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Exploring the Accountability and Perception on Artificial Intelligence Among Healthcare Workers in Selected Hospital in Bulacan

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ABSTRACT

This study highlights the importance of adopting Artificial Intelligence (AI) to improve healthcare services in the Philippines, especially in resource-limited areas. Based on Mehr's (2020) framework and supported by nursing theories from Sister Callista Roy and Rozzano Locsin, the research emphasizes aligning AI with healthcare goals and involving patients in the process.

Using a descriptive qualitative approach, the study gathered insights from 20 healthcare professionals in Bulacan hospitals. Findings revealed that AI integration requires addressing technical, ethical, organizational, and individual challenges. Successful AI adoption depends on strong infrastructure, organizational support, and ethical guidelines.

The study concludes that factors such as perceived usefulness, ease of use, social influence, and fear affect AI adoption. Promoting accountability and addressing biases are essential for trust. Ongoing collaboration among stakeholders is necessary to ensure ethical, effective, and inclusive use of AI in healthcare.

I INTRODUCTION

Background of the Study

Trends

Patient needs drive healthcare innovation, especially in improving digital doctor-patient relationships and care delivery (Caroll, 2022). Digital tools boost medication adherence, monitoring, and satisfaction (Mistry et al., 2021). AI is reshaping industries and may raise global GDP by 26% by 2030 (Kaya, 2019), but countries like the Philippines face challenges like limited resources, data issues, and lack of expertise (Mehr, 2022).

Issues

The Philippines ranks low in AI readiness due to weak infrastructure and a digital divide. Despite strong STEM talent and efforts to become an AI hub, adoption is uneven, especially in healthcare. In Bulacan, some hospitals use AI, but many face challenges like limited funding, outdated tools, and lack of training. Successful integration needs medical staff to adapt and embrace new technology.

Objectives

Adopting AI can improve healthcare in the Philippines by boosting efficiency, reducing costs, and addressing limited resources. Guided by Mehr (2022), key strategies include targeted AI use and citizen involvement. Ethical concerns like bias and transparency must be managed. AI should support, not replace, healthcare workers, helping them focus on complex care. Responsible use can lead to a more ethical and patient-centered system.

Contributions

This study examines the challenges of AI use in Bulacan's healthcare. The Philippines lags in AI adoption due to limited resources, poor internet access, and weak ICT infrastructure, despite a strong STEM graduate pool. The pandemic highlighted AI's potential to improve patient care. Integrating AI can help optimize resources, support healthcare workers, and improve health outcomes.

Review of Related Literature

Perceptions of AI in Healthcare

AI is seen both with caution and optimism. It mimics human thinking and supports complex tasks like diagnosis. AI has shown promise in matching or surpassing doctors in detecting conditions such as skin cancer, showing its potential to improve patient care.

Accountability in Healthcare

As AI becomes widespread, accountability is crucial. In healthcare, it ensures patient safety and quality care. The balance between patient needs and organizational goals must be clearly defined.

Case Studies and Experiences

AI tools, like large language models, can analyze electronic health records to improve care and save time. However, since AI relies on predictions, responsible use is needed to avoid errors and ensure ethical decisions.

Theoretical Framework

This research highlights how simulation-based learning improves nursing students' clinical skills and confidence using two key theories. Locsin's Technological Competency as Caring stresses that technology should enhance, not replace, compassionate care. Roy's Adaptation Model shows how students adapt to clinical stress through simulation, boosting problem-solving and teamwork. Together, they support both technical growth and human-centered care in nursing education.

Statement of the Problem

This study explores how healthcare practitioners in Bulacan perceive and take accountability in the adoption of artificial intelligence (AI) in their work. It focuses on their lived experiences related to accountability (ethics, errors, human control, public dignity, trust, and bias) and perception (usefulness, ease of use, social influence, support systems, and confidence in using AI).

Research Objectives

General Objective

This study explores the perceptions and accountability of healthcare practitioners in adopting Artificial Intelligence (AI) across healthcare facilities in Bulacan. It focuses on their lived experiences related to accountability (ethics, errors, human autonomy, public dignity, trust, and bias) and perception (usefulness, ease of use, social influence, available support, and confidence in using AI).

Significance of the Study

This study benefits the following:

Healthcare Professionals – by providing insights into peer perceptions of AI, promoting acceptance, and improving patient care.

Local Government – by informing policies on AI adoption, accountability, privacy, and safety.

Future Researchers – by serving as a foundation for further studies on AI's impact on roles, relationships, and healthcare delivery.

Scope And Limitations of The Study

The following limitations are set in this study to help maintain its focus and direction.

