of articles and documents by reading titles, abstracts and institutional reports.
- Extraction and categorization of information into three analytical dimensions: trends, challenges and opportunities in patient safety management.
- Critical synthesis**,** contrasting international, national and local findings to identify common patterns and particularities of Cesar.

The analysis was framed in Donabedian's conceptual frameworks (structure–process–result), patient safety culture, **and** nursing leadership**,** previously defined in the theoretical section. Regarding ethical considerations, although the study did not involve the collection of primary data with patients or professionals, the ethical principles of respect, integrity, and transparency in the use of secondary information were observed. All the documents analyzed were publicly or institutionally accessible and were cited following the APA (7th edition) referencing standards**,** guaranteeing the traceability and recognition of the authors. The dependence on secondary information, which may contain underreporting of adverse events or institutional biases, the exclusion of non-indexed gray literature that, although relevant, did not meet the established rigor criteria, and the methodological heterogeneity of the reviewed studies are recognized as limitations, which makes it difficult to directly compare results. However, these limitations do not affect the validity of the findings, since the triangulation between scientific literature, regulations, and institutional data allowed obtaining a robust and situated understanding of the phenomenon in the context of Cesar.

RESULTS AND DISCUSSIONS

The integrative analysis of academic, normative, and institutional sources allowed the findings to be organized into three main dimensions**:** trends**,** challenges**, and** opportunities in the management of patient safety in nursing in Cesar.

Trends

The international articles reviewed report the implementation of safety protocols, periodic training programs, and clinical safety rounds as effective strategies to reduce adverse events (Reis et al., 2019; Cardoso Rocha et

al., 2021). At the national level, the official documents and available studies highlight the progress in the application of SOGCS and PAMEC, although with heterogeneous adoption in the different territories (Ministry of Health and Social Protection, n.d.; Reyes Ramos, 2024). In Cesar, the reports of the Ministry of Health (2023) show efforts to strengthen the culture of safety through internal audits and training activities in institutions in Valledupar, especially in relation to healthcare-associated infections and biosafety protocols.

Table 1. Trends in patient safety

Level	Strategies/Progress
International	Implementation of safety protocols, clinical rounds, training programs (Reis et al., 2019; Cardoso Rocha et al., 2021)
National	Application of SOGCS, PAMEC and good practice guides; heterogeneous progress in the regions (Ministry of Health and Social Protection, n.d.; Reyes Ramos, 2024)
Caesar	Internal audits in institutions in Valledupar, training on healthcare-associated infections (Cesar Health Secretariat, 2023)

Source: own elaboration

Challenges

The sources reviewed coincide in pointing out a persistent underreporting of adverse events**,** attributable both to the lack of standardized reporting systems and to the fear of sanctions (Reyes Ramos, 2024). Structural inequalities are identified**:** 62% of the population of Cesar lives in rural areas with limited access to medium and high complexity services, which delays care and increases risks (Department of Cesar, 2024). Institutional reports show work overload of nursing staff, which has an impact on partial adherence to protocols and continuity of care (Buestan & Pérez, 2022; Ministry of Health of the Department of Cesar, 2023). The teaching of patient safety in nursing programs in the region remains fragmented, with traditional methodologies and little link to real clinical scenarios (Cardoso Rocha et al., 2021).

Table 2. Challenges in patient safety

Dimension	Description
Underreporting	Low reporting of adverse events; fear of sanctions (Reyes Ramos, 2024)
Access and coverage	62% rural population with limited access; concentration in Valledupar (Department of Cesar, 2024)
Work overload	Excessive workload in nursing; affects adherence to protocols (Buestan & Pérez, 2022)
Training	Fragmented safety training, little clinical practice in undergraduate (Cardoso Rocha et al., 2021)

Source: own elaboration

Opportunities

There are local continuing education initiatives in some hospital institutions, which could be expanded and systematized as part of the territorial health plan. Opportunities are identified to strengthen nursing leadership in the consolidation of safe practices, in line with what has been reported in other Latin American contexts (Charry & Beltrán, 2019; De Araújo Lopes et al., 2023). The inclusion of local patient safety indicators in the regional PAMEC is an emerging space to monitor progress and adjust strategies. Cesar's alignment with the Global Action Plan for Patient Safety 2021–2030 opens the possibility of integrating international standards with territorial realities (Astier-Peña et al., 2021).

Table 3. Opportunities in Patient Safety

Strategy	Potential
Nursing Leadership	Consolidate a culture of safety through clinical empowerment (Charry & Beltrán, 2019)
Local indicators	Monitor progress through indicators adapted to the territory
Innovative training	Integrating clinical simulation and PBL into nursing curricula (Céspedes Santacreu, 2020)
Global-local articulation	Aligning the Global Plan 2021-2030 with regional policies (Astier-Peña et al., 2021)

Source: own elaboration

The findings obtained offer sufficient elements to answer the research question posed, by systematically identifying the trends, challenges, and opportunities that characterize the management of patient safety in the field of nursing in the department of Cesar. First, the trends show that the department follows the general line reported in the international and national literature: adoption of protocols, measurement of indicators, and training programs. However, unlike countries such as Brazil or Spain, where the reporting culture has shown progressive advances (Reis et al., 2019; Aranaz Andrés et al., 2020), in Cesar the notification of adverse events continues to be limited, which prevents a real assessment of the risk and impact of interventions.

Regarding the challenges, the findings of Cesar coincide with the literature reviewed in pointing to work overload, lack of adherence to protocols, and the weakness of the safety culture as persistent obstacles (Rocco & Garrido, 2017; Zuleta González et al., 2024). However, in the departmental context, these difficulties are aggravated by structural factors such as geographic dispersion and the concentration of services in Valledupar. This finding confirms what has been pointed out in previous studies on regional inequities in Colombia, where rurality increases the risk of unsafe care (Ministry of Health of the Department of Cesar, 2023).

In terms of opportunities**,** the results suggest that the key lies in strengthening nursing leadership and the curricular integration of patient safety in undergraduate and graduate education. The international literature underscores that training with active methodologies, such as clinical simulation and problem-based learning, improves the ability of future professionals to identify and manage risks (Cardoso Rocha et al., 2021; Céspedes Santacreu, 2020). Its implementation in Cesar could close the gap between national and international policies and local practice.

Theoretically, the value of articulating Donabedian's model, the culture of safety, and nursing leadership as explanatory frameworks for the phenomenon is reinforced. Practically, priority lines of action are identified for the institutions of Cesar: promoting non-punitive reporting systems, designing permanent training programs, and integrating safety indicators into improvement plans.

The Donabedian model (structure-process-result), traditionally applied as an evaluation tool, can be redefined as a pedagogical guide in nursing education. It is not only a matter of measuring indicators, but of training students in the ability to analyze how structural conditions (infrastructure and human talent), care processes (protocols, communication, adherence) and health outcomes are interconnected. In this way, the future professional is trained to recognize systemic failures and actively participate in the formulation of improvement plans. The culture of patient safety**,** more than an organizational construct, is a transversal value that must be integrated into nursing curricula. From the teaching perspective, this implies teaching students that safety does not depend only on compliance with protocols, but also on collective attitudes and practices: open communication, analysis of errors as learning opportunities, and promotion of trust between teams. A concrete contribution is to promote non-punitive reporting systems**,** training future professionals in the use of reporting tools, case analysis and collaborative learning.

Nursing leadership**,** understood as the ability to influence care and organizational processes, should not be limited to an operational role in care. In teaching, it should be assumed as a strategic competency: the nurse leader is the one who promotes safety rounds, leads the training of interdisciplinary teams, and articulates policies with daily practices. Therefore, designing clinical leadership training programs**,** with simulation of risk scenarios, team management, and conflict resolution, is essential to strengthen the culture of safety in territories such as Cesar. In short, these conceptual frameworks are not restricted to the explanation of the phenomenon of patient safety. In the case of Cesar, they become the basis for proposing pedagogical lines of action that contribute to nursing education:

- Incorporate the critical analysis of the structure-process-outcome triad into clinical training.
- Train students in the reporting of adverse events in simulated and real environments, under non-punitive approaches.
- Design safety leadership curricular modules, oriented to interdisciplinary work and risk management.

In this way, nursing training not only prepares professionals capable of providing safe care, but also transformative agents who lead the consolidation of a culture of safety in Cesar and in contexts with similar structural conditions.

Implications From Nursing Practice

In the context of Cesar, nursing staff not only represent the operational core of care, but also the main agent of change to consolidate safe environments. Daily clinical practice requires competencies that transcend the mechanical application of protocols and focus on the ability to recognize risks, manage incidents, and lead continuous improvement processes. From this perspective:

The application of Donabedian's model in nursing practice implies that each professional critically analyzes the conditions of the institution in which he or she works (structure), evaluates adherence to standardized processes (processes), and measures the quality of the results achieved with patients. This exercise strengthens clinical autonomy and contributes to accountability.

Promoting a non-punitive safety culture requires that nursing staff be trained and participate in the reporting of adverse events, not as a sign of individual failure, but as part of a collective learning system. This requires that daily practice incorporate spaces for feedback and discussion of cases, favoring transparency and continuous improvement.

Nursing leadership is expressed in the ability to coordinate interdisciplinary teams, conduct safety rounds, lead training programs in error prevention, and be a link between institutional policies and the patient experience. In territories such as Cesar, this leadership is key to compensating for structural limitations and ensuring continuity of care.

Implications From Government Actions, Regulations and Public Po
licies

Patient safety in Cesar cannot be separated from the national and international framework of regulation and public policy. The Mandatory System for Quality Assurance in Health (SOGCS), together with the Audit Program for Quality Improvement (PAMEC) and the guidelines for good practices in patient safety, constitute regulatory tools that require greater grounding at the local level (Ministry of Health and Social Protection, n.d.). However, data from ASIS Cesar 2023 show that gaps still persist in the coverage, infrastructure, and distribution of human talent (Cesar Health Secretariat, 2023).

In this scenario, priority lines of action are identified:

- Strengthen the policy of reporting adverse events**:** the departmental government, in coordination with the Ministry of Health, should implement anonymous and non-punitive regional notification systems, accompanied by educational campaigns that promote trust among health workers.
- Encourage permanent training**:** through agreements with universities and university hospitals, territorial plans can finance patient safety refresher programs for nurses and other professionals, aligned with international standards of the WHO and PAHO.
- Guarantee territorial equity in patient safety**:** Cesar's high rurality requires that public policies include differentiated strategies for remote areas, such as mobile training units, telenursing, and the creation of indicators adapted to rural contexts.
- Articulate global policies with the local context**:** the Global Action Plan 2021–2030 can be a roadmap for Cesar, but its effective implementation depends on adaptation to the real conditions of the departmental system.

CONCLUSIONS

The purpose of this study was to analyze the management of patient safety in nursing in the department of Cesar, in order to identify trends, challenges, and opportunities that guide improvement actions in a territory characterized by high rurality, the concentration of services in Valledupar, and gaps in infrastructure and human talent. In general terms, the findings contribute to answering the question posed in the introduction: the analysis allowed us to recognize that, although there are regulatory and institutional advances in terms of protocols, audits, and training programs, patient safety still faces structural and cultural barriers that limit its consolidation.

This study provides new information by situating the analysis of patient safety from the territorial and disciplinary perspective of nursing. Unlike previous research focused on national levels or specific institutions, this work shows how factors specific to Cesar, such as geographical dispersion, hospital concentration, and training gaps, affect the implementation of global and national policies. It also highlights that nursing leadership is not only operational in care, but also strategic in the articulation of regulatory frameworks with daily practice and professional education.

Although the results do not contradict the expected logic that structural limitations affect quality and safety, they do highlight an important discrepancy**:** despite the existence of national protocols and guidelines, their actual application in Cesar is partial and heterogeneous. This gap can be explained by the tension between policies designed in centralized urban scenarios and local realities marked by territorial inequality, which forces us to rethink the way in which norms are grounded in peripheral contexts. The limitations of the study **are** mainly related to the use of secondary information, which may present underreporting and institutional biases. In addition, the methodological heterogeneity of the research reviewed makes it difficult to directly compare results. However, the triangulation of scientific literature, regulations and institutional data made it possible to build a robust and contextualized panorama.

In conclusion, this work not only responds to the problem posed, but also broadens the understanding of it by placing it in a territory with particular conditions of inequity. Patient safety in Cesar requires a real articulation between nursing practice, health institutions, and public policies, and this study shows that nursing leadership is the fundamental hinge to move towards a safer, more equitable, and sustainable system.

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