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Bridging the Communication Chasm: Clinician Perspectives on AI-Augmented Patient Interactions in Kenyan Oncology - A Qualitative Study Highlighting Ethical and Empathetic Implementation Frameworks

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Abstract

Abstract

This study examines the potential of artificial intelligence (AI) to improve doctor-patient communication in resource-constrained public oncology settings in Kenya, addressing critical communication barriers that impact treatment outcomes and patient satisfaction. A qualitative exploratory study was conducted in three public oncology facilities in Nairobi County, employing semi-structured in-depth interviews with 10 clinical officers and physicians. Data were analysed using thematic analysis with NVivo 12 software to identify patterns and themes related to communication challenges and the potential for AI integration. Three major themes emerged from the analysis: significant communication barriers, including the complexity of technical language, time constraints, and cultural mismatches; high clinician interest in AI communication tools despite limited current awareness; and critical requirements for the ethical implementation of AI systems, including the need for explainable AI, cultural adaptation, and preservation of human empathy. A majority of participants (8 out of 10) identified technical language barriers as the most significant challenge, while all participants (10 out of 10) expressed high interest in AI applications such as medical jargon translation, patient distress detection, and real-time conversational support. This study provides the first empirical evidence for a clinician-endorsed, empathy-centric framework for AI integration in resource-constrained settings, positioning AI not as a replacement but as a tool for augmenting human connection. The core conceptual contribution demonstrates AI as an "empathy enhancer" that addresses systemic communication barriers while preserving the relational aspects of healthcare. The findings provide a culturally appropriate, phased implementation framework for AI communication tools in African healthcare contexts, emphasising comprehensive training and ethical oversight. AI-augmented communication has the potential to improve health outcomes, reduce healthcare disparities, and enhance patient satisfaction in resource-constrained settings, directly supporting Kenya's UHC goals by addressing a key social determinant of health: communication. This study offers crucial insights for the development of healthcare technology in similar resource-constrained environments.

Keywords: *Artificial intelligence; healthcare communication; doctor-patient interaction; oncology; public health; natural language processing.*

Introduction

Healthcare communication is a key factor in treatment success, patient satisfaction, and health outcomes worldwide. The quality of doctor-patient interactions greatly affects treatment adherence, psychological well-being, and overall healthcare effectiveness (Jerfy et al., 2024). In healthcare systems with limited resources, particularly in sub-Saharan Africa, communication challenges are worsened by factors such as restricted consultation time, language barriers, cultural differences, and high patient volumes (Aboye et al., 2024). These issues are particularly severe in oncology settings, where complex medical information needs to be communicated to patients facing life-threatening diagnoses.

Kenya faces a significant cancer burden, with over 47,000 new cases each year, overwhelming public oncology facilities (Stefan, 2015). The healthcare system struggles because of inadequate infrastructure, a shortage of skilled healthcare workers, and limited financial resources, which create major barriers to effective cancer care (Harsch et al., 2025). Poor communication between healthcare providers and patients has been identified as a key factor in late presentation, misdiagnosis, treatment interruptions, and poor health outcomes (Ragan et al., 2018). The complexity of cancer diagnosis and treatment, along with cultural beliefs about illness and death, adds further communication challenges that require innovative solutions.

Recent developments in artificial intelligence, especially natural language processing (NLP), create unprecedented opportunities to address communication issues in healthcare settings. AI tools in healthcare have expanded from diagnostic imaging to enhancing communication, with research demonstrating improved doctor-patient interactions through AI-supported messaging and conversational assistance (Tai-Seale et al., 2024). The global AI healthcare market, valued at $184 billion in 2024 and projected to reach $826 billion by 2030, reflects the growing recognition of AI's transformative impact on healthcare services (Docus AI, 2025). These advancements offer hope for overcoming communication barriers that hinder effective cancer care in resource-limited environments.

However, the transferability of AI tools from high-resource Western settings to complex, diverse health systems like Kenya's remains uncertain. This study addresses not only an evidence gap but also a contextual and translational one by examining the prerequisites for feasible, acceptable, and ethical AI implementation from the viewpoint of frontline clinicians. Most existing research focuses on developed countries with strong technological infrastructure and similar populations, leaving a significant knowledge gap about AI deployment in diverse, resource-limited environments. The unique challenges faced by African healthcare systems, including linguistic diversity, varying health beliefs, and infrastructural limitations, require context-specific approaches to AI adoption.

