

Exploring the Accountability and Perception on Artificial Intelligence Among Nurses in Selected Hospitals in Bulacan

Josephine A. Casco¹, Joel John Dela Merced²

<https://orcid.org/0009-0009-8062-860X>¹; <https://orcid.org/0000-0002-1479-5274>²

St. Bernadette of Lourdes College^{1, 2}

jcasco@sbcl.edu.ph¹; jdelamerced@sbcl.edu.ph²

ABSTRACT

The rapid integration of Artificial Intelligence (AI) in healthcare necessitates an examination of how nurses navigate accountability and perception toward these technologies. This qualitative-phenomenological study explored the lived experiences of nine (9) staff nurses from selected hospitals in Bulacan, Philippines, regarding AI accountability and perception. Semi-structured interviews were conducted and analyzed through thematic analysis. Findings revealed two overarching dimensions: (1) Accountability, encompassing ethics, potential incorrect judgments, man-over-machine autonomy, effects on public dignity, public confidence, and inherent biases in testing; and (2) Perceptions, including perceived usefulness, perceived ease of use, social influence, facilitating conditions, and self-efficacy. Results indicated that nurses affirmed human primacy in clinical decision-making, expressed heightened concern for data privacy and patient dignity, and recognized AI's potential to enhance efficiency while cautioning against overdependence. Participants consistently highlighted accountability gaps, particularly the inability to hold AI responsible for errors. Institutional support, structured training, and robust data governance emerged as critical facilitators of responsible AI adoption. Anchored in Rogers' Diffusion of Innovations Theory, this study underscores the need for an integrated approach balancing technological advancement with ethical governance and human-centered nursing care in the Philippine healthcare context.

Keywords: Artificial intelligence, accountability, perception, nurses, healthcare, Philippines, qualitative

INTRODUCTION

Artificial Intelligence (AI) is increasingly reshaping nursing practice, raising important questions about accountability and professional perception that warrant focused inquiry.

Globally, AI technologies are increasingly embedded across the care pathway, from predictive analytics that flag patient deterioration to clinical decision-support tools that assist with diagnosis and medication safety (Alowais et al., 2023). Proponents argue these tools can reduce documentation burden and free nurses for direct patient care, while critics caution they can obscure the reasoning behind a recommendation and shift responsibility away from the clinician (Topol, 2025).

Accountability structures have not fully kept pace with this shift. Professional bodies such as the American Medical Association (2025) deliberately frame these systems as "augmented" rather than artificial intelligence, underscoring that clinicians remain answerable for outcomes, while regulators such as the U.S. Food and Drug Administration (2025) now require ongoing post-market monitoring of AI/ML-enabled devices precisely because such systems continue to change after deployment. Yet frontline nurses are rarely consulted when these tools are procured or evaluated, even though they are expected to catch an AI system's mistakes in real time.

These global conversations take on a distinct character in the Philippine setting, where hospitals must reconcile international enthusiasm for AI with limited ICT infrastructure and uneven digital literacy (PIDS, 2025). Bulacan hospitals are increasingly exposed to AI-enabled systems, yet their nurses have had little opportunity to voice how they understand accountability or come to trust such tools. It is this gap that the present study sought to address.

Statement of the Problem

This study specifically aimed to explore the lived experiences of staff nurses regarding:

Specifically, this study sought to answer the overarching question: What are the lived experiences of staff nurses in selected hospitals in Bulacan regarding accountability and perception in the use of Artificial Intelligence in clinical practice? In pursuit of this, the study examined the following:

1. accountability dimensions, including ethics, potential incorrect judgments, man-over-machine autonomy, effects on public dignity, public confidence, and inherent biases in AI testing; and
2. perception dimensions, including perceived usefulness, perceived ease of use, social influence, facilitating conditions, and self-efficacy.

Scope and Delimitations

This section aims to supply the scope and delimitations of the study, including the selected hospitals in Bulacan, Philippines, the nurses as primary participants, the use of a qualitative approach within a limited timeframe, and the focus on perceptions, attitudes, and accountability in AI use. It also outlines the aspects excluded, such as other healthcare regions, broader facility representation, and extended data collection, acknowledging constraints in sample size, resources, and potential bias in participant responses.

The study was delimited to licensed staff nurses directly involved in bedside care who had first-hand exposure to at least one AI-assisted system within their hospital. Data collection relied on a single round of semi-structured interviews conducted within a defined period in 2025, and the analysis was anchored solely in Rogers' Diffusion of Innovations Theory rather than alternative technology-acceptance models. The findings are therefore intended to offer an in-depth understanding of a small group's experiences rather than statistically generalizable conclusions.

