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ETHICAL IMPLICATIONS OF ARTIFICIAL INTELLIGENCE IN NURSING CARE: A SYSTEMATIC LITERATURE REVIEW FROM AN ISLAMIC PERSPECTIVE

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Abstract: *While AI has significantly advanced patient care, clinical workflows, and medical research, there remains a lack of literature exploring AI's ethical implications in nursing through the lens of Islamic values. This systematic literature review examines the ethical considerations of integrating artificial intelligence (AI) in nursing practice from an Islamic ethical perspective. The review synthesized documents published between 2014 and 2024, retrieved from Scopus, ProQuest, ClinicalKey for Nursing, and Google Scholar. The search followed PRISMA guidelines, and 19 eligible documents were included after screening. The synthesis identified three primary ethical themes: 1) Safety, with subthemes of data privacy, misuse, algorithm bias, and physical safety; 2) Human element, focusing on trust, empathy, and human touch; and 3) Autonomy and informed decision-making. Additionally, four key Islamic ethical concepts were identified: 1) Maqasid Al-Shariah (objectives of Islamic law), 2)*

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Maslaha (public benefit), 3) Informed consent and liability, and 4) Text, understanding, and application (Nas, fiqh, and tabayyun). The findings highlight the importance of addressing the ethical challenges posed by AI in nursing, especially by providing adequate training for nursing professionals. Integrating Islamic perspectives into these discussions offers valuable insights that can enhance the ethical delivery of personalized, culturally sensitive, and efficient care. The review emphasizes the need for a nuanced approach to AI's ethical implications in nursing practice, ensuring that AI's potential is fully realized in an ethically grounded manner for diverse patient populations.

Keywords: *Artificial Intelligence, Machine Learning, Patient Care, Muslim Ethics, Nurse*

Introduction

AI involves the simulation of human intelligence by systems or machines, with the goal of developing entities that can think like humans and mimic behaviors such as perceiving, reasoning, learning, planning, and predicting (Xu et al. 2021). While Gil de Zúñiga et al. (2023) defined AI as the tangible real-world capability of non-human machines or artificial entities to perform, task solve, communicate, interact, and act logically as it occurs with biological humans. Together, these definitions emphasize AI's aim to mimic human cognitive functions and actions in artificial entities.

Literature Review

AI techniques and problem-solving approaches are increasingly becoming essential tools in supporting nursing care in healthcare delivery through direct patient interaction and the facilitation of effective diagnosis and treatment (Fernandes et al. 2023). The urgency to integrate AI into healthcare has been driven by several pressing concerns, including rising healthcare costs, worker, and physician burnout due to staff shortages, patients' need for immediate care, and the growing complexity of illnesses (Bellucci 2022). Bellucci (2022) also reviewed that the increasing use of AI in nursing offers numerous opportunities, such as enhanced patient care, earlier and more accurate diagnosis and treatment through tools that reflect patient acuity and risk, improved overall population health, and increased efficiency in nurses' workflows. Woodnutt et al. (2023) further emphasize AI's ability to improve the effectiveness and quality of healthcare delivery. Their study noted that AI is already employed in healthcare to support evaluative tasks like algorithmic data analysis, as well as to enhance the delivery of robotics, smart devices, and medications. By analyzing extensive patient data, AI algorithms can detect patterns and alert nurses to potential issues before they become critical, enabling early interventions, and enhancing patient outcomes (Buchanan et al. 2020; Chang et al. 2022).

While AI offers remarkable potential benefits in nursing, it also presents significant challenges that must be carefully addressed, particularly in the realm of ethics. In 2021, the World Health Organization (WHO) released a document titled "Ethics and Governance of Artificial Intelligence for Health." This document outlines six key ethical principles such as: 1) Protect autonomy, 2) Promote human well-being, human safety, and the public interest, 3) Ensure transparency, explainability, and intelligibility, 4) Foster responsibility and accountability, 5) Ensure inclusiveness and equity, and 6) Promote AI that is responsive and sustainable (Health Ethics & Governance [HEG] 2021). This designed to guide the development and application of AI technologies in healthcare, ensuring that they are used responsibly and effectively.

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Islam, as both a devine religion and a holistic way of life encourages the pursuit of knowledge and innovation, which can be extended to advancements in fields such as AI. The development and application of AI, like any other technology, are viewed through the ethical framework that Islam promotes, which prioritize justice, fairness, and the well-being of society. Thus, adhering to ethical principles in AI is indispensable for aligning its utilization with the overarching objectives of Islamic Shariah, particularly in achieving human welfare and moral rectitude (Mohadi & Tarshany 2023). AI holds the potential to significantly enhance various fields, including healthcare, education, and economic development, provided it aligns with Islamic principles, such as the preservation of human dignity and the avoidance of harm. In Islamic medical ethics, accountability encompasses a dual obligation: a spiritual and moral duty toward God, the Creator of the human body, and a legal responsibility to professional and regulatory authorities overseeing medical practice (Ghaly et al., 2024). This dual responsibility reflects the Islamic concept of *amāna* (trust) and highlights the importance of adopting new technologies in a way that respects both religious principles and professional standards (Ghaly et al., 2024). This perspective is particularly relevant for Muslim-majority healthcare systems, as it aligns medical practice and technological innovation with the population's religious and cultural values, thereby enhancing trust, ethical soundness, and social legitimacy in the adoption of AI. However, ethical concerns surrounding its potential misuse, biases, and the replacement of human labour necessitate a careful consideration. Addressing these issues requires the responsible and ethically guided development of AI to ensure its contributions remain consistent with Islamic values and broader societal well-being. Moreover, Western bioethics often emphasizes principles such as autonomy, beneficence, non-maleficence, and justice within a secular framework, Islamic ethics integrates these with a theocentric foundation, grounding moral responsibility in divine accountability and the concept of humans as stewards (amāna) of God's creation (Sachedina, 2005).

AI integration in nursing care presents both positive outcomes and potential ethical challenges. This research aims to inform evidence-based practices and address ethical considerations from an Islamic perspective, contributing to the ongoing discourse on optimizing the use of AI technologies in nursing care. Moreover, Mamat et al. (2024) has suggested in their study that the potential areas of research in AI related to nursing care, particularly focusing on ethical considerations from an Islamic viewpoint. Ultimately, this study seeks to integrate the existing evidence in order to gain a thorough understanding of ethical considerations of AI application in nursing care from an Islamic perspective.

Methods

Identify Relevant Studies

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines were followed to guide the identification, screening, exclusion, and inclusion of documents in this review. Searches were conducted using three electronic databases—Scopus, ProQuest, and ClinicalKey for Nursing—as well as one search engine, Google Scholar, to locate documents published between 2014 and 2024 that aim to determine the Islamic perspective on the ethical considerations of AI in nursing care. The inclusion of documents from the past ten years was deemed necessary to capture the most impactful contributions in the rapidly evolving field of AI together with ethical consideration from Islamic perspectives. The search terms used were: (Artificial Intelligence OR Machine Learning OR Cognitive Computing OR Neural Networks OR Deep Learning OR Expert System OR Robotic OR

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Intelligence System OR Automated Reasoning) AND (Nursing care) AND (Ethic OR Ethical) AND (Islam). However, the keyword "Islam" was excluded from the search terms when using the Scopus database due to limited number of articles. Additionally, the reference lists of the included studies were manually reviewed to identify relevant research, and all references were cataloged in EndNote software. A PRISMA flow diagram was generated to visually represent the outcomes of the search and screening process (see Figure 1).