Scope of the Study

This study focuses on hospitals in Bulacan, Philippines, targeting healthcare professionals such as doctors, nurses, and administrative staff. Using a qualitative approach through interviews or surveys, the study applies thematic analysis to identify key patterns and insights.

Limitations of the Study

This study has several limitations. Its findings may not be generalizable to healthcare workers outside Bulacan or to all healthcare facilities within the province. A small sample size and convenience sampling may lead to bias, as participants might not represent the broader population. Personal experiences and beliefs may also influence responses, introducing subjectivity. Lastly, time and budget constraints could limit data collection, follow-up interviews, and in-depth analysis.

II. METHODOLOGY

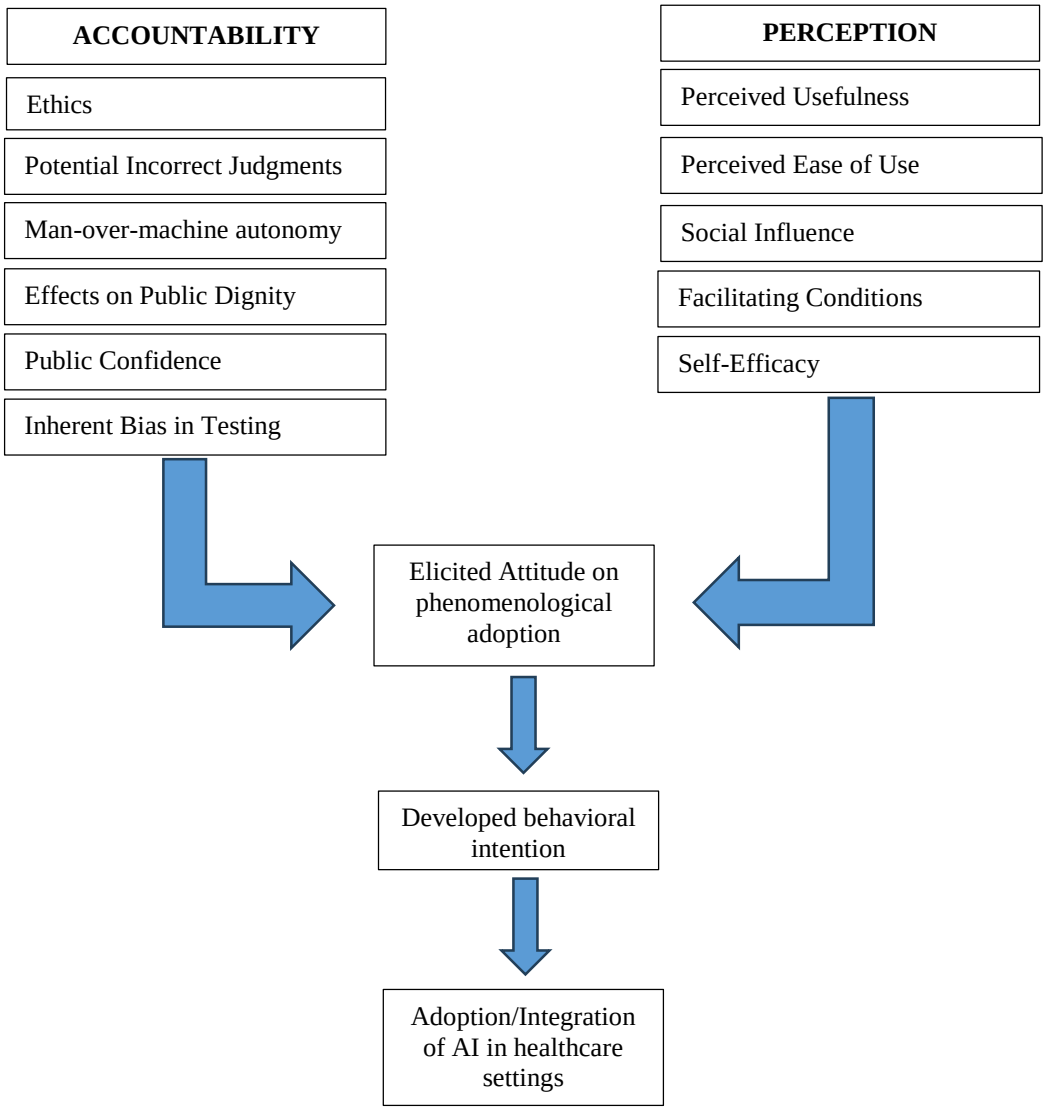
This chapter outlined the study's design, setting, participants, tools, data collection process, limitations, analysis, and ethical considerations.

Research Design

The study used a descriptive qualitative approach to examine healthcare workers' accountability and perceptions of AI in selected hospitals in Bulacan.