The research contributes to the expanding body of literature on digital health in Africa, offering practical insights for developing healthcare technology in similar settings. By exploring both the opportunities and challenges linked to AI integration, this study provides evidence-based recommendations for improving doctor-patient communication through ethical and culturally sensitive AI frameworks. Understanding clinicians' perspectives is vital for successful technology adoption, as healthcare providers are the main gatekeepers for new clinical technologies and have deep experiential knowledge of communication challenges within their systems.

Therefore, this study asks: What are clinicians' perspectives on AI-augmented communication in Kenyan public oncology settings, and what frameworks are needed for ethical and empathetic implementation**?**

Literature Review

AI in Healthcare Communication

The integration of artificial intelligence in healthcare communication has gained significant momentum in recent years. Longhurst et al. (2024) demonstrated that AI-generated physician responses improved communication quality, efficiency, and patient engagement while reducing physician workload. Their randomised controlled trial showed that AI-assisted messaging resulted in more empathetic and comprehensive patient responses compared to traditional physician communications. This evidence suggests that AI can enhance, rather than diminish, the human elements of healthcare interactions.

Natural language processing technologies have emerged as particularly promising tools for enhancing healthcare communication. Verlingue et al. (2024) highlighted that a majority of hospital medical content exists in narrative format, making NLP one of the most dynamic research fields for developing clinical decision support tools. Large language models have achieved unprecedented performance in answering medical questions, with applications including prognosis estimation, treatment recommendations, and patient education. These advances offer significant potential for addressing the communication challenges prevalent in oncology care.

Recent studies have shown the potential of AI to improve patient understanding of complex medical information. Jerfy et al. (2024) noted that NLP-driven tools, such as ChatGPT, can simplify imaging reports and medical documents without disrupting clinical workflows. These applications have been successfully utilised for identifying critical findings, categorising oncologic responses, and providing follow-up advice. The ability to translate complex medical information into patient-friendly language marks a significant advance for healthcare communication.

However, implementation challenges remain significant. Zhang et al. (2025) emphasised the importance of addressing data bias, model transparency, and accountability in AI healthcare applications. Gender and cultural biases in large language models can result in discriminatory outputs, particularly affecting marginalised populations. These concerns are particularly relevant in diverse healthcare settings, where equity and cultural sensitivity are of paramount importance. Ensuring AI systems are both effective and ethically sound requires careful consideration of implementation frameworks and oversight mechanisms.

Healthcare Communication Challenges in Africa

Healthcare communication in African settings faces unique challenges related to linguistic diversity, cultural beliefs, and resource limitations. A scoping review by DeBoer et al. (2025) identified significant communication barriers in African cancer care environments, including language difficulties, cultural misunderstandings, and insufficient training in communication skills among healthcare professionals. These issues are further exacerbated by the stigma linked to cancer diagnosis and the limited availability of patient education resources in local languages.

In Kenya, specifically, Ragan et al. (2018) identified poor provider-to-patient communication as one of seven major barriers to accessing cancer testing and treatment. Their study revealed that communication challenges contribute to late presentation, misdiagnosis, and treatment abandonment. The lack of culturally appropriate patient education materials and communication strategies further exacerbates these problems. Healthcare providers often struggle to balance the need for clear medical communication with respect for cultural beliefs and practices regarding illness and death.

Research from South Africa's Limpopo Province highlighted similar challenges, with healthcare professionals reporting inadequate communication among team members and between providers and patients (Author et al., 2023). The study emphasised the need for improved interprofessional collaboration and communication to address the psychosocial care needs of cancer patients. These findings underscore the widespread nature of communication challenges in African healthcare settings and the potential for technological solutions to tackle these issues.

Digital Health Adoption in African Healthcare

Digital health adoption in Africa remains in its early stages, despite significant potential. A comprehensive review by Kouamou et al. (2021) found that digital health interventions in African oncology are mostly isolated pilots with limited features, utilising simple technologies. Evaluations typically focus on structural measures, such as acceptability and ease of use, rather than clinical outcomes. This limitation underscores the need for more comprehensive research that examines both the feasibility of implementation and clinical effectiveness.