Search Result

A total 2337 records were identified from ProQuest (n=77), Scopus (n=30), ClinicalKey for Nursing (n=1281) and Google Scholar (n=949). No additional records were identified through other resources. Results with abstracts were subsequently exported into EndNote. Out of the 2337 articles, 30 duplicates were removed, and 2307 records were screened for eligibility. After applying the inclusion and exclusion criteria, 2262 documents were excluded as they were irrelevant to the topic of interest, leaving 45 articles eligible for full screening. Subsequently, 26 documents were excluded for the following reason: AI in general or AI in nursing care but did not analyze ethical issues or Islamic concept. Finally, 19 articles were included in this review (see Figure 1).

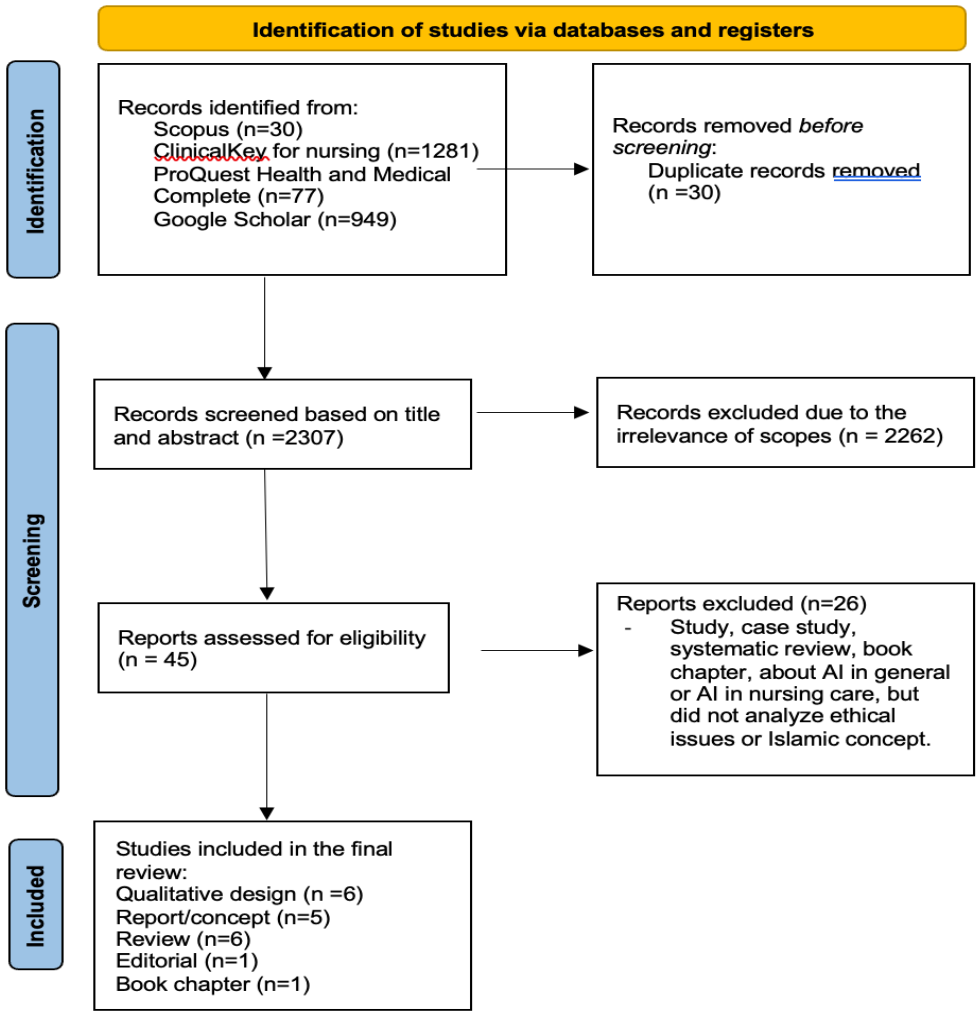

Figure 1: PRISMA Flow Diagram Of The Documents Search, Selection Process And Reason For Exclusion

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Study Selection

The authors independently screened the titles and abstracts of the identified studies to assess their relevance. Subsequently, the full texts of the selected articles were examined to ensure they met the inclusion criteria (see Table 1). These criteria were rigorously applied to include only studies pertinent to the review's objectives. Similarly, exclusion criteria were implemented to omit any literature that fell outside the scope of the review.

Table 1: **Inclusion And Exclusion Criteria**

Inclusion Criteria
▪ Articles encompassing quantitative studies, qualitative studies, mixed methods, conference proceedings, theoretical papers, pilot studies, protocols, discussion, commentary, literature review, or book chapter, or dissertations. ▪ Contents relevant to ethical ethical consideration of AI in nursing care. ▪ Content relevant to Islamic ethics that authored by Islamic scholars, ethicists, or academics with a background in Islamic jurisprudence (Usul al-Fiqh), theology, or bioethics. ▪ Studies conducted in any setting. ▪ Published in the Malay or English language. ▪ Published between 2014-2024.
Exclusion Criteria
▪ Studies that do not address the aim of interest or involve animal subjects. ▪ Articles consisting of abstract only.

Critical Appraisal of The Sources of Evidence

In this review, only data from the qualitative studies were synthesize using Joanna Briggs Institute (JBI) checklist, a critical appraisal tool for systematic reviews (See Table 2) because other papers and book chapter are not relevant for critical appraisal. During data synthesis, themes related to the ethical considerations of AI in nursing care will be extracted from the key findings of the included studies, with an analysis of the similarities and differences between the main findings. Additionally, sub-themes will be identified to address more specific aspects of the findings, following the approach commonly used by qualitative researchers in theme development. Despite this, we have decided to include all 19 documents in the synthesis process as they offer important insights to the review questions posed, not only based on the empirical data, but also the authors' expertise, book chapter and conceptual paper in the field of ethics in nursing care and Islamic perspectives.

Data Extraction

The standardized data extraction chart included the following information for each study: Authors year, country, study design, objectives, recruitment, and main findings (see Table 3).

Assessment of Risk of Bias and Level of Evidence

Since the primary aim of this review was not to assess the effectiveness of AI applications in nursing care, we did not conduct a risk of bias assessment for the original research studies.

Results

A summary of the findings related to ethical consideration of AI in nursing care reveals three main themes: 1) Safety, with subthemes a) Data privacy, b) Misuse, c) Algorithm bias and d)

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Physical safety; 2) Human element, with subthemes a) Trust and empathy, and b) Human touch, and 3) Autonomy and informed decision-making.

Table 2: JBI Quality Appraisal for Qualitative Studies

	CI	C2	C3	C4	C5	C6	C7	C8	C9	C10
1) Harun et al. (2024)	Y	Y	Y	Y	Y	UC	UC	NA	NA	Y
2) Rony et al. (2024)	Y	Y	Y	Y	Y	UC	UC	Y	Y	Y
3) Nielsen et al (2022)	Y	Y	Y	Y	Y	UC	Y	Y	Y	Y
4) Wangmo et al (2019)	Y	Y	Y	Y	Y	N	UC	Y	Y	Y
5) Rony et al. (2023)	Y	Y	Y	Y	Y	N	N	Y	Y	Y
6) Hemmet (2023)	Y	Y	Y	Y	Y	N	N	Y	Y	Y

Y=Yes, N=No, UC=Unclear, NA=Not applicable

C1=Is there congruity between the stated philosophical perspective and the research methodology?
C2=Is there congruity between the research methodology and the research question or objectives?
C3=Is there congruity between the research methodology and the methods used to collect data?
C4=Is there congruity between the research methodology and the representation and analysis of data?
C5=Is there congruity between the research methodology and the interpretation of results?
C6=Is there a statement locating the researcher culturally or theoretically?
C7=Is the influence of the researcher on the research, and vice-versa, addressed?
C8=Are participants, and their voices, adequately represented?
C9=Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?
C10=Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?