Sampling Design

Purposive sampling was used to select participants for interviews. This method ensured a diverse representation of healthcare roles and experiences, focusing on individuals with relevant knowledge and perspectives on AI in healthcare.



This study uses a descriptive qualitative research design to explore healthcare workers' accountability and perceptions of Artificial Intelligence (AI) in selected hospitals in Bulacan. A qualitative approach was chosen to gain in-depth insights into their experiences and beliefs.

Sampling Design

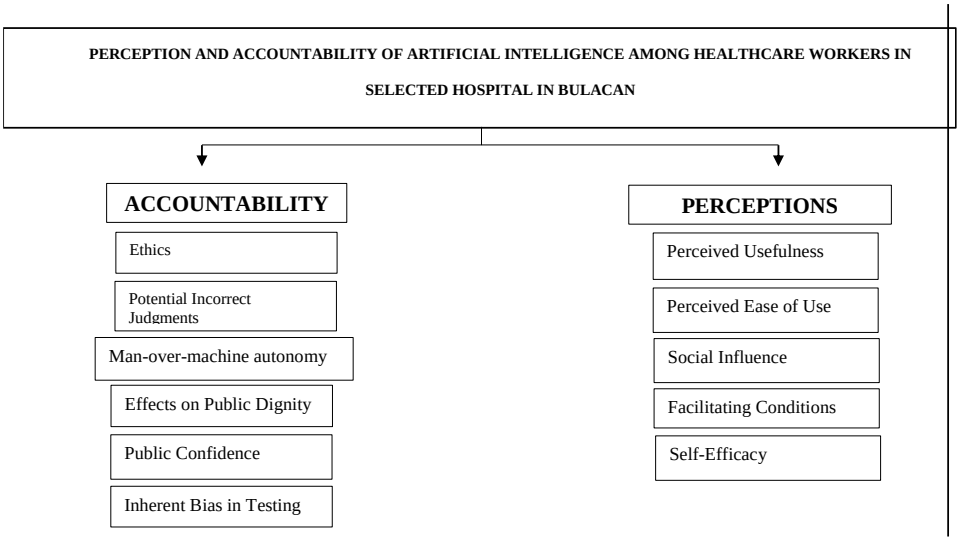
Purposive sampling was used to select participants from different healthcare roles and experience levels. This method ensured a diverse range of perspectives relevant to the study.

Scope of Methodology

The chapter outlines the study's design, setting, participant selection, instruments, data collection process, limitations, data analysis through thematic analysis, and ethical considerations.

III. DISCUSSION AND IMPLICATIONS OF THE STUDY

This study aims to understand the accountability of healthcare practitioners in the adoption of Artificial Intelligence (AI) among the selected healthcare facilities in the province of Bulacan.



1. What can you say about the accountability in the adoption/ integration of AI in selected healthcare facilities in Bulacan in terms of:

a. Ethics,

Table 1. Accountability in the Integration of AI in Selected Healthcare Facilities in Bulacan in terms of Ethics (n=20)

Major Themes	Subthemes	Codes	Significant Statements
Governance	Roles of stakeholders (government, hospitals, and private sectors) in AI integration.	Responsibility Oversight Compliance	**N6,N3,N9,N1,P2:** *"Malinaw dapat ang responsibilidad sa AI decisions. Walang tamang pamamahala, malaki ang risk ng pagkakamali."*
Ethical Standards	Addressing biases in AI algorithms and their impact on decision-making.	Ethical Guidelines Code of Conduct	**A2,P3,N2:** *"Kailangang malinaw ang line of responsibilities para sa mga desisyon ng AI."*
Transparency	Transparent reporting of errors or biases in AI systems.	Decision-Making Process Algorithm Transparency	**N8,N10,N4,P1:** *"Dapat clear ang lahat. Kailangang maunawaan kung paano gumagawa ng desisyon ang mga sistema ng AI upang mapagtibay ang tiwala at magamit nang tama ang mga ito."*
Training & Education	Upskilling professionals to integrate AI with clinical workflows.	Staff Training Ethical Awareness	**AH1,P4,T1:** *"Syempre dapat clear ang lahat. Kailangang maunawaan kung paano gumagawa ng desisyon ang mga sistema ng AI upang mapagtibay ang tiwala at magamit nang tama ang mga ito.."*
Regulation	Establishing legal frameworks for AI deployment in healthcare.	Legal Compliance Policy Implementation	**T2,A1,N5,AH2,N7:** *"Training the employees on ethical use of AI is important. Dapat maging mulat ang lahat sa mga posibleng panganib at benepisyo nito."*