Review of Related Literature

Artificial Intelligence (AI) is rapidly transforming healthcare delivery worldwide, with the global AI in patient engagement market projected to grow at a compound annual growth rate of 21.2% between 2024 and 2030 (Grand View Research, 2023). As of 2025, approximately 22% of healthcare organizations have implemented domain-specific AI tools, reflecting accelerating trust in the technology (Menlo Ventures, 2025). In the Philippine context, however, AI adoption faces significant barriers, including inadequate ICT infrastructure, digital divide issues, and a national AI readiness ranking of 65th globally—trailing ASEAN neighbors (PIDS, 2025; Navigating ASEAN AI Governance, 2025).

Within nursing specifically, AI applications increasingly span deterioration-prediction systems, medication safety alerts, and documentation tools (Alowais et al., 2023). Topol (2025) argues such tools can restore time for the human elements of care, but only if AI is treated as a support mechanism rather than a substitute for clinical judgment—a distinction that recurs throughout the accountability literature.

Accountability frameworks emerging internationally converge on keeping human oversight central. The American Medical Association (2025) promotes "augmented intelligence" to reinforce that clinicians retain ultimate responsibility, the FDA (2025) requires post-market surveillance of AI/ML-enabled devices, and the OECD (2025), European Commission (2025), UNESCO (2025), and World Health Organization (2025) similarly emphasize transparency, fairness, and human oversight as pillars of ethical AI governance. This suggests an emerging consensus that accountability cannot be delegated to a machine, even as questions remain about how this translates into everyday practice in resource-constrained settings.

These global dynamics intersect with structural barriers rarely foregrounded in international literature. The Philippines currently ranks 65th globally in AI readiness, trailing several ASEAN neighbors, a gap attributed to inconsistent ICT infrastructure and limited government investment in health-technology governance (PIDS, 2025; Navigating ASEAN Region AI Governance Readiness in Healthcare, 2025). Provincial hospitals such as those in Bulacan must therefore navigate the promise of AI-enabled care alongside chronic resource constraints and limited structured training—conditions that shape how nurses come to perceive their own accountability when using such tools.

As frontline healthcare professionals, nurses play a pivotal role in AI integration within clinical settings. Their accountability for patient outcomes and their direct interface with AI-assisted tools make their perceptions and attitudes toward AI critically important. Despite growing global literature on healthcare AI adoption, few studies have examined the lived experiences of Filipino nurses—particularly in provincial healthcare settings such as Bulacan. This gap underscores the need for an in-depth, qualitative inquiry into how nurses experience AI accountability and perceive its integration into everyday clinical practice.

Theoretical Framework

Anchored on Rogers' (2003) Diffusion of Innovations (DOI) Theory, this study examined how accountability factors and perceptions interact to shape nurses' behavioral intention toward AI adoption. The DOI framework provides a robust lens for understanding why and at what rate AI innovations are embraced or resisted within healthcare organizations, accounting for relative advantage, compatibility, complexity, trialability, and observability as determinants of adoption.

Applied here, relative advantage reflects whether nurses perceive AI as genuinely improving outcomes or efficiency, compatibility reflects alignment with existing routines and ethical standards, and complexity captures the learning curve nurses must overcome. Trialability and observability, in turn, concern opportunities for supervised practice and visible evidence of a system's benefits or shortcomings. Read alongside the study's accountability lens, this framework helps explain why nurses might recognize AI's potential usefulness while remaining cautious adopters.

METHODOLOGY

This section presents the research design, procedures, and analytical approach employed in this study.

Research Design

The study used a qualitative-phenomenological design to explore nurses' lived experiences regarding AI accountability and perception, allowing for a deeper understanding of subjective insights.

This design was selected because it allows access to the underlying meaning nurses attach to accountability and perception, consistent with Creswell and Creswell's (2023) description of phenomenology as suited to understanding a phenomenon through the perspectives of those who have directly experienced it.

Research Steps

Data collection began with ethical clearance and coordination with hospitals, followed by purposive sampling of nurses. Semi-structured interviews were conducted, recorded, transcribed, validated through member-checking, and analyzed thematically.

Prior to data collection, the researcher secured ethical clearance and obtained formal permission from each participating hospital's administration. A brief pilot interview tested the clarity of the interview guide, and interviews continued until no substantially new themes emerged, at which point saturation was judged to have been reached with nine participants.

Data Collection and Sample Selection

Nine staff nurses from selected hospitals in Bulacan were chosen through purposive sampling, and their identities were kept confidential using codes. Interviews were conducted in person or online, recorded, transcribed, and validated for accuracy.

Eligible participants were licensed staff nurses in direct patient care roles with documented exposure to at least one AI-assisted system, who voluntarily provided informed consent. Each interview lasted approximately thirty to sixty minutes and followed a guide organized around the study's accountability and perception dimensions, while allowing space for related concerns in participants' own words. Transcripts were returned to participants for member-checking to confirm accuracy.