Theme 1: Safety

a) Data Privacy

Safeguarding patients' identities and medical records must be the top priority for AI-driven healthcare systems (Rony et al., 2023). AI systems require access to large volumes of patient data to function efficiently (Kondaguli, 2023). Therefore, protecting patient privacy and ensuring data security is critically important in the era of AI-driven healthcare (Billingsley et al., 2024; Eghtedar et al., 2023; Kondaguli, 2023; Harun et al., 2022; Mohadi & Tarshany, 2023; Nielsen et al., 2022; Rony et al., 2023; Rony et al., 2024; Seibert et al., 2021; Servaty et al., 2020; Tan et al., 2021; Wangmo et al., 2019). The ethical challenges posed by AI's data management capabilities include concerns such as data leakage (Harun et al., 2024), unauthorized access (Rony et al., 2024), and the discomfort experienced by patients and caregivers due to the use of cameras and microphones by AI systems (Nielsen et al., 2022). This theme also highlights the proactive role of nurses as guardians, protectors (Rony et al., 2024), and advocates (Rony et al., 2023), emphasizing their responsibility to maintain patient confidentiality and ensure that AI integration in nursing care adheres to ethical standards. Rony et al. (2024) stress the necessity of rigorous monitoring during digital interactions and computer program usage to prevent the unintentional disclosure of confidential patient information. Additionally, Wangmo et al. (2019) recommends limiting data collection to essential clinical purposes, with clear guidelines for data access and storage, to ensure patients have greater control over their personal information.

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Table 3: Summary of The Selected Articles

Study (Year), Country	Design (Data Collection Method	Phenomenon of Interest	Recruitment	Main Findings
Nielsen et al. (2022) (Germany)	Title: Implementing ethical aspects in the development of a robotic system for nursing care: a qualitative approach			
	- Qualitative - Focus group and individual interview	To explore ethical risks and requirements found to be relevant for the robotic system under investigation, using the BS 8611 as a guiding framework and by involving potential end users	24 participants (16 professional nurses participated in three focus groups, while individual interviews were conducted with 8 patients and relatives)	a) Ethical Risks and Requirements b) Attitudes Towards Robotics c) User Perspectives d) Open-Mindedness and Uncritical Comments:
Harun et al. (2024) (Indonesia)	Title: Challenges and threats of artificial intelligence in Maqasid Sharia Perspective			
	- Descriptive using qualitative data	To understand and know the challenges and threats of artificial intelligence in the perspective of Maqasid Sharia for human life	writing that produces a description of an event or problem, either in the form of writing obtained via the media or direct or indirect observation.	a) Threats and Challenges of Articicial Intelligence b) Unemployment c) AI stores and also manages data, d) misuse e) Ethics and trust f) Regulation and policy g) Job replacement
Hemmet (2023) (USA)	Title: Harmonizing artificial intelligence with Islamic values: A Thoughtful analysis of religious, social, and economic impacts of technological advancements			
	- Qualitative study - Semi-structured interview	To explores the multi-dimensional impact of AI in the modern age and its relationship with Islamic principles and societal norms.	13 interview respondents including professor, AI expert, religious scholar and AI technologist	a) AI and religious perspectives b) Evolution and limits of AI c) Religious implications of AI d) Social implications of AI e) Ethical AI f) Economic ramifications of AI g) General and future implications of AI
Rony et al. (2024) (Bangladesh)	Title: Artificial intelligence in future nursing care: Exploring perspectives of nursing professionals - A descriptive qualitative study			
	- Qualitative study - Semi-structured interview	To provide insights into the perceptions of nursing professionals regarding the role of AI in shaping the future of healthcare.	23 nurses for various unit and ward	a) Perceptions of AI readiness b) Benefits and concerns c) Enhanced patient outcomes d) Collaboration and workflow e) Human-tech balance f) Training and skill development g) Ethical and legal considerations

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				h) AI implementation barriers i) Patient-nurse relationships j) Future vision and adaptation
Rony et al. (2023) (Bangladesh)	Title: Advancing nursing practice with artificial intelligence: Enhancing preparedness for the future			
	- Qualitative study - Focus group and individual interview - Interview guide	To provide a comprehensive understanding of the ethical considerations surrounding the use of robots in nursing care, taking into account the perspectives of various stakeholders involved in the healthcare process.	16 professional nurses, 8 patients and relatives. (n=24)	a) Ethical risks concerns b) Personal privacy c) Relationship level
Wangmo et al. (2019) (Switzerland)	Title: Ethical concerns with the use of intelligent assistive technology: findings from a qualitative study with professional stakeholders			
	- Qualitative study - Semi-structured interview	To explore and assess the ethical issues that professional stakeholders perceive in the development and use of IATs in elderly and dementia care.	20 healthcare personnel	a) Informed consent b) Advance directives c) Deception d) Data management e) Data access f) Data sharing g) Affordability – Distributive justice h) Human contact is crucial
Servaty et al. (2020) (Germany)	Title: Implementation of robotic devices in nursing care. Barriers and facilitators: an integrative review			
	- An integrative review	To identify barriers to and facilitators of the implementation of robotic systems in nursing.	Not applicable	Ethical issues included the fear that personal human interaction would be replaced by action carried out by robots, the fear of decreased social contact, patients' stigmatisation as being frail and dependent when using robotic devices, the fear of the dehumanisation of society, privacy issues (e.g., invasion of privacy, risk of surveillance, feelings of being followed and watched and low data security) and the fear that the robots compromise capabilities and thus have negative effects on health.
	Title: Application Scenarios for Artificial Intelligence in Nursing Care: Rapid Review			

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Seibert et al. (2021) (Germany)	Rapid review design	To synthesizes literature on application scenarios for AI in nursing care settings as well as highlights adjacent aspects in the ethical, legal, and social discourse surrounding the application of AI in nursing care.	Not applicable	a) Purpose of AI Application b) Requirements and Barriers c) Ethical, Legal, and Social Aspects
Tan et al. (2021) (Singapore)	Title: Tensions and antagonistic interactions of risks and ethics of using robotics and autonomous systems in long-term care			
	- Systematic review	To address the literature and knowledge gaps by theorising and advancing the understanding of technological risks and ethical implications of robotics and autonomous systems in long-term care, besides teasing out their possible interactions.	Not applicable	a) Functional analysis of robotics and Autonomous sastems in long-term care b) Technological risks in the application of robotics and autonomous systems in long-term care c) Ethical issues in the application of robotics and autonomous systems in long-term care d) Tensions between various technological risks and ethical issues
Billingsley et al. (2024) (USA)	Title: Transforming Health Care: Exploring Artificial Intelligence Integration, Data Governance, and Ethical Considerations in Nursing			
	- Literature review	To explore how AI can transform healthcare by improving diagnostic accuracy, treatment outcomes, and overall healthcare delivery	Not applicable	a) AI Integration in nursing b) Data governance c) Ethical considerations d) Regulatory challenges e) Nurses' role
Kondaguli (2023) (India)	Title: Revolutionizing Healthcare: the transformative Role of Artificial Intelligence in the Nursing Profession - an opinion Review			
	- Opinion review	To explores the opportunities and challenges associated with the adoption of AI technologies in	Not applicable	a) AI-Powered Diagnosis and Treatment b) Enhancing Nursing Efficiency with AI c) Ethical Considerations in AI Implementation d) Augmented Decision-Making and Predictive Analytics

