

# Ethical Challenges in Integrating Artificial Intelligence into Nursing Care: A Narrative Review

Leili Yekefallah<sup>1</sup>, Sareh Mohammadi<sup>2\*</sup>

1. Professor of nursing, Department of Intensive Care Nursing, School of Nursing and Midwifery, Qazvin University of Medical Sciences, Qazvin, Iran.
2. Master of Intensive Care Nursing, Alborz University of Medical Sciences, Karaj, Iran.

## Abstract

### Background:

The integration of Artificial Intelligence (AI) into nursing practice is revolutionizing healthcare delivery by enhancing diagnostic accuracy, patient monitoring, and personalized care. However, ethical challenges such as privacy, transparency, equity, accountability, and the preservation of humanistic care complicate its implementation, especially in culturally specific contexts like Iran. This narrative review aims to explore the ethical challenges of AI integration in nursing care within the Iranian context, aligning global principles with cultural and religious values.

### Materials and methods:

A narrative review approach was adopted. International (PubMed, Scopus, DOAJ) and Iranian (Magiran, SID) databases were searched for relevant articles published between 2018 and 2023 using keywords like Artificial Intelligence, Nursing Ethics, and Islamic Bioethics. Of 60 initial articles, 20 met the inclusion criteria and were analyzed using thematic synthesis.

### Findings:

The review identified five key ethical challenges associated with integrating AI into nursing care. Privacy and data security emerged as critical concerns, with breaches undermining trust and conflicting with the Islamic principle of *Satr* (privacy). Transparency and informed consent are jeopardized by the complexity of AI systems, which compromise *Ekhtiyar* (autonomy). Equity and bias were highlighted as algorithmic biases exacerbate healthcare disparities, contradicting the ethical principle of *Adl* (justice). Accountability remains ambiguous, particularly regarding responsibility for AI-driven errors, raising significant ethical concerns. Lastly, humanistic care is threatened by overreliance on AI, which risks dehumanizing patient interactions and undermining *Rahmat* (compassion), a cornerstone of Iranian nursing ethics.

### Conclusion:

AI integration into nursing requires frameworks that reconcile ethical principles with Iranian cultural and religious values. Recommendations include culturally sensitive AI governance, bias mitigation strategies, and educational initiatives to empower nurses.

**Keywords:** Artificial Intelligence, Nursing Ethics, Islamic Bioethics, Ethical Challenges in Healthcare AI

## Introduction

Artificial Intelligence (AI) has become a transformative force in healthcare, offering tools that enhance diagnostic accuracy, streamline workflows, and enable personalized care [1,2]. However, its integration into nursing raises ethical concerns, especially in culturally specific settings like Iran, where healthcare practices are rooted in Islamic ethical principles such as *adl* (justice), *rahmat* (compassion), and *satr* (privacy) [3]. These principles occasionally conflict with the automation and opacity introduced by AI technologies.

Global AI ethics frameworks, including the European Union's Guidelines for Trustworthy AI [4], emphasize beneficence, transparency, and justice. Yet, they often lack cultural specificity, making their application challenging in contexts like Iran. This narrative review explores the ethical implications of AI in Iranian nursing practice and proposes culturally aligned strategies to address these challenges.

## Methods

This narrative review was conducted using a structured approach to identify relevant literature on the ethical challenges of Artificial Intelligence (AI) in nursing. A comprehensive search was performed in PubMed, Scopus, DOAJ, Magiran, and SID, focusing on studies published between January 2018 and September 2023. Keywords included Artificial Intelligence, Nursing Ethics, Islamic Bioethics, and Ethical Challenges in Healthcare AI.

After the initial search yielded 60 articles, their abstracts and titles were screened, and studies unrelated to nursing ethics or AI were excluded. The remaining 40 articles underwent full-text review. Based on inclusion criteria—articles published in English or Persian, focusing on Iranian or Islamic ethical contexts, and presenting peer-reviewed findings—a final selection of 20 articles was achieved.

The selected studies were reviewed by one researcher, with their findings extracted and categorized according to predefined ethical themes. Data were validated through cross-verification by two additional researchers to ensure accuracy and consistency.

## Results

- Privacy and Data Security

AI systems' reliance on extensive data raises concerns about breaches, threatening patient trust and violating *satr* (privacy), a core principle in Islamic bioethics [5,6]. Existing Iranian data protection laws lack provisions specific to AI, leaving gaps in safeguarding patient confidentiality [7].

- Transparency and Informed Consent

The "black box" nature of AI algorithms challenges transparency, hindering nurses' and patients' ability to understand decision-making processes. This undermines *ikhtiyar* (autonomy), which Islamic ethics strongly emphasize [8,9]. Explainable AI (XAI) offers potential solutions by enhancing algorithmic transparency [10].

- Equity and Bias

Biases in AI training datasets can exacerbate healthcare disparities, particularly in rural Iranian regions where access is limited. Justice (*adl*) demands the inclusion of diverse, representative data to ensure equitable outcomes [11,12].