Data Analysis Methods

Thematic analysis based on Braun and Clarke's framework was used, involving coding, theme development, and categorization. Peer debriefing ensured the study's rigor and reliability.

Analysis followed Braun and Clarke's (2012) six-phase approach: familiarization, initial coding, collating codes into candidate themes, reviewing themes against the full data set, defining and naming each theme, and producing a coherent narrative. Emerging themes were discussed with the research adviser during peer debriefing to reduce the risk of biased interpretation before the final dimensions and thematic domains were confirmed.

Research Hypotheses and Validation

As a qualitative study, no statistical hypotheses were tested. Instead, findings were validated through member-checking and adviser review to ensure accuracy and credibility.

Trustworthiness followed Lincoln and Guba's criteria: credibility through member-checking, transferability through thick description of context, dependability through a clear audit trail of coding decisions, and confirmability through reflexive journaling and peer debriefing.

Study Limitations and Ethical Considerations

Informed consent and confidentiality were maintained throughout the study. Data were securely stored and accessed only by the researcher. The small sample size from one province limits generalizability and highlights the need for further research.

Participants were informed of their right to withdraw at any point without penalty, and confidentiality was protected through alphanumeric codes used in place of names throughout storage and reporting. Because participants were drawn from a single province and relied on self-reported accounts, findings may be shaped by social desirability or recall bias and should be read as reflective of this specific group rather than of Filipino nurses generally.

RESULTS AND DISCUSSION

Thematic analysis identified two overarching dimensions—Accountability and Perceptions—each comprising six and five thematic domains, respectively.

Together, these eleven domains illustrate that nurses do not experience AI as a purely technical matter but as an ethical, relational, and organizational one, in which trust must be earned through demonstrated safety, institutional support, and the preservation of human judgment at every step of care.

Accountability Dimension

Under Ethics, nurses recognized that AI can be used in clinical care but emphasized that empathy and nurse-patient interaction remain irreplaceable. They stressed that AI should support, not replace, human expertise, and must be reliable and validated before use.

This echoes the American Medical Association's (2025) positioning of AI as "augmented" rather than autonomous intelligence: participants did not reject AI outright but insisted its role be bounded by clinical oversight.

Regarding Potential Incorrect Judgments, nurses emphasized that human judgment should always override AI decisions. They also raised concerns about unclear accountability when AI makes errors, highlighting the need for clear liability frameworks.

This concern parallels regulatory discussions around post-market surveillance of AI/ML-enabled devices (Food and Drug Administration, 2025), which likewise recognize that such systems can behave unpredictably once deployed in real clinical environments.

On Man-over-Machine Autonomy, nurses affirmed that decision-making should remain with healthcare professionals. AI is viewed as a supportive tool that requires critical thinking and verification, not as an independent decision-maker.

Concerning Effects on Public Dignity, data privacy and patient confidentiality were major concerns. Reports of data breaches and system errors highlighted the need for strong cybersecurity and transparent data governance.

These concerns resonate with UNESCO's (2025) emphasis on transparency and fairness and the World Health Organization's (2025) guidance on safeguarding patient safety, framing data privacy as an extension of nurses' duty to protect patient dignity rather than a mere compliance requirement.

On Public Confidence, trust in AI depends on outcomes and proper use. Overreliance may reduce professional credibility, while training and proven accuracy help build trust.

For Inherent Biases in Testing, nurses stressed the importance of thorough validation, pilot testing, and regular system checks. They emphasized that AI must meet high safety standards before implementation.

Perception Dimension

Perceived Usefulness was widely recognized, with AI seen as helping reduce workload, improve time management, and increase accuracy. However, concerns about

overdependence and possible skill decline were also noted, emphasizing the need for continuous professional development.

This aligns with Topol's (2025) argument that AI's greatest value lies in returning time to clinicians for direct patient care, provided convenience does not erode fundamental clinical skills.

Perceived Ease of Use improved with experience, as nurses highlighted the importance of user-friendly systems. Initial challenges decrease over time, but continuous training for all age groups remains essential.

Social Influence was shaped by training, peers, social media, and seminars. Platforms like Facebook and Messenger played a key role in increasing awareness and shaping perceptions of AI.

Facilitating Conditions such as administrative support, government backing, infrastructure, and budget were seen as crucial for AI adoption. Limited funding, especially in government hospitals, was identified as a major challenge.

This finding underscores that perception cannot be separated from structural context: participants' concerns about underfunded government hospitals point to a potential equity gap in AI adoption between public and private facilities that merits attention from policymakers.