This study highlights five key areas for responsible AI integration in Philippine healthcare: governance, ethics, transparency, training, and regulation. Effective AI adoption requires clear stakeholder roles, strong ethical guidelines, transparent processes, continuous upskilling of healthcare workers, and solid legal frameworks. These elements build trust, reduce risks, and improve healthcare outcomes. Stakeholders must work together to ensure AI is used ethically and effectively.

b. Potential Incorrect Judgment,

Table 2. Accountability in the Integration of AI in Selected Healthcare Facilities in Bulacan in terms of Potential Incorrect Judgments (n=20)

Major Themes	Subthemes	Codes	Significant Statements
Accuracy & Reliability	Monitoring system errors and false positives/negatives in clinical settings.	Errors Misdiagnosis Verification	**T2,N5,N10,P1,AH2:***"Kailangang napakataas ng antas ng consistency ng mga sistema ng AI. Ka si, kahit maliit na pagkakamali sa pagsusuri ay maaaring magdulot ng seryosong epekto sa mga pasyente."*
Liability	Sharing liability between healthcare professionals and AI developers.	Legal Responsibility Accountability for Mistakes	**N1,N2,N9,P4,T1,A1:***"Dapat may malinaw na guidelines kung sino ang responsable kapag ang sistema ng AI ay punalya, 'di po ba?. Kailangang malinaw ang legal na pananagutan."*
Oversight	Role of independent agencies in evaluating AI tools.	Monitoring Quality Control	**N8,N4,N6,A2,N7:** *"Napakahalaga ng regular na pagsubaybay sa mga sistema ng AI para agad na matukoy at maitama ang anumang posibleng problema.."*
Training and Education	Staff Preparedness Continuous Learning	Staff Preparedness Continuous Learning	***N3,P2:****"Kailangan ng tamang pagsasanay ang mga empleyado at healthcare givers para magamit nang maayos ang mga AI equipment at upang matukoy kaagad kung may mali."*
Ethical Standards	Ethical frameworks for integrating AI into sensitive clinical procedures.	Ethical Decision-Making Patient Safety	***P3,AH1:****"Ang mga guidelines sa ethics ay dapat na pangunahing i-consider sa integrasyon ng AI. Kailangang masigurado na hindi kailanman mapapahamak ang kaligtasan ng mga pasyente."*

The integration of AI in healthcare requires a balance of accuracy, liability, oversight, training, and ethical standards to ensure patient safety and effective use. Participants emphasized the need for high precision to avoid harmful errors, clear legal responsibility for AI-related issues, independent monitoring of AI tools, continuous staff training, and strong ethical guidelines. These elements work together to build trust, reduce risks, and improve healthcare outcomes. Future efforts should focus on strengthening policies, training, and monitoring systems for safer and more responsible AI use.

c. Man-Over-Machine Autonomy,

Table 3. Accountability in the Integration of AI in Selected Healthcare Facilities in Bulacan in terms of Man-Over-Machine Autonomy (n=20)

Major Themes	Subthemes	Codes	Significant Statements
Human Control	Oversight of AI Systems	Human Oversight Decision-Making Supervision	**N1,N2,N5,N10,A1:***"Ang AI ay dapat tumulong ngunit hindi pumalit sa desisyon ng mga tao. Kailangang magkaroon ng balanse kung saan ang tao aparin ang may kontrol sa mga desisyon."*
AI Limitations	Algorithm Bias	Dependence on AI Machine Errors AI Autonomy Limits	**AH2,N9,P1,T2:***"Kahit pa mabilis na ma-process ng AI ng mga data, wala itong kakayahan sa higher-order thinking at detalye na kayang dalhin ng tao sa isang sitwasyon. Hindi tayo maaaring lubos na umasa lamang sa mga machines."*
Training and Skills	AI Literacy	Human Expertise Training Requirements Skills Enhancement	**N3,T1,P2:***"Kailangan ng patuloy na trainings ng mga gagamit nito sa about health para manatiling nauuna sa mga development pa rin ng AI at masigurong effective nilang mababantayan ang mga AI na gagamitin nila sa mga pasyente nila."*
Ethical Implications	Equity in Care	Ethical Decision-Making Responsibility Patient Safety	**P4,N8,N4,AH1,N6,A2,N7,P3:***"Ang pagsunod pa rin sa ethical standards ang dapat gumabay sa paggamit ng AI sa pangangalagang pangkalusugan. Mahalagang may pangangasiwa ng tao upang mapanatili ang mga guidelines na 'to."*

The integration of AI in healthcare highlights the importance of human control, AI limitations, training, and ethical standards. Participants stressed that AI should support—not replace—human decision-making, with awareness of its limitations like algorithm bias and lack of context. Continuous training is essential to ensure healthcare professionals can use AI effectively and safely. Ethical standards must guide AI use to ensure fairness and protect patient rights. Overall, a human-centered approach, backed by proper oversight and training, is key to safe and inclusive AI adoption in healthcare.