Barriers to implementing digital health in African settings include initial and ongoing costs, resistance from clinical staff, and a poor alignment between electronic health systems and clinical workflows (Aboye et al., 2024). Despite these obstacles, there are opportunities for successful integration through user-centred design and stakeholder engagement. Involving healthcare providers in the design and implementation process is essential to ensure digital health solutions address the practical needs of clinical practice.

The COVID-19 pandemic has sped up digital health adoption across Africa, creating new opportunities for innovative communication technologies. However, successful implementation requires addressing infrastructure challenges, ensuring cultural relevance, and building local capacity for technology management and maintenance. The lessons learned from pandemic-driven digital health initiatives offer valuable insights for deploying AI communication tools in African healthcare contexts.

Theoretical Perspectives on Technology Implementation

The Nonadoption, Abandonment, Scale-up, Spread, and Sustainability (NASSS) framework offers a comprehensive lens for understanding the complex implementation of technology in healthcare settings (Greenhalgh et al., 2017). This framework examines seven domains: the condition, the technology, the value proposition, the adopters, the organisation, the wider system, and embedding and adaptation over time. The NASSS framework recognises that healthcare technology implementation is inherently complex and requires consideration of multiple interacting factors.

This study explores several of these domains, particularly the adopters (clinician perspectives), the technology (AI communication tools), and the value proposition (enhanced empathetic care), within the specific context of Kenya's public healthcare ecosystem. Understanding how

frontline clinicians perceive and conceptualise AI integration is crucial for successful implementation, as their attitudes and experiences will significantly influence adoption patterns. The value proposition domain is particularly relevant in resource-constrained settings, where competing priorities require a clear demonstration of benefit for successful implementation.

Methodology

Research Design

This study employed a qualitative exploratory design to investigate clinicians' perspectives on AI-augmented communication in public oncology settings. The qualitative approach was selected to capture the nuanced experiences, attitudes, and concerns of healthcare providers regarding the integration of AI into patient communication. An exploratory design was especially suitable given the limited existing research on AI communication tools within African healthcare contexts.

Setting and Participants

The study was carried out in three public oncology facilities in Nairobi County, Kenya, chosen for their representativeness of public cancer care in the region. Frontline clinicians were selected as the initial expert informants because they are the main gatekeepers for adopting new clinical technologies and have extensive experiential knowledge of communication challenges within the system. Purposive sampling was used to recruit 10 participants, including clinical officers and physicians directly involved in oncology patient care.

Inclusion criteria included: (1) current employment in oncology services at a public facility; (2) minimum one year of experience in cancer patient care; (3) direct involvement in patient consultation and communication; and (4) willingness to participate voluntarily in the study. Exclusion criteria included healthcare providers working primarily in administrative roles without direct patient contact and those with less than one year of experience in oncology.

Data Collection

Data collection was carried out through semi-structured in-depth interviews lasting 45-60 minutes between March and May 2024. The lengthy duration was necessary to give participants enough time to reflect on complex topics related to AI integration while ensuring a thorough exploration of their perspectives and experiences. A carefully crafted interview guide was developed based on comprehensive literature review and consultation with healthcare communication experts, covering five key thematic areas.

The first area explored current communication challenges, with questions such as "Can you describe a typical patient consultation and the communication difficulties you encounter?" and "What factors make it challenging to explain complex medical information to patients?" The second area examined participants' experiences with technology in healthcare, including questions like "What technological tools do you currently use in patient care?" and "How has technology changed your practice over the years?" The third area assessed awareness of AI applications through questions such as "What do you know about artificial intelligence in healthcare?" and "Have you encountered any AI tools in your clinical practice?"

The fourth thematic area explored perspectives on AI integration by using hypothetical scenarios to gather responses. For instance, participants were shown scenarios such as "Imagine

you had an AI tool that could translate medical jargon into simple language during patient consultations. How would this affect your practice?" and "What would be your concerns about using AI to help communicate with patients?" The final section addressed ethical considerations through questions like "What ethical issues do you see with AI in healthcare communication?" and "How can we ensure AI enhances rather than replaces human empathy in patient care?"