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		nursing practice.		e) AI and Personalized Patient Care
Eghtedar et al. (2023) Iran	Title: Artificial intelligence in nursing and midwifery care: a new solution or new ethical challenges?			
	- Conceptual paper		Not applicable	a) Lack of human touch b) Limited interpretation of patient needs c) Limited ability to provide physical care d) Limited ability to handle complex situations. e) Dependence on data quality f) Ethical considerations
Nashwan et. al. (2024) (IRAQ)	Title: Charting the Future: The Role of AI in Transforming Nursing Documentation			
	- Editorial	To discuss and highlight the potential benefits of integrating artificial intelligence (AI) into nursing documentation.	Not applicable	a) Benefits of AI in Nursing Documentation b) Ethical Considerations c) Responsibility and Safeguards
Mohanasundari et al. (2023) (India)	Title: Can Artificial Intelligence Replace the Unique Nursing Role?			
	- Review	To explores whether AI can replace unique nursing roles.	Not applicable	a) Power of artificial intelligence for enhanced patient care b) Challenges and drawbacks of artificial intelligence in patient care c) Nursing in the age of artificial intelligence: unique nursing role and artificial intelligence
Nawi et al. (2023) Malaysia	Title: Exploring opportunities and risks of artificial intelligence research for Islamic ethical guidelines			
	- Concept paper	To review contemporary perspectives on AI opportunities and risks.	Not applicable	a) Opportunities of Artificial Intelligence Use b) Artificial Intelligence Risks of Overused or Misused c) *Maqasid al-Shari'ah* as a Parameter for Ethical Islamic Guidelines in AI Research
Elmahjub (2023) Qatar	Title: Artificial Intelligence (AI) in Islamic Ethics: Towards Pluralist Ethical Benchmarking for AI			

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	- Concept paper	To explores artificial intelligence (AI) ethics from an Islamic perspective at a critical time for AI ethical norm-setting.	Not applicable	a) AI in an Ethical Context b) Islamic Approaches to Evaluating Ethical Implications of Technology c) Toward a Hybrid Vision of *Maṣlaḥa*
Ghaly (2024)	Title: Islamic ethico-legal perspectives on medical accountability in the age of artificial intelligence			
	- Book chapter		Not applicable	a) Medical accountability b) Potential influence on future ai policies and laws
Dahlan (2018) (Japan)	Title: Future Interaction between Man and Robots from Islamic Perspective			
	- Concept paper	To introduce the development of AGI and views on AGI from the viewpoint of the global society.	Not applicable	a) Current Impact of Robots to Global Human Society b) Robotics Development from Islamic Perspective c) Implication of Robots to Muslims Way of Life
Mohadi & Tarshany (2023) (Malaysia)	Title: Maqasid Al-Shari'ah and the Ethics of Artificial Intelligence: Contemporary Challenges			
	- Concept paper	To provides a concise analysis of the concept of Maqasid al-Shari'ah and its relevance to AI ethics.	Not applicable	a) The Concept of Ethics in Islam b) The Paradigm of Ethics and Maqasid al-Shari'ah c) Ethical Challenges in the Usage of Artificial Intelligence: Privacy and Manipulation d) Ethical Challenges and the Impact of Artificial Intelligence on Human Choice and Society e) The Concept of Maqasid Al-Shariah and its Relevance to Artificial Intelligence f) The Dilemmas of Artificial Intelligence between Policies and Islamic Regulations g) A Maqasid-Based Approach for Artificial Intelligence Ethical Challenges

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b) Misuse

Another concern involves potential misuse, which is increasingly prevalent in the media, including issues like identity theft, manipulation, and cybercrime (Harun et al. 2024). Such misuse not only compromises patient privacy but can also have erosion of trust in healthcare systems that utilize AI technologies (Rony et al. 2024). The complexity of AI systems makes it difficult to pinpoint responsibility when breaches occur, leading to ambiguity regarding accountability (Harun et al. 2024; Tan et al. 2021).

c) Algorithm Bias

AI must be approached with an understanding of its limitations, including potential biases in algorithms and data quality issues, which can lead to harmful clinical outcomes (Billingsley et al. 2024) and unequal treatment (Mohanasundari et al. 2023). If the training data contains biases, AI systems may reinforce these biases, resulting in disparities in patient care based on factors such as race, gender, or socioeconomic status (Kondaguli 2023). Additionally, AI systems rely on accurate and comprehensive data to generate recommendations. However, issues such as incomplete or inaccurate data can significantly compromise the reliability of these outcomes (Eghtedar et al. 2023). It is crucial to understand how AI algorithms reach their conclusions and make decisions (Rony et al. 2023). Therefore, nurses must carefully select and validate AI models to ensure fairness and equity in patient care.

d) Physical safety

Nurses expressed concerns about the physical safety risks associated with the use of robotic systems in patient care (Nielsen et al. 2022). They highlighted the potential for harm, such as skin lesions and pain, that could result from the robotic end effector's contact with patients. Additionally, nurses raised specific risks, such as the possibility of fractures occurring during patient movement. For example, one nurse emphasized the danger of muscular resistance leading to bone fractures, stating, "If there is muscular resistance or something, that it doesn't break your bones later on" (PN14) (Nielsen et al. 2022). This emphasizes the need for rigorous safety protocols and risk assessments when integrating robotics into patient care to prevent physical injuries.

Theme 2: Human element

a) Trust and empathy

Despite the sophistication and complexity of artificial intelligence, it presents challenges in understanding and interpreting AI-generated decisions, often leading to potential bias and uncertainty regarding their accuracy (Harun et al. 2024). AI systems frequently function as "black boxes," where the rationale behind decisions for diagnoses and treatment recommendations is complex and difficult to understand (Kondaguli 2023). In contrast, nurses emphasize that the irreplaceable warmth of compassion, empathy, and genuine human connections is central to effective and ethically sound nursing care, even amidst the increasing presence of AI and machinery (Rony et al. 2024; Rony et al. 2023; Wangmo et al. 2019). They argue that while AI can provide technical support and serve as a complementary tool, it cannot replicate or replace the deeply human aspects of nursing, such as forming authentic connections with patients, which are essential for morally acceptable and holistic care (Rony et al. 2024; Rony et al. 2023; Wangmo et al. 2019). While AI can enhance the technical aspects of healthcare, it cannot substitute the fundamental human qualities of empathy and genuine connection that are vital for ethically sound and holistic nursing care. Healthcare professionals, including nurses, may risk becoming overly dependent on AI tools, potentially resulting in less

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emphasis on the human elements of patient care, such as active listening and empathetic communication (Mohanasundari et al. 2023).

b) Human touch

Nursing and midwifery care require a personal touch and emotional support—elements that AI systems are unable to provide (Eghtedar et al. 2023). While AI offers remarkable potential benefits in nursing, it also presents significant challenges that must be carefully addressed, particularly in the realm of ethics. Concerns have been raised that the use of robots in patient care could diminish the essential human contact between nurses and patients (Nielsen et al. 2022; Rony et al. 2024; Tan et al. 2021; Wangmo et al. 2019). While AI has the potential to revolutionize healthcare, it should be used solely as a complementary tool to support, rather than replace. The compassionate interactions that are at the core of nursing (Rony et al. 2024), the essence of nursing lies in the human touch irreplaceable aspect of caregiving that fosters empathy and builds trust, which are fundamental to effective clinical care and patient well-being (Wangmo et al. 2024). Patients requiring care might feel devalued and less recognized as individuals when a robot, rather than a human caregiver, is responsible for providing physical touch (Nielsen et al. 2022). Furthermore, the presence of robots may unsettle patients, while nurses might become preoccupied with managing the technology instead of directly engaging with patients (Nielsen et al. 2022). The fear of healthcare professionals being replaced by robots poses a significant barrier to AI implementation, especially when the outcomes of new technologies fail to meet user expectations (Servaty et al. 2020).