d. Effects on Public Dignity,

Table 4. Accountability in the Integration of AI in Selected Healthcare Facilities in Bulacan in terms of Effects on Public Dignity (n=20)

Major Themes	**Subthemes**	**Codes**	**Significant Statements**
Patient Respect & Rights	Patient Autonomy	Respect Patient Rights Human Dignity	**N5,N9,N3,N4,N10,N8,A2:***"Importanteng sinusunod pa rin ang mga karapatan ng pasyente at mapanatili ang kanilang human dignity. Kailangang masigurado natin na ang mga technologies na ito ay hindi maka-apekto sa pagkatao ng mga pasyente."*
Privacy Concerns	Data Security	Privacy Confidentiality Data Security	**N7,AH2,T2,P1:***"Ang privacy ng pasyente ay isang mahalagang usapin kaugnay ng AI. Kailangang masiguro na ang datos ng pasyente ay ligtas at kumpidensyal upang mapanatili ang tiwala ng publiko."*
Trust in Technology	Reliability and Accuracy	Trust Reliability Patient Confidence	**AH1,P3,P4,N6:***"Kailangang magtiwala ang mga pasyente na ang AI innovations ay maaasahan at hindi makokompromiso ang kanilang health. Mahalagang mabuo ang tiwalang ito para sa successful integration!"*
Ethical Standards	Equity in Access	Ethical Treatment Fairness Equity	**A1,T1,N1,P2,N2:***"Ofcourse, dapat solid ang ethics sa paggamit ng AI. Kailangang masiguro natin na ang mga outcomes nito ay patas at makatarungan sa lahat ng mga pasyente."*

The integration of AI in healthcare must balance innovation with core ethical values. Key themes include respect for patient autonomy, privacy and data security, trust in technology, and equity in access. Participants emphasized the need to protect patient rights and dignity, ensure confidential handling of health data, build trust through reliable AI systems, and guarantee fair access to AI benefits. These insights highlight that successful AI adoption requires human-centered, ethical practices that uphold patient values and prevent inequality in care.

e. Public Confidence

Table 5. Accountability in the Integration of AI in Selected Healthcare Facilities in Bulacan in terms of Public Confidence (N=20)

Major Themes	**Subthemes**	**Codes**	**Significant Statements**
Trust and Credibility	Consistency in Results	Trust Credibility Reliability	**N5,N7,N9:***"Napakahalaga ng tiwala sa paggamit ng AI para sa health needs. Kung walang tiwala ang mga pasyente at mga hospital workers sa AI, magiging mahirap ang integration."*
Transparency	Algorithm Design Transparency	Transparency Openness Communication	**AH2,N8,N3,T2,P1:***"Mahalaga ang pagiging bukas at malinaw sa integration ng AI sa hospital natin. Kailangang maunawaan ng mga tao kung paano gumagawa ng decisions ang AI at masiguro na ang mga prosesong ito is very fair at madaling maunawaan.."*
Security	Data Protection	Data Security Privacy Confidentiality	**N1,N10,A1NT1,N2,P2:***"Ang data security ay isang mahalagang topic tungkol sa AI. Kapag full ang privacy at confidentiality ng pasyente ay mapanatili ang tiwala ng publiko."*
Performance	Efficiency Gains	Effectiveness Efficiency Accuracy	**P3,N4,A2,AH1,P4,N6:***"Kailangang maging epektibo at tumpak ang AI sa mga data. Mahirap na. Kapag nakita ng mga tao na mahusay ang trabaho AI, naturally, talagang mababuo ang kanilang tiwala sa paggamit nito."*

The integration of AI in healthcare depends on trust, transparency, security, and performance. Trust is built through consistent and reliable results, while transparency in how AI makes decisions promotes fairness and accountability. Strong data security protects patient privacy and upholds public confidence. High performance through accurate and efficient systems drives user acceptance. Together, these elements ensure ethical and effective AI adoption in healthcare.

f. Inherent Biases in Testing

Table 6. Accountability in the Integration of AI in Selected Healthcare Facilities in Bulacan in terms of Inherent Biases in Testing (n=20)