- Accountability

AI complicates responsibility attribution, particularly in cases of errors. Shared accountability (*mas'ooliyat*), a tenet of Islamic ethics, underscores the need for clear guidelines delineating roles and responsibilities among nurses, developers, and institutions [13,14].

- Humanistic Care

AI's efficiency risks dehumanizing nursing by reducing interpersonal interactions. Compassion (*rahmat*) is central to Iranian nursing practice and must be preserved in AI-integrated care models [15,16].

## Discussion

- Cultural Sensitivity in Ethical AI Implementation

Iranian healthcare ethics, deeply rooted in Islamic values, demand the localization of global AI principles. For instance, while global frameworks stress autonomy, Iranian nursing ethics prioritize collective well-being and respect for religious norms [17]. Privacy (*satr*) is particularly emphasized in Islamic ethics, requiring robust data security measures to align AI systems with cultural expectations [18].

- Addressing Algorithmic Bias

Bias in AI systems often stems from datasets that inadequately represent diverse populations. In Iran, the inclusion of locally relevant data is critical to avoid perpetuating inequalities. Collaborative efforts between AI developers, policymakers, and healthcare professionals are necessary to create equitable AI tools [19].

- Preserving Humanistic Care in a Digital Era

Humanistic care is a cornerstone of nursing in Iran. AI should augment rather than replace nurse-patient interactions. Hybrid models, where AI supports clinical decisions while nurses maintain empathetic communication, can bridge technological efficiency with compassionate care [15].

- Strengthening Accountability Frameworks

AI-driven healthcare requires new accountability models. Islamic ethics' emphasis on mas'ooliyat (shared responsibility) aligns with the need for collaborative governance in AI deployment. Policymakers must establish clear guidelines defining the roles of nurses, AI developers, and healthcare institutions [14].

- Educational and Legal Initiatives

Education is essential for empowering nurses to use AI ethically. Training programs should integrate Islamic ethical principles with AI competencies. Additionally, Iran's legal frameworks need to address AI-specific challenges, ensuring compliance with both Islamic and international standards [6].

## Conclusion

AI presents profound opportunities for enhancing nursing care but also introduces ethical challenges requiring culturally sensitive solutions. Aligning AI integration with Islamic ethical principles, such as adl (justice), rahmat (compassion), and satr (privacy), is essential for sustainable adoption in Iran. Recommendations include robust governance frameworks, equity-focused AI development, and preserving humanistic care in AI-supported nursing practices.

## References

1. Topol E. Deep Medicine: How Artificial Intelligence Can Make Healthcare Human Again. Basic Books; 2019.
2. Alizadeh Z, et al. AI in Iranian nursing: ethical considerations. J Med Ethics. 2022;16(3):145–52.
3. Hosseinzadeh R, et al. Cultural influences on nursing ethics in Iran. J Med Humanities. 2021;12(1):33–40.
4. European Union. Ethics guidelines for trustworthy AI. European Commission; 2019.
5. Zhang T, et al. Privacy concerns in AI-driven nursing care. Nurs Ethics Q. 2022;15(2):89–96.
6. Rahman L, et al. Data privacy and AI in nursing. J Healthc Technol. 2022;18(4):200–14.
7. Karimi A, et al. Legal frameworks for AI in Iranian healthcare. Iran Law Rev. 2021;9(2):88–95.
8. Taylor M. The transparency dilemma in AI. AI Soc. 2023;28(3):112–25.
9. Alavi Z, et al. Islamic perspectives on autonomy in healthcare. J Islam Ethics. 2020;5(2):77–85.
10. Barredo A, et al. Explainable AI in healthcare: a critical review. Nat Mach Intell. 2020;2(4):199–209.
11. Zarei H, et al. Equity in AI-assisted diagnostics in Iran. Iran J Public Health. 2022;51(3):345–53.
12. Johnson R, et al. Algorithmic bias in healthcare AI. Health Equity J. 2023;7(1):33–45.
13. Chen X, Lee K. Accountability in AI-assisted nursing. Bioethics Q. 2022;29(2):121–9.
14. Rahmani S, et al. Humanistic care in AI-integrated nursing. Patient Exp J. 2023;15(3):145–51.
15. Hosseini F, et al. AI and humanistic nursing in Iran. Int J Nurs Ethics. 2021;17(3):203–15.
16. Smith J. AI ethics and nursing education. J Nurs Educ Today. 2023;22(1):67–78.
17. Abdollahi M, et al. Islamic bioethics in AI integration. Iran J Med Ethics. 2020;16(4):201–12.
18. Beauchamp TL, Childress JF. Principles of Biomedical Ethics. 8th ed. Oxford University Press; 2020.
19. Mortazavi M, et al. AI governance in healthcare: an Iranian perspective. Sci Eng Ethics. 2023;29(1):56–72