All interviews were conducted in English, as this is the primary language of medical practice in Kenya's public healthcare system, ensuring consistency and avoiding translation bias. Each interview was audio-recorded using digital recording equipment with participant consent, and backup recordings were maintained to prevent data loss. Interviews were conducted in private settings within the healthcare facilities to ensure confidentiality and minimise interruptions. Detailed field notes were maintained throughout each interview to capture contextual information, non-verbal observations, emotional responses, and environmental factors that could influence responses.

Data Analysis

A thorough thematic analysis was conducted using NVivo 12 software, following Braun and Clarke's well-established six-phase framework, which provides a systematic method for identifying, analysing, and reporting patterns within qualitative data. **Figure 1** illustrates the comprehensive six-phase thematic analysis process employed in this study, showing the progression from data familiarization through theme development to final reporting, along with the quality assurance measures implemented throughout the analytical process.

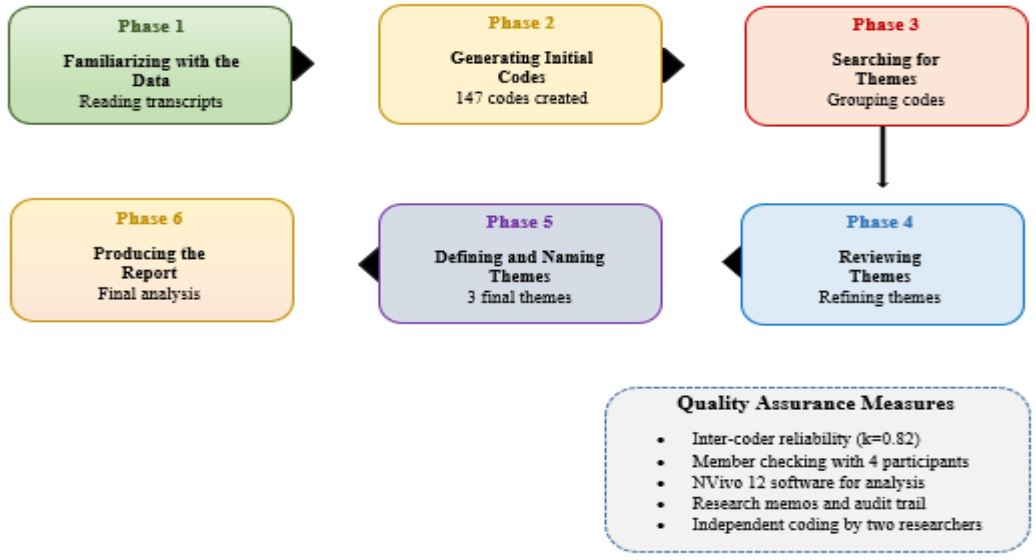
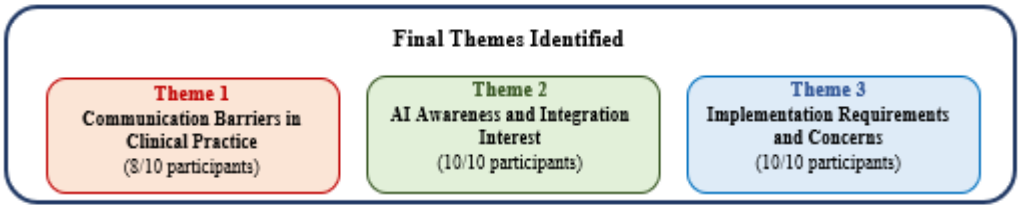


Figure 1: Six-Phase Thematic Analysis Process (Braun & Clarke's Framework)



The six-phase process commenced with familiarisation with the data through repeated reading and active engagement with the content. All interview recordings were transcribed verbatim by professional transcribers. The principal investigator then read each transcript multiple times, listening to the audio recordings, to ensure accuracy and immersion in the data. During this phase, initial impressions and potential patterns were noted in research memos, creating an audit trail of analytical decisions.

The second phase involved generating initial codes through systematic line-by-line analysis of the data. Using NVivo 12's coding functionality, meaningful segments of text were identified and labelled with descriptive codes such as "time pressure," "language barriers," "cultural sensitivity," "AI enthusiasm," and "ethical concerns." This process was conducted inductively, allowing codes to emerge from the data rather than imposing preconceived categories. A total of 147 initial codes were generated across all transcripts, providing a comprehensive mapping of participant perspectives.