Nursing incorporates a multifaceted approach to patient care, combining clinical expertise, empathy, critical thinking, and advocacy. Nurses use hands-on experience and a holistic perspective to assess and manage patient conditions. In contrast, AI systems, which rely on predefined algorithms and data, often lack the flexibility needed to handle rapidly changing patient conditions and cannot address the emotional needs of patients and their families in dynamic situations (Mohanasundari et al. 2023). Nursing and midwifery care frequently involve complex scenarios that require critical thinking and decision-making skills—capabilities that AI systems may not be able to replicate (Eghtedar et al. 2023). Nurses' deep understanding of human emotions, combined with their critical thinking abilities, enables them to make complex decisions while providing clear and compassionate communication with patients and their families. AI, on the other hand, lacks human emotions and empathy, making it less effective in understanding and addressing the emotional components of patient care (Mohanasundari et al. 2023). Therefore, while AI can support healthcare delivery, it cannot substitute the essential human qualities that are crucial for effective and holistic nursing care.

Theme 3: Autonomy and informed decision-making

Nurses have expressed concerns that the use of robots in nursing care could undermine the autonomy of both nurses and patients. Some participants feared that the decision to implement robotic systems might be driven more by economic factors rather than by the needs or preferences of patients and caregivers (Nielsen et al. 2022). Additionally, they suggested that frequent reliance on robots could lead to a decline in the skills and abilities of both nurses and patients, potentially diminishing the capacity for independent decision-making and action (Nielsen et al. 2022). Employing AI in nursing care is not merely about task automation; it involves a nuanced process of ethical decision-making, comparable to crafting a narrative through deliberate choices (Rony et al. 2023). In this context, each decision made with AI

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transcends simple task completion, embodying a carefully devised plan that aligns with ethical principles. This narrative approach highlights a commitment to responsible healthcare practices, where patient care is shaped by thoughtful consideration and adherence to core values (Rony et al. 2023). For example, the European Union's General Data Protection Regulation (GDPR) imposes specific requirements on automated decision-making, highlighting the importance of transparency and the individual's right to understand and contest AI-driven decisions (Billingsley et al. 2023). While AI can provide valuable insights, the final decisions about patient care should ultimately rest with the patients. This requires nurses to balance AI recommendations with patient preferences, upholding patients' right to make informed choices (Billingsley et al. 2023; Kondaguli 2023). Similar concerns regarding autonomy, especially in long-term care settings, have also been reported by Tan et al. (2021).

The complexities of decision-making become even more pronounced in the care of older adults with dementia, whose cognitive abilities progressively deteriorate (Wangmo et al. 2019). Nurses noted that, in such cases, patients might be unable to make informed decisions regarding the use of AI. In these instances, surrogates should make decisions based on a thorough understanding of the technology and the patient's previously expressed wishes. When patients have articulated their preferences regarding future care, those wishes should take precedence (Wangmo et al. 2019). Furthermore, while AI systems rely on data and algorithms to make recommendations, they may fail to fully address the unique needs and preferences of each individual patient (Eghtedar et al. 2023). This emphasizes the importance of human judgment in interpreting AI recommendations to ensure that patient autonomy and personalized care are maintained.

Islamic perspective of AI

Four key concepts were identified in the discourse on AI from an Islamic perspectives, which are a) *Maqasid Al-Shariah*, (the higher objectives of Islamic law), which emphasize the preservation of essential values such as religion, life, intellect, lineage, and wealth b) *Maslaha (*Public interest*)*, which guides decision-making to achieve collective benefit and prevent harm, c) Informed consent and liability, which portrays the importance of accountability and the ethical treatment of individuals in AI deployment; and d) Text, understanding and application (*Nas, fiqh and tabayyun*), which highlight the need for careful interpretation, jurisprudential analysis, and clarity in the application of Islamic teachings to AI.

Maqasid Al-Shariah

Islam encourages human engagement in pursuit of science and technology, emphasizing their role in advancing societal well-being. In fact, within the Islamic tradition, —understood in its broadest sense—is regarded as a socially obligatory duty (*fard kifayah*), requiring the collective participation of Muslims to contribute meaningfully to the betterment of human life (Nawi et al. 2023). The primary objective of AI research is to enhance the quality of human life. Therefore, establishing ethical guidelines grounded in religious teachings to guide AI research and protect the Muslim community is highly recommended (Nawi et al. 2023).

Maqasid Al-Shariah, as a legal framework, offers a basis for assessing how AI aligns with Islamic principles (Mohadi and Tarshany 2023). The central aims of *Maqasid Al-Shariah* include the preservation of religion, life, intellect, property, and dignity. The relevance of *Maqasid Al-Shariah* to AI emerges from AI's potential to impact various aspects of human life, such as personal privacy, employment, and social justice (Mohadi and Tarshany 2023).

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These principles can guide the development and application of AI, providing a framework for ethical decision-making. One of the primary objectives of *Maqasid Al-Shariah* is the protection of individual rights, particularly the right to privacy (Mohadi and Tarshany 2023). This objective aligns with the broader aim of preserving human dignity, ensuring that AI is not used in ways that violate human rights or dignity. Moreover, the protection of intellect is closely connected to the Islamic concept of human. Intellect enables humans to exercise free will, think, and make moral decisions—key elements of the Islamic view of humanity (Nawi et al. 2023). Islamic principles inform every facet of both social and personal life, with the Shariah serving as the guiding framework for all human experiences (Mohadi and Tarshany 2023).

While AI holds the potential to deliver substantial benefits, it is crucial to ensure that its development and align with Islamic values. The five components of *Maqasid Al-Shariah* are highly relevant and must be considered to avoid harm and undesirable consequences (*mafsadah*), such as the destruction of life, adverse conditions, and the loss of enduring well-being and happiness (Nawi et al. 2023). By adhering to the objectives of *Maqasid Al-Shariah*, the development and use of AI can be directed toward supporting the well-being of both individuals and society (Mohadi and Tarshany 2023). To manage the rapid evolution of AI technology, collaboration and interdisciplinary integration are essential strategies. AI developers and policymakers should incorporate diverse perspectives, particularly those rooted in Islamic teachings (Mohadi and Tarshany 2023).