Major Themes	Subthemes	Codes	Significant Statements
Bias Mitigation	Identifying Sources of Bias	Fairness Equity Non-Discrimination	**P3,AH2,T2,N8,N3:***"Napakahalagang i-address ng research nyo po ang reliability ng AI para masiguro ang fair and equal na treatments para sa lahat ng pasyente. Kailangang magpatupad ng mahigpit na hakbang upang maiwasan ang diskriminasyon."*
Accuracy	Validation Against Standards	Accuracy Validity Reliability	**N4,P1:***"Mahalaga ang accuracy sa datos ng AI. Kailangang masiguro natin na ang AI ay nagbibigay ng wastong at maaasahang resulta nang walang biases"*
Data Representation	Data Diversity	Sample Diversity Inclusivity	**N5,N7,N10,N2,P2,T1:***"Ang data na ginagamit sa paggamit ng AI ay kailangang maging iba-iba at inclusive. For example... AI should embody everything, nakakatakot kasing maulit ang mga biases sa mga resulta."*
Algorithm Transparency	Open Access to Methodology	Algorithm Design Explainability Transparency	**A2,P4,AH1,N1,A1,N9,N6:***"Importante kasi ang openness sa mga algorithm ng AI. Kailangang malaman natin kung paano designes ang mga systems na ito at kung paano sila gumagawa ng sound decisions para matukoy at maitama ang possible biases."*

To effectively implement AI in healthcare, key issues like bias mitigation, accuracy, data diversity, and algorithm transparency must be addressed. Eliminating bias ensures fair treatment, while validating AI against standards guarantees reliability. Using diverse datasets improves accuracy across populations, and transparent algorithms build trust and accountability. Together, these factors support ethical and equitable AI adoption in healthcare.

2. What is your perception about the adoption/ integration of AI in selected healthcare facilities in Bulacan in terms of ("*Ano ang iyong pananaw tungkol sa pag-aangkop o integrasyon ng AI sa mga piling pasilidad pangkalusugan sa Bulacan sa aspeto ng*"):

a. Perceived Usefulness,

Table 7. Perception in the Integration of AI in Selected Healthcare Facilities in Bulacan in terms of Perceived Usefulness (n=20)

Major Themes	Subthemes	Codes	Significant Statements
Operational Efficiency	Resource Optimization	Efficiency Time-Saving Cost-Effective	**N5,N2,N8,A1:***"Malaki ang naiaambag ng AI sa pagpapabuti ng effectiveness ng aming clinical operations. Nakatitipid ito ng oras at nagpapababa ng costs which is very important sa toxic environment ng department. Alam nyo naman po siguro 'yan, Maam. Right?"*
Accuracy & Reliability	Diagnostic Precision	Accuracy Reliability Precision	**T2,N3,AH2:***"Notice-able din naman kasi ang precision at pagiging maaasahan ng mga AI. Nagbibigay ito ng absolute na mga results, which, I think, is very importnant sa paggawa ng tamang desisyon sa health society."*
Patient Outcomes	Improved Diagnosis and Treatment Plans	Improved Patient Care Better Diagnosis Faster Treatment	**P4,A2,N1,AH1,N9,N6:***"I believe, mas pinapaganda ng AI ang mga resulta ng pasyente through correct diagnosis at mas mabilis na mga paggamot. Isa itong mahalagang advantage para sa pagpapabuti ng pangangalaga sa pasyente."*
Support for Healthcare Providers	Decision Support	Helpful Assistance Reduced Workload	**P1,P2, P3, N7,N4,N10,T1:***"Sa totoo lang, big help ang AI para sa mga doctors at nurses. Binabawasan kasi nito ang workload at nagbibigay ng kinakailangang additional support during duties. We can work smartly because of these!"*

AI is transforming healthcare by improving operational efficiency, diagnostic accuracy, patient outcomes, and support for providers. It helps optimize resources, reduce costs, and automate tasks, easing workloads. AI tools offer precise diagnostics and personalized treatments, leading to faster and more effective care. While challenges like bias and data security remain, investing in training and collaboration is key to maximizing AI's benefits in real-world clinical settings.

b. Perceived Ease of Use,

Table 8. Perception in the Integration of AI in Selected Healthcare Facilities in Bulacan in terms of Perceived Ease of Use (n=20)

Major Themes	Subthemes	Codes	Significant Statements
Usability	Ease of Integration	User-Friendly	**N8,N2,AH2,P1,N7,P3,N4:** *"Ang system ng AI na ginagamit namin ngayon ay napaka-user-friendly at madaling maunawaan. Pinapadali nito ang aming trabaho dahil madali itong i-navigate at intindihin."*
		Intuitive	
		Easy to Navigate	
Learning Curve	Ease of Onboarding	Easy to Learn	**N3,N5,A1,P4,N1,A2:***"Ang pag-aaral kung paano gamitin ang AI ay smooth at diretso lang. Hindi ito masyadong nagtagal para ma-gets, though ang ilan sa aking mga kasamahan ay nangailangan ng additional trainings. Pero, apaka-dali lang talaga.."*
		Requires Training	
		Time Consuming to Understand	
Support Resources	Technical Support	Accessible	**T1,T2,AH1,N10,P2,N9:***"Ang pagkakaroon technical support at mga mapagkukunan ng relevant upskills is talagang helpful para ma-integrate si AI sa system. Mahalagang magkaroon ng ganitong mga sources."*
		Requires Technical Support	
		Availability of Training Resources	
User Experience	Feedback Mechanisms	Positive User Experience	**N6:***"Ang experience ko (sa AI) ay generally positibo po. Sobrang user-friendly at madaling maunawaan, bagamat may mga pagkakataong nagkakaroon ng glitches na nakakapagpagalit minsan. Pero nasusundan naman so no problem."*
		Negative User Experience	

The adoption of AI in healthcare depends on usability, learning support, and user experience. User-friendly systems make integration smoother and reduce resistance, though some staff may still require extra training. Accessible technical support and continuous training are essential for successful implementation. User experience, including reliable systems and feedback mechanisms, also plays a key role in long-term satisfaction. To maximize AI's potential, healthcare organizations must provide adaptive training, responsive tech support, and regularly improve systems based on user feedback.

c. Social Influence,

Table 9. Perception in the Integration of AI in Selected Healthcare Facilities in Bulacan in terms of Social Influence (n=20)

Major Themes	Subthemes	Codes	Significant Statements
Interpersonal Influence	Peer Encouragement	Peer Pressure	**T1,N5,N10,T2,P3:***"Sinimulan kong gamitin ang AI sa trabaho ko kasi nirecommend ito ng ilan sa aking mga colleagues at pinuri nila ang mga benepisyo nito."*
		Colleague Recommendations	
		Word of Mouth	
Organizational Influence	Leadership Support	Management Support	**AH2,P4,N2,N3,N8,P1,A1,N1:***"Napaka-suportado ng aming heads at admin sa paggamit ng AI. Nagbibigay sila ng kinakailangang naming mga mapagkukunan at inencourage kami na gamitin ang AI tools sa trabahao."*
		Organizational Culture	
		Leadership Advocacy	
Social Acceptance	Cultural Norms	Perceived Norms	**P2,N4,N7,AH1:***"Halos naman lahat tanggap ang paggamit ng AI sa aming ospital. Karamihan sa aking mga kasamahan ay sumusuporta, kaya't mas madali itong yakapin (ang teknolohiya)."*
		General Acceptance	
		Social Encouragement	
External Influence	Technological Trends	Industry Trends	**N9,A2,N6***"Ang pakikiuso sa mga trends sa industriya at ang pakikinig tungkol sa mga pag-unlad ng AI mula sa akingexperts na network ang nag-udyok sa akin na tanggapin ang mga teknolohiyang ito. Not bad naman siguro 'yun."*
		Professional Networks	
		Regulatory Environment	

The successful adoption of AI in healthcare depends on a mix of interpersonal, organizational, social, and external influences. Peer encouragement and leadership support boost confidence and motivation to use AI. Supportive cultural norms within healthcare settings help normalize adoption, while staying updated with industry trends and expert insights encourages acceptance. To ensure seamless integration, organizations must foster peer networks, provide strong leadership backing, promote a culture open to innovation, and keep professionals informed on technological trends.

d. Facilitating Conditions,

Table 10. Perception in the Integration of AI in Selected Healthcare Facilities in Bulacan in terms of Facilitating Conditions (n=20)

Major Themes	**Subthemes**	**Codes**	**Significant Statements**
Technical Infrastructure	Hardware Requirements	Infrastructure	**T1,A1,N8,P1,N2:***"Mahalagang magkaroon ng matatag na technical infrastructure for AI-integration, Maam. Kailangan natin ng maaasahang mga IT systems at sapat na mapagkukunan for additional support ang mga technical perks na 'to."*
		Resource Availability	
		IT Systems	
Training and Support	Mentorship Opportunities	Training Programs	**N9,N10,N1,AH2:***"Napakahalaga na magkaroon ng mga programa sa training-workshops at tuluy-tuloy na teknikal na suporta. Kailang handang-handa ang mga manggagawang siyempre upang magamit nang epektibo ang mga AI."*
		Technical Support	
		User Guidance	
Policies and Procedures	Regulatory Compliance	Organizational Policies	**N3,A2,N5,N6,P3:***"Having a clear policies ng organisasyon at mga pamantayan na pamamaraan ay nakatutulong sa maayos na pagpapatupad (ng AI.)"*
		Implementation Procedures	
		Compliance Requirements	
Accessibility	Digital Inclusion	Access to Information	**P4,N4,T2,P2,AH1,N7:***"Mahalagang may access sa impormasyon at kinakailangang mga kagamitan. Kung walang madaling access, nagiging mahirap ang integrasyon ng AI sa aming pang-araw-araw na gawain.."*
		Availability of Tools	
		User Accessibility	

The successful integration of AI in healthcare relies on four key factors: strong technical infrastructure, continuous training and mentorship, clear regulatory policies, and digital inclusion. Reliable hardware and IT systems are essential for AI to function effectively. Ongoing support and tailored training help staff confidently use AI tools. Clear organizational policies ensure ethical and legal compliance, while accessible resources and digital literacy programs make AI use equitable for all. Together, these elements create a foundation for efficient, inclusive, and sustainable AI adoption in healthcare.

e. Self-Efficacy

Table 11. Perception in the Integration of AI in Selected Healthcare Facilities in Bulacan in terms of Self-Efficacy (n=20)

Major Themes	**Subthemes**	**Codes**	**Significant Statements**
Self-Confidence	Perceived Competence	Confidence	**N4,N7,T2,P1,P4,P2,A1,T1:***"Kumpiyansa naman ako sa aking kakayahan naming gumamit ng AI. Constant practice ang nagbigay sa akin ng kinakailangang mga kasanayan.."*
		Ability	
		Competence	
Training & Learning	Initial Skill Development	Skills	**N2,A2,N1,AH1,N3,N8,N5:***"Napakahalaga ng tuluy-tuloy na trainings at advancements Kailangan namin ng regular na mga update at workshop para manatiling updated sa paggamit ng AI."*
		Learning	
		Training Programs	
Support & Resources	Financial Support	Support	**N9,N10:***"Technical access na suporta at mga mapagkukunan are both improtant. Kasi po nakapagpapalakas ng kumpiyansa na malaman na may tulong na maaasahan kapag kinakailangan."*
		Resources	
		Guidance	
Barriers to Self-Efficacy	Psychological Resistance	Lacking Confidence	**AH2,P3,N6:***"Minsan, nakakaramdam ako ng kaba sa paggamit ng AI. Ang takot na magkamali ay maaaring maging lubos na nakakapanghina."*
		Anxiety	
		Challenges	

The effective use of AI in healthcare depends on the self-efficacy of its users, shaped by confidence, training, support, and mindset. Confidence, built through practice, helps professionals use AI effectively. Continuous learning through workshops and updates enhances skills. Access to technical and financial support boosts adoption, while addressing psychological barriers like fear of failure is crucial. To build self-efficacy, organizations must provide training, support, and a safe learning environment. This empowers healthcare workers to confidently use AI, improving patient care and system efficiency.

Summary of Findings

Conclusion

AI adoption in Bulacan healthcare facilities is shaped by multiple factors: perceived usefulness, ease of use, training, support, ethical concerns, and leadership. Addressing these can help build trust, improve care, and ensure human-centered use of AI.

Technical Infrastructure and Accessibility

AI needs reliable systems and hardware, but resource gaps hinder access. Equal access is crucial for widespread adoption.

Training and Support

Ongoing training and technical support build user confidence and reduce resistance to AI.

Ethical and Transparent Practices

Fairness, transparency, data privacy, and regulatory compliance are key to responsible AI use.

Usability and User Experience

Simple, intuitive systems enhance satisfaction and increase AI adoption among users.

Interpersonal and Organizational Influence

Supportive leadership and peer influence encourage healthcare providers to embrace AI tools.

Individual Factors and Self-Efficacy

Confidence in using AI grows with training, though fear and anxiety must be addressed.

Operational Efficiency and Patient Outcomes

AI improves diagnostics, reduces workload, and enhances care delivery.

General Implications

A holistic approach addressing technical, ethical, and cultural factors is necessary for sustainable AI integration.

Recommendations

Patients

Educate patients on AI benefits and involve them in system evaluation for better understanding and trust.

Healthcare Providers

Offer ongoing training, peer mentoring, and involve providers in AI development to fit clinical needs.

AI Specialists

Design transparent, user-friendly, and inclusive systems with regular updates and technical support.

Hospital Administrators

Invest in infrastructure, set ethical policies, and promote a culture of innovation and openness.

Philippine Senate

Enact laws ensuring ethical AI use, data privacy, and equitable access nationwide.

LGU in Bulacan

Support AI through infrastructure funding, community training, and local innovation partnerships.

Legislators and Local Policymakers

Establish regulatory frameworks prioritizing patient safety, privacy, and alignment with global standards.

Future Innovation Researchers

Study AI's long-term effects, especially on marginalized groups, and develop localized solutions.

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