The third phase focused on searching for themes by examining codes for patterns and relationships. Related codes were grouped together using NVivo's visualisation tools, including mind maps and coding matrices, to identify potential themes. For example, codes related to "technical language," "patient confusion," and "explanation difficulties" were grouped under a broader theme of "communication barriers." This process involved iterative refinement as themes were developed, merged, or discarded based on their prevalence and significance within the dataset.

The fourth phase involved reviewing and refining themes to ensure they accurately represented the data and formed a coherent pattern. This process included checking themes against coded extracts and the entire dataset to ensure internal homogeneity (coherence within themes) and external heterogeneity (clear distinctions between themes). Some initial themes were subdivided, while others were merged or eliminated. For instance, initial separate themes of "AI scepticism" and "implementation concerns" were merged into a broader theme of "requirements and concerns."

The fifth phase focused on defining and naming themes, developing clear definitions and scope for each. Detailed descriptions were written to capture the essence of each theme and its sub-themes. The final themes were: (1) Communication barriers in clinical practice, (2) AI awareness and interest in integration, and (3) Implementation requirements and concerns. Each theme was supported by rich descriptive data and representative quotes that illustrated the range and depth of participant perspectives.

The sixth phase involved producing the final analytical report, weaving together the analytical narrative with vivid data extracts to tell the story of the data in relation to the research questions. This process involved selecting the most compelling examples that illustrated each theme while ensuring representation across all participants and healthcare settings.

To ensure analytical rigour and credibility, inter-coder reliability was demonstrated through independent coding of 20% of randomly selected transcripts by two experienced qualitative researchers. Initial coding agreement was 78%, with discrepancies resolved through discussion and consensus. The final Cohen's kappa coefficient of 0.82 indicated substantial inter-coder agreement, confirming the reliability of the coding framework. Additionally, member checking was conducted with four participants who volunteered to review the preliminary findings, confirming the accuracy and resonance of the analytical interpretation with their own experiences.

Ethical Considerations

Ethical approval was obtained from the Institutional Review Board and the National Commission for Science, Technology and Innovation. All participants provided written informed consent, and confidentiality was maintained through anonymisation of data and secure storage procedures. The study posed minimal risks to participants, and all data were handled in accordance with established ethical guidelines for qualitative research.

Findings

The thematic analysis revealed three major themes that illuminate clinician perspectives on AI-augmented communication in Kenyan oncology settings.