In the evaluation of AI, it is common practice to assess individual technologies by weighing their respective advantages and disadvantages. Islamic ethics, however, adopts a holistic approach grounded in the primary sources of Islamic *Shariah*: the Holy Quran and the Sunnah, which include the sayings, approvals, and actions attributed to the Prophet Muhammad (SAW) (Mohadi and Tarshany 2023). These sources provide broad normative principles that can substantiate arguments in favour of fairness, transparency, and privacy as morally commendable, while condemning bias, opacity, and privacy violations (Elmahjub 2023). However, it is crucial to recognize that these sources may not offer details on how to address contemporary challenges, such as those posed by AI (Elmahjub 2023). Therefore, to comprehensively analyze AI, it is essential to reconsider our understanding of happiness and our responsibilities as vicegerents of the Creator (*Allah SWT*) on earth, incorporating diverse ethical perspectives (Mohadi and Tarshany 2023).

Maslaha

Over centuries, Muslim jurists have diligently worked to extract from primary revealed sources a comprehensive ethical framework that distinguishes between good and evil, right and wrong, providing guidance for human behavior in evolving contexts (Elmahjub 2023). Muslims scholar address ethical uncertainties by deriving Islamic moral judgments (*ḥukm al-sharʿi*) from the principles of Islamic jurisprudence (*uṣūl al-fiqh*) (Elmahjub 2023). As Islamic jurisprudence evolved, scholars recognized the need to interpret the normative language of textual sources to address challenges not explicitly outlined in the Revelation. This approach holds that the ultimate goal of divine law is to serve human interests, known as *maṣlaḥa*, which seeks to promote the welfare of humanity. Textual sources often articulate broad principles and high purposes (*hikam*) intended to foster societal well-being.

The concept of *maṣlaḥa* plays a pivotal role in the normative analysis of AI. As a flexible principle, it is frequently invoked to render moral judgments on matters not explicitly addressed by Islamic textual sources (Elmahjub 2023). *Maṣlaḥa* functions as a comprehensive ethical

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framework, rooted in *Maqasid Al-Shariah*, that balances the potential harms and benefits of emerging ethical and legal challenges (Elmahjub 2023). However, *maṣlaḥa* is only one of several sources Muslim jurists draw upon to shape Islamic jurisprudence (Elmahjub 2023). Various schools of thought have developed and refined the principles (*uṣūl*) of Islamic jurisprudence, which serve as the foundation from which ethicists derive moral judgments. Many of these principles are highly relevant to the ethical dilemmas posed by AI. For instance, textual sources emphasize key values such as fairness, privacy, trustworthiness, and honesty—values essential to the ethical governance of AI technologies. These principles help ensure the fairness of algorithmic decision-making, protect privacy in data collection and use, and prohibit the harmful application of AI technologies against humans or other living entities (Elmahjub, 2023).

In the context of AI, *maṣlaḥa* serves as an evaluative framework to assess the compatibility of AI with Islamic concepts of good (*ḥasan*) and evil (*qabīḥ*), as well as right (*ḥaqq*) and wrong (*batīl*) (Elmahjub 2023). This framework should guide our understanding of major AI concepts, such as the content, limits, and scope of fairness, transparency, accountability, and privacy. However, the essence of *maṣlaḥa* is subject to debate, particularly when applied to AI. Two distinct interpretations of *maṣlaḥa* can be derived in this context. One interpretation is a welfarist or utility-oriented approach, which focuses on maximizing overall societal benefits. The other is a duty-based approach, which prioritizes intrinsic values like fairness, dignity, and human agency over utilitarian considerations. These conflicting interpretations of "the good" or *maṣlaḥa* in Islamic ethical discourse on AI require further investigation and reconciliation (Elmahjub 2023). The modern Islamic reformist movement largely supports a utility-based interpretation of *maṣlaḥa*, advocating for widespread social, legal, economic, and technological reforms aimed at improving conditions in Muslim societies and adapting to modern advancements (Ghaly 2024). This perspective aligns well with the incorporation of AI technologies and smart tools in fields such as medicine. Based on current academic studies and authoritative works, there is no indication that the use of AI in medicine would inherently shift it from its historically established state of religious permissibility to prohibition (Ghaly 2024).

On the one hand, techno-optimists highlight the potential benefits of AI in medicine, such as improving diagnostic accuracy, enhancing treatment efficiency, and expanding access to healthcare services. These benefits hold significant moral value from an Islamic standpoint, especially in terms of improving human welfare, which aligns with the objectives of *Maqasid Al-Shariah* (Ghaly 2024). However, many of these advantages remain largely promises, with real-world evidence of their long-term impact still unfolding. On the other hand, while AI-empowered medicine appears permissible, its application does not alter existing religious rulings on certain prohibited practices. For example, even with AI's potential, religious prohibitions on practices such as euthanasia or human cloning will remain unchanged (Ghaly 2024). This suggests that while AI can offer significant advantages in ethical areas like improving patient care, it must still be applied with caution to ensure it adheres to established Islamic principles, especially in ethically sensitive areas. In summary, while AI technology in medicine presents clear potential benefits, its use must be balanced with careful consideration of Islamic ethical principles to prevent conflicts with long-standing prohibitions.

Inform consent and liability

The use of AI-empowered tools in healthcare must naturally align with good intentions and noble objectives, particularly the goal of providing quality medical care (*taṭbīb*) (Ghaly 2024).

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Many current AI tools focus on healthcare administration and disease diagnosis rather than directly contributing to the core goal of treating or curing diseases (*qaṣd al-shifāʾ*) (Ghaly 2024). However, employing AI in these capacities is unlikely to divert medicine from its primary aim of treatment, while still offering other religiously permitted benefits. That said, caution is necessary, as the integration of AI into healthcare can also potentially be exploited for unethical purposes.

A key ethical concern is whether physicians are obligated to inform patients in advance about the use of AI-driven tools. Ghaly (2024) argues that this obligation is justified, particularly if AI could impact the expected outcome of a medical intervention. Patient consent must be based on sufficient information and clarity (*bayyina*) (Ghaly 2024). Furthermore, it is important to note that AI applications in healthcare are currently categorized as "emerging" or "novel" technologies rather than being standard medical practice (Ghaly 2024). As such, AI-empowered medicine has not yet become a customary practice (*ʿurf*) or an established domain-specific custom (*al-ʿurf al-khāṣ*). Consequently, patients do not naturally expect that AI technologies will be used in their care, and their consent to a specific medical intervention does not inherently imply permission for the use of AI tools (Ghaly 2024).

Another significant consideration is whether patient consent absolves the physician of liability if the use of AI-driven tools results in adverse outcomes, such as the termination of life or impairment of organ function (Ghaly 2024). There is debate among Muslim jurists on this issue, particularly regarding injuries that pose lesser risks than death. Many jurists argue that patient consent in such cases lessens the physician's liability, even for resulting injuries (Ghaly 2024). However, these juristic deliberations often focus on more controversial scenarios, such as cases involving requests to terminate life or excise organs for non-medical reasons. Adopting a more cautious approach—by narrowing the scope of patient authority and holding the physician liable—remains a recognized perspective within *fiqh* (Ghaly 2024).

Liability concerns extend further when considering whether an injury resulted from negligence on the part of AI device developers, especially if a design defect or related issue is identified (Ghaly 2024). Both early and contemporary Muslim jurists generally agree that physicians are responsible for injuries caused by incorrect tools used during treatment, as physicians are obligated to maintain a high level of professional competence (*ḥidhq*) and adhere to professional standards (*uṣūl al-ṣanʿa*) (Ghaly 2024). However, AI-empowered devices operate more autonomously and unpredictably than conventional medical tools, making it possible for such devices to make decisions without direct physician involvement. In such cases, design flaws may result in injuries attributable to the developer rather than the physician. Unlike the animals described in the *Quran*, which are sometimes held accountable for harm they cause, AI systems cannot be held directly responsible for medical errors or resulting injuries (Ghaly 2024).

Text, Understanding and Application (*Nas, fiqh and Tabayyun*).

The development of Artificial General Intelligence (AGI) robots can be viewed as a significant scientific advancement. There are three key Islamic frameworks that should be considered when discussing the implications of AGI robots on the Muslim way of life: a) *Nas* (revealed texts regarding the essence of human), b) *Fiqh* (Islamic jurisprudence and understanding), and c) Tabayyun (investigation and search for truth) (Dahlan 2018). The question of whether a robot that can emulate human characteristics qualifies as "human" is addressed within the scope

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of *Nas*. The application of *Fiqh* becomes relevant if *Nas* supports the notion, or if society begins to perceive robots as human-like. Additionally, the concept of *Tabayyun*—the pursuit of truth—plays a vital role in guiding this process (Dahlan 2018).

Text (*Nas*)

The debate over whether robots can be considered human is a common topic in Western discourse (Dahlan 2018), with discussions often focusing on the potential implications of such an acceptance. However, in Islam, the Quran explicitly states that humans are biologically created through the process of copulation between male and female (Quran 23:12-16). Therefore, robots, as man-made entities, cannot be classified as human (Dahlan 2018).

Jurisprudence (*Fiqh*)

Although robots can be easily programmed with religious and cultural information, an important question arises: Are they required to follow Islamic rules (*Fiqh)* (Dahlan 2018). For example, would a female-like robot be required to cover her *aurat* (the parts of the body that must be covered) in front of a male employer, as a human woman would? The Quran in Surah An-Nur states that a woman's *aurat* can only be revealed to blood relatives and servants, including male servants who are free from physical desires (Quran 24:31). Since robots are not human, they do not fall under the category of those who are not permitted to see a woman's *aurat*, according to Islamic teachings. Additionally, the Quran outlines that all living beings will eventually return to Allah S.W.T. (Quran 32:11). Therefore, the loss of a loved one should be accepted and embraced by those left behind. Replacing a deceased family member with a robot contradicts Islamic principles, as it may diminish the sanctity of life given by Allah S.W.T. and potentially lead to a hedonistic lifestyle. For this reason, Dahlan (2024) argues that substituting the presence of a deceased loved one with a companion robot is against Islamic values.

That said, the issue of companion robots remains complex and unresolved. These robots may not necessarily replace deceased individuals; they could also serve as companions, soulmates, or even friends (Dahlan 2018). Each of these roles requires further extensive discussion. Dahlan (2024) stresses that *Fiqh* issues related to robots must be approached with caution, as unregulated discussions in Muslim society could lead to fundamental debates about whether robots are "human-like" or even human, necessitating ongoing re-evaluation of these classifications.

Application (*Tabayyun*)

It is possible that in the future, robots will be utilized in various service sectors, including financial, logistics, and food industries (Dahlan 2018). In terms of food quality, AGI robots are expected to deliver exceptionally high standards of service. However, Muslims must carefully consider whether they can trust AGI robots to provide services that meet the religious requirements of halal quality, particularly with regard to pre-slaughter stunning (Dahlan 2018). Another issue in food services is the ability of AGI robots to analyze food content in real time. Trusting a machine's judgment (*tabayyun*) in determining Halal food is a matter that requires careful deliberation (Dahlan 2018).

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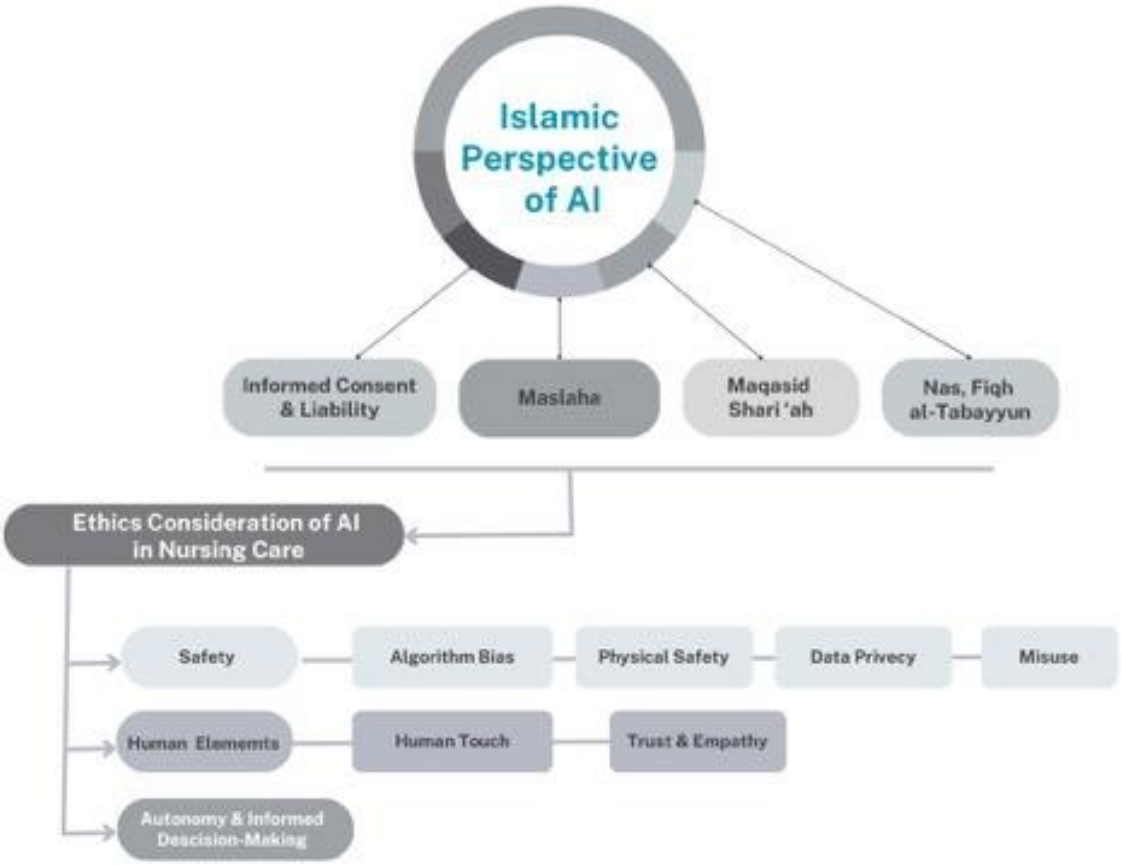

Discussion

One of the major concerns regarding the integration of AI into healthcare is patient safety, particularly in relation to data privacy, algorithmic bias, and physical safety risks. The literature emphasizes that safeguarding patient identities and medical records is paramount, as AI systems require access to vast amounts of data to function effectively (Kondaguli 2023; Billingsley et al. 2024). The potential for data leakage and unauthorized access heightens the need for stringent data protection protocols (Rony et al. 2024). Wangmo et al. (2019) emphasizes the importance of limiting data collection to essential clinical purposes to preserve patient autonomy and privacy. However, the complexity of AI systems makes accountability challenging to establish in cases of data misuse, which could erode trust in healthcare systems (Harun et al. 2024). Algorithmic bias is another significant safety concern. AI systems, which rely on historical data, may perpetuate biases based on race, gender, or socioeconomic status, leading to unequal treatment of patients (Kondaguli 2023; Mohanasundari et al. 2023). Ensuring fairness in AI-driven healthcare is critical, as biased algorithms can have far-reaching effects on clinical outcomes (Billingsley et al. 2024). Nurses, as key patient advocates, must be vigilant in selecting and validating AI models to mitigate these risks and promote equity in care (Eghtedar et al. 2023). Physical safety is also a pressing issue, particularly with the integration of robotic systems in patient care. Concerns include the potential for injury, such as skin lesions or fractures, resulting from interactions between robots and patients (Nielsen et al. 2022). These findings underline the necessity for rigorous safety protocols and risk assessments to prevent harm and ensure the safe deployment of AI systems in nursing care (Nielsen et al. 2022). Therefore, safeguarding patient privacy and data security in AI-driven healthcare

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requires stringent ethical standards, proactive nursing roles, rigorous monitoring, and clear data management guidelines to maintain trust and confidentiality.

Despite the technological sophistication of AI, it cannot replace the deeply human aspects of nursing care, such as empathy, trust, and compassionate communication. The warmth and empathy of human caregivers are irreplaceable in forming genuine connections with patients, which are vital for holistic care (Rony et al. 2024). Several studies highlight the risk of healthcare professionals becoming overly dependent on AI tools, which could reduce emphasis on essential human elements, such as active listening and empathy (Mohanasundari et al. 2023). The essence of nursing lies in human touch, which fosters trust and emotional well-being—critical aspects of patient care that AI systems cannot replicate (Wangmo et al. 2024). While AI can enhance technical aspects of healthcare, it should serve as a complementary tool rather than replacing the compassionate interactions that are central to nursing (Nielsen et al. 2022). The presence of robots in care settings may also unsettle patients, further emphasizing the importance of maintaining human contact in nursing practice (Rony et al. 2024). The integration of AI-driven interactions could reduce the human element, potentially impacting patient satisfaction and overall well-being. Therefore, although AI has the potential to enhance healthcare, it must be carefully integrated into practice to ensure that it does not erode the vital human aspects of nursing care.

The integration of AI in nursing raises important questions about patient and nurse autonomy. Nurses have expressed concerns that the implementation of robotic systems may be driven more by economic factors than by patient or caregiver preferences (Nielsen et al. 2022). There is also apprehension that frequent reliance on AI could lead to a decline in the decision-making skills of both nurses and patients, diminishing their capacity for independent action (Nielsen et al. 2022). AI-driven healthcare systems must ensure that patients retain the ability to make informed choices about their care. This aligns with the European Union's General Data Protection Regulation (GDPR), which mandates transparency in automated decision-making and emphasizes the importance of patient understanding and consent (Billingsley et al. 2023). In cases where patients are unable to make decisions, such as older adults suffering from dementia, surrogates should be involved in decisions regarding AI use, based on the patient's previously expressed wishes (Wangmo et al. 2019). While AI systems can increase efficiency, they may fail to address the unique needs of each patient, reinforcing the need for human judgment in interpreting AI recommendations to ensure personalized care (Eghtedar et al. 2023). This highlights the need for ethical decision-making frameworks that balance technological innovation with patient autonomy, particularly for vulnerable populations.

The Islamic perspective of AI provides a multidimensional ethical framework that significantly influences the themes of safety, human elements, and autonomy in nursing care. A range of practical strategies and operational framework can be implemented to enhance the ethical deployment of AI. Notably, the principles of *Maqasid Al-Shariah* provide essential criteria and conceptual guidance for fostering a judicious and morally sound application of AI technologies. These principles prioritise the protection of individual dignity and privacy. In alignment with these values, the integration of advanced data encryption techniques and stringent patient consent protocols into AI systems becomes imperative. Such measures ensure the secure management of sensitive health information while guaranteeing that patients are thoroughly informed about the purposes and processes involved in the utilization of their data. (Rony et al.

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2024; Kondaguli 2023). In line with *maslaha*, which advocates for societal welfare, AI tools can be designed to ensure equity in healthcare delivery, minimizing algorithmic biases that might disadvantage certain populations, such as those from marginalized racial or socioeconomic backgrounds (Mohanasundari et al.,2023; Billingsley et al. 2024). The principle of informed consent, vital in both Islamic law and modern medical ethics, can be practically applied by ensuring that AI systems include clear, understandable explanations of how decisions are made, allowing patients to make informed decisions about their care (Ghaly 2024). Lastly, the Islamic concept of *tabayyun*—the pursuit of truth—requires that AI decisions, especially in complex clinical scenarios, be transparent and verifiable by healthcare providers, ensuring accountability in the use of AI technology (Dahlan 2018). These examples show how Islamic ethical principles can guide the responsible and culturally sensitive integration of AI in nursing care, improving both the quality and the ethical standards of patient treatment.

The rapid advancement of AI marks a pivotal moment for the nursing profession. While AI holds the promise of transforming patient experiences in healthcare, successfully navigating this change requires a clear vision for the future of nursing. Instead of AI replacing nurses, the focus should be on fostering a collaborative relationship where AI supports nurses in delivering personalized, ethical, and compassionate care. Nurses must be involved in the design, development, and implementation of AI technologies to ensure alignment with their clinical expertise and patient-centered values. Nurses' involvement in shaping AI development and usage is crucial, as they can leverage their deep understanding of patients, care contexts, and clinical intuition to ensure AI algorithms address what truly matters to patients. Encouraging a culture of innovation within nursing, providing education on AI skills, and establishing robust feedback mechanisms are essential for effective collaboration. Building trust through ethical frameworks that promote fairness, accountability, and human oversight is essential. Open communication about AI's role in care will empower patients and ensure that their care aligns with their values and preferences. Continuous learning and adaptability will be key in the AI era. Nursing education must incorporate AI literacy into its curriculum to equip nurses with the skills to effectively utilize AI while preserving their critical thinking and clinical judgment. This ongoing education will ensure nurses remain competent and confident in an AI-enhanced healthcare environment.

This review has several limitations. First, it includes review papers, book chapters, and concept papers, the quality of which is uncertain, necessitating cautious interpretation of the findings. Additionally, significant contributions from lesser-known journals, books, or works in languages other than English may be underrepresented or entirely excluded, potentially leading to a skewed analysis that reflects only a partial perspective of the field. As a result, this may offer an incomplete understanding of the global discourse surrounding AI and Islam, particularly in regions or linguistic groups that are less prominent in major academic databases. Moreover, the rapid advancements in both AI technologies and Islamic ethical considerations contribute to a constantly evolving research landscape.

Conclusion

The ethical integration of AI into nursing care requires a careful balance between technological advancement and the preservation of fundamental human beliefs and elements, including patient safety, trust, and autonomy. The responsible integration of AI in nursing care requires

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ongoing vigilance and ethical scrutiny. Nurses must actively engage with both the technological and human aspects of AI to ensure that these systems are used in ways that enhance, rather than diminish, patient care. This research also highlights the need to incorporate Islamic ethical principles into AI in healthcare, with important implications for policy, nursing education, and AI development. Policymakers should create guidelines that align AI use with public interest (*maṣlaḥa)* and Islamic objectives (*Maqasid Al-Shariah*), focusing on patient privacy, consent, and safety. Nursing education should include these ethical principles to help nurses use AI responsibly and advocate for patient rights. AI developers should work with Islamic scholars and healthcare experts to create fair, transparent systems that protect privacy and are culturally appropriate. Overall, a combined approach based on Islamic ethics will help ensure that AI benefits patients in a responsible and ethical way.

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