Self-Efficacy improved through training and hands-on experience, with younger nurses adapting more quickly. Nurses emphasized the importance of maintaining human oversight of AI, supporting its role as a tool for augmented intelligence.

SUMMARY

This study explored how nurses in Bulacan hospitals view accountability and perception issues in AI use. They emphasized human judgment, raised concerns about liability and data governance, and recognized AI's benefits in improving efficiency and accuracy. Adoption depends on usability, support, and training, highlighting the need for ethical governance and human-centered care.

Taken together, the findings suggest that nurses' willingness to engage with AI is inseparable from their sense of professional responsibility: perception cannot be improved through training alone if accountability structures remain unclear, and accountability cannot be strengthened without addressing the conditions that shape nurses' trust in a given system.

CONCLUSIONS

AI integration in Bulacan healthcare is shaped by accountability and perception issues. Nurses see AI as a support tool, not a replacement for clinical judgment. Key needs include data privacy, clear accountability, system validation, and training, supported by ethical and human-centered implementation.

More broadly, these findings suggest that successful AI integration in Philippine healthcare cannot be achieved through technology procurement alone. It requires investment in nurses' capacity to use these tools safely, transparent policies clarifying where human accountability begins and ends, and attention to equity gaps between well-resourced and under-resourced facilities.

RECOMMENDATIONS

Future research should examine AI adoption in various healthcare settings and include patient perspectives. Healthcare professionals should use AI as a support tool while maintaining clinical judgment and continuous training. Institutions must ensure proper training, data privacy, and clear guidelines, while government agencies should establish

regulatory frameworks and data policies. AI developers and academic institutions should promote transparent systems and continuous learning, and patients should be informed to support trust and responsible AI use.

In practical terms, hospitals may consider phased, closely supervised pilot testing of new AI tools paired with incident-reporting mechanisms that let nurses flag AI-related errors without fear of blame. Nursing education programs should likewise begin integrating AI literacy and ethical-use content into curricula so future nurses enter the workforce equipped to critically evaluate, rather than passively accept, AI-generated recommendations.

ACKNOWLEDGMENTS

We express our gratitude to all individuals who assisted in completing this research. We would also like to express our gratitude to our colleagues and friends for their unwavering encouragement, support, and valuable comments over the entire process. Ultimately, our families warrant gratitude for their enduring patience and unwavering support throughout the entire process. These individuals contributed to the feasibility of this research.

AI DECLARATION STATEMENT

AI-supported tools helped with grammar and structure in creating this article. No AI tools were used to collect, analyze, or interpret data; all authors are credited for their academic contributions.

REFERENCES

- Alowais, S. A., et al. (2023). Revolutionizing healthcare: The role of artificial intelligence in clinical practice. *BMC Medical Education*, 23, 689. <https://doi.org/10.1186/s12909-023-04698-z>
- American Medical Association. (2025). *Augmented intelligence in health care: Policy and practice guidelines*. AMA Publishing.
- Braun, V., & Clarke, V. (2012). Thematic analysis. In H. Cooper (Ed.), *APA handbook of research methods in psychology*. American Psychological Association.
- Creswell, J. W., & Creswell, J. D. (2023). *Research design: Qualitative, quantitative, and mixed methods approaches* (6th ed.). SAGE Publications.
- European Commission. (2025). *Artificial intelligence in healthcare: Updated regulatory and ethical frameworks*. Publications Office of the European Union.
- Food and Drug Administration. (2025). *Artificial intelligence and machine learning (AI/ML)-enabled medical devices: Regulatory guidance*. U.S. Department of Health and Human Services.
- Grand View Research. (2023). *AI in patient engagement market size & share report, 2030*. <https://www.grandviewresearch.com/industry-analysis/artificial-intelligence-ai-patient-engagement-market-report>
- Menlo Ventures. (2025). *2025: The state of AI in healthcare*. <https://menlovc.com/perspective/2025-the-state-of-ai-in-healthcare/>
- Navigating ASEAN region AI governance readiness in healthcare. (2025). ScienceDirect. <https://doi.org/10.1016/j.hlpt.2025.101003>
- OECD. (2025). *AI in health: Governance, accountability, and policy recommendations*. OECD Publishing.
- Philippine Institute for Development Studies. (2025). *Experts warn AI may deepen PH digital divide without urgent reforms*. <https://www.pids.gov.ph>

- Rogers, E. M. (2003). Diffusion of innovations (5th ed.). Free Press.
- Topol, E. (2025). Deep medicine: How artificial intelligence can make healthcare human again (Updated ed.). Basic Books.
- UNESCO. (2025). Ethical governance of artificial intelligence in healthcare systems. UNESCO Publishing.
- World Health Organization. (2025). Global guidance on artificial intelligence for health: Ethics, safety, and governance. WHO Press.