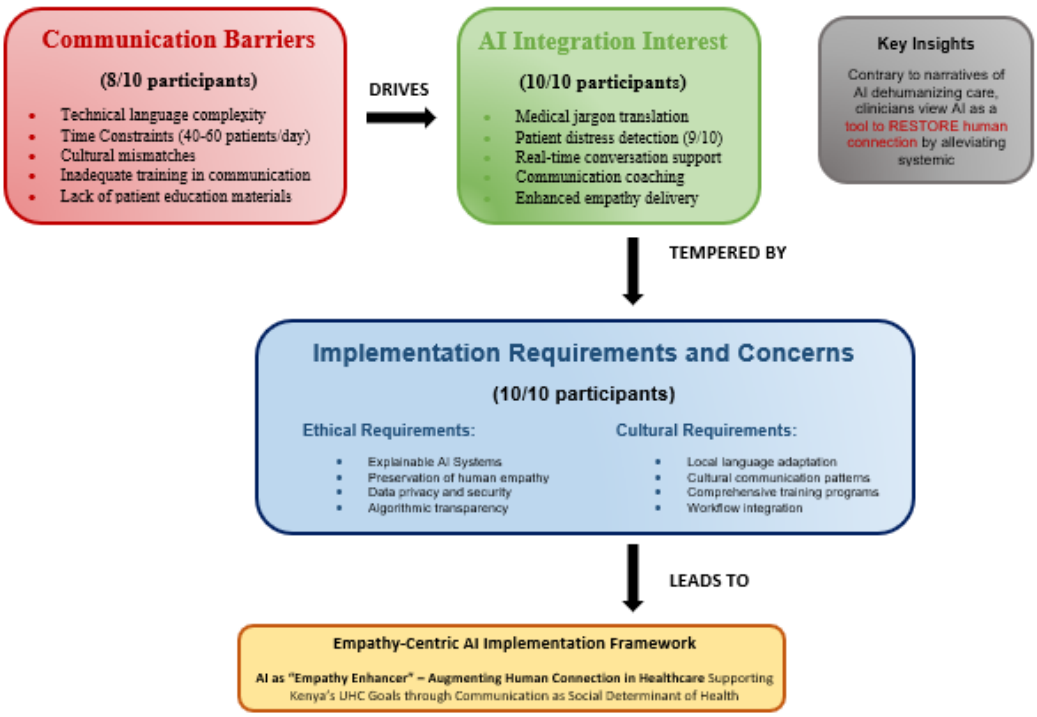


Figure 2: Conceptual Model -AI as Empathy Enhancer in Healthcare Communication

Figure 2 presents a conceptual model illustrating how Communication Barriers in clinical practice influence AI Awareness and Integration Interest, which is then tempered by Implementation Requirements and Concerns, ultimately leading to the proposed empathy-centric framework.

Communication Barriers in Clinical Practice

A majority of participants (8 out of 10) identified multiple significant barriers affecting doctor-patient communication in oncology settings. The most prominent challenge was the technical language barrier, with one clinical officer (CO3) noting: *"Sometimes I realise the patient leaves with more questions than answers. We use terms that make perfect sense to us but are completely foreign to them. You say 'metastasis' and you see confusion in their eyes, but there's barely time to explain."*

Time constraints became a major barrier to effective communication. All participants (10 out of 10) reported managing 40-60 patients daily, with only 10-15 minutes per consultation. A physician (MD2) explained: *"With such patient loads, you're forced to prioritise medical diagnosis over explanation. You know both are important, but time doesn't allow for comprehensive communication. It's frustrating because you want to help them understand, but the next patient is already waiting."*

Cultural mismatches in communication styles further complicated patient interactions. Nine out of 10 participants described challenges in adapting communication approaches to diverse ethnic groups, languages, and health beliefs within Kenya's multicultural population. A clinical officer (CO1) shared: *"Some communities have very specific beliefs about cancer. They might think it's a curse or punishment. You need to navigate these beliefs carefully while still providing medical facts."*

Traditional health beliefs often conflicted with biomedical explanations, necessitating the sensitive navigation of cultural differences. Participants also identified additional barriers, including inadequate training in communication skills among healthcare providers, a lack of patient education materials in local languages, and infrastructure limitations that hinder the use of visual aids or multimedia resources for patient education.

AI Awareness and Integration Interest

Despite limited current awareness of AI communication applications, participants demonstrated remarkable openness to AI integration in healthcare communication. Most participants (7 out of 10) were familiar with AI applications in medical imaging and diagnostics, but had minimal knowledge of communication-specific AI tools. A physician (MD1) admitted: *"I know about AI for reading X-rays and scans, but I hadn't thought about it helping with patient conversations. That's actually quite interesting."*

When presented with AI communication possibilities, all participants (10 out of 10) expressed high interest in several applications. Medical jargon translation tools were universally endorsed, with one participant (CO4) stating: *"If there was a system that could help me explain complex procedures in simple terms while I'm talking to the patient, that would be incredibly valuable. Imagine if it could suggest how to explain chemotherapy side effects in Kiswahili or simple English."*

Patient distress signal detection emerged as another priority application, with 9 out of 10 participants recognising its value. Participants acknowledged the potential of AI systems that could identify when patients were becoming overwhelmed, confused, or distressed during consultations. A clinical officer (CO2) noted: "Sometimes patients shut down emotionally when they hear 'cancer.' If AI could alert me to this, I could adjust my approach immediately."

Real-time conversational suggestions were welcomed by 8 out of 10 participants as tools to enhance the clarity of explanations and empathy. Participants viewed AI as a potential solution to current communication challenges rather than a threat to their professional autonomy. They

conceptualized AI tools as communication assistants that could enhance their ability to provide compassionate, understandable care. A physician (MD3) explained: *"It's not about replacing us, it's about making us better at what we already want to do – help our patients understand and feel supported."*

Implementation Requirements and Concerns

Participants identified several critical requirements for successful AI implementation in healthcare communication. All participants (10 out of 10) deemed explainable AI systems essential, with clinicians requiring an understanding of how and why AI tools make recommendations. Transparency was viewed as necessary for maintaining professional responsibility and patient trust. A clinical officer (CO5) emphasised: *"I need to know why the AI is suggesting certain words or approaches. I can't just follow suggestions blindly."*

The preservation of human empathy emerged as a non-negotiable requirement across all participants. Participants emphasised that AI should enhance rather than replace human connection in healthcare. One physician (MD4) articulated this perspective: *"We still need to talk to the patient ourselves. AI should not take over empathy. It should help us be more empathetic and effective, but the human touch must remain central."*

Cultural adaptation was identified as crucial for successful implementation in Kenya's diverse healthcare environment. Nine out of 10 participants emphasised the need for AI systems trained on local languages, cultural communication patterns, and health beliefs. Generic AI tools designed for Western contexts were viewed as inadequate for African healthcare settings. A clinical officer (CO6) observed: *"An AI trained on American patients won't understand how Kenyan families discuss illness or make medical decisions. It needs to be adapted to our context."*

Comprehensive training programs were considered essential for successful adoption by all participants. Participants expressed willingness to learn new technologies but emphasised the need for ongoing support and skill development. Concerns about technological complexity and integration with existing workflows were identified as potential barriers that require careful management. A physician (MD5) suggested: *"We need proper training, not just a one-day workshop. This is a big change in how we work, so we need time to learn and adapt."*

Discussion

Contrary to narratives of AI dehumanising care, our findings suggest that clinicians in this resource-constrained setting view AI primarily as a **tool to restore human connection** by alleviating the systemic pressures (time, jargon) that currently impede it. This paradoxical finding challenges assumptions about technology adoption in healthcare and reveals the nuanced ways frontline providers conceptualise AI's role in patient care. Rather than viewing AI as a replacement for human interaction, participants saw it as a means to overcome barriers that prevent them from providing the empathetic, comprehensible care they aspire to deliver.

Implications for Healthcare Communication

The findings reveal significant communication challenges in Kenyan public oncology settings that align with broader patterns observed across sub-Saharan Africa. Technical language barriers, time constraints, and cultural mismatches create substantial obstacles to effective patient care, contributing to poor treatment outcomes and patient dissatisfaction. These

challenges are not simply technical problems but reflect deeper systemic issues related to healthcare organisation, resource allocation, and training priorities.

The demonstrated clinician interest in AI communication tools suggests considerable potential for technology-enhanced healthcare delivery. However, successful implementation requires careful attention to local contexts, cultural sensitivity, and ethical considerations. The emphasis on explainable AI and the preservation of human empathy indicates a sophisticated understanding of technology's appropriate role in healthcare communication. This understanding provides a foundation for developing implementation strategies that leverage technology while maintaining the human-centred nature of healthcare.

Framework for AI Integration Through a Theoretical Lens

Our findings illuminate multiple domains of the NASSS framework relevant to AI implementation in this context. Regarding **adopter** perceptions, clinicians demonstrated a sophisticated understanding of AI's appropriate role, viewing it as a communication enhancer rather than a replacement for human interaction. The **technology** domain revealed critical requirements for cultural adaptation and explainability, highlighting the need for AI systems specifically designed for diverse, resource-constrained environments. Most significantly, the **value proposition** is centred not on efficiency gains but on enhanced empathetic connection, a finding that reframes how we conceptualise AI's benefit in resource-constrained settings.

Based on the findings, a phased implementation framework is proposed for AI integration in African healthcare communication. The first phase of foundation building involves establishing technological infrastructure, developing culturally appropriate AI models, and conducting pilot programs with simple applications, such as medical jargon translation. This initial phase should focus on proving the concept with low-risk applications while gathering extensive feedback from both clinicians and patients. The emphasis should be on building trust and demonstrating value rather than implementing complex features.

The second phase of capacity development focuses on expanding AI applications to include sentiment analysis and communication coaching while building local expertise in AI system management and maintenance. During this phase, more sophisticated features should be introduced gradually, with emphasis on training healthcare providers and developing local technical capacity. The integration of AI systems with existing clinical workflows becomes crucial during this phase, necessitating careful attention to usability and minimising workflow disruptions.

The final phase of comprehensive integration involves the full implementation of advanced AI communication support systems, accompanied by continuous monitoring, evaluation, and improvement mechanisms. This approach ensures safety, effectiveness, and acceptance while allowing for iterative refinement based on real-world experience and feedback. The phased approach acknowledges the complexity of technology implementation in healthcare settings and provides opportunities for learning and adaptation at each stage.

Ethical and Cultural Considerations

The study’s findings highlight the vital importance of deploying ethical AI in healthcare communication. Concerns about data privacy, algorithmic bias, and cultural relevance demand proactive management through thorough ethical frameworks and community engagement. The emphasis on explainable AI reflects not only technical requirements but also ethical obligations to maintain transparency and accountability in healthcare decision-making.

Cultural adaptation is particularly important in African settings, where linguistic diversity and diverse health beliefs prevail. AI systems must be designed with a thorough understanding of local communication styles, cultural values, and healthcare practices to ensure they are effective and well-received. This requires moving beyond simple language translation to deeper cultural and contextual adaptation that respects local ways of understanding health, illness, and healing.

The preservation of human empathy emerged as a central ethical concern, reflecting deeper anxieties about the role of technology in healthcare. Participants' insistence that AI should enhance rather than replace human connection provides important guidance for implementation approaches that maintain the relational aspects of healthcare while leveraging technology's capabilities.

Policy Implications

The research findings have important implications for healthcare policy development in Kenya and similar settings. Incorporating AI literacy into medical education curricula is crucial for preparing future healthcare professionals for technology-driven practice. This requires updating medical training programs to include not only technical skills but also critical thinking about the appropriate use of technology and ethical considerations.

National frameworks for the ethical use of AI in healthcare are needed to ensure the safe and effective implementation of this technology. These frameworks should address issues of data governance, algorithmic accountability, and patient rights while providing guidance for healthcare institutions implementing AI systems. The development of such frameworks requires collaboration between healthcare professionals, technologists, ethicists, and patient representatives.

Public-private partnerships represent crucial mechanisms for AI development and deployment in resource-constrained settings. Collaboration between government agencies, healthcare institutions, technology companies, and international development organisations can accelerate progress while ensuring contextual appropriateness. These partnerships should prioritise knowledge transfer and local capacity building to ensure sustainable implementation.

Limitations

This study has several limitations that need to be acknowledged. The research was conducted exclusively in public facilities within Nairobi County, which may limit its applicability to other regions or healthcare settings in Kenya. While focusing on clinician perspectives is valuable, it does not encompass patient voices, which are essential for a thorough understanding of communication issues and AI acceptability. The exclusion of patient perspectives limits our understanding of how AI communication tools might be received by the intended beneficiaries.

The qualitative design, although suitable for exploratory research, does not provide quantitative data on communication effectiveness or the impact of AI. Furthermore, the study focused on perceptions and attitudes rather than actual AI deployment, which limits conclusions about practical feasibility and effectiveness. Sample size limitations, although suitable for qualitative research, may not capture the full range of perspectives among Kenyan healthcare providers.

Future research should involve larger, more geographically diverse samples and utilise mixed-methods approaches for a comprehensive investigation. Including patient perspectives,

implementation studies, and quantitative outcomes assessment will be vital for advancing understanding of AI's potential in healthcare communication.

Conclusion and Recommendations

This study provides valuable insights into the potential of AI-enhanced communication within African healthcare settings. The findings emphasise significant communication challenges in public oncology care that could be addressed through carefully designed AI interventions. Clinicians' enthusiasm for AI communication tools, combined with thoughtful consideration of ethical and cultural factors, suggests promising prospects for integrating technology.

Recommendations

The findings of this study highlight several key recommendations for practice and research. For practical implementation, healthcare organisations should launch pilot programmes testing simple AI communication tools in selected facilities, starting with basic features like medical jargon translation before moving on to more advanced functionalities. Investing in comprehensive training programmes for healthcare providers on AI communication technologies is essential for successful adoption, with an emphasis on ongoing support and skill development.

Ensuring the cultural adaptation of AI systems to suit diverse African contexts should be a priority, involving collaboration with local communities and cultural experts to create solutions that are contextually relevant and appropriate. Establishing ethical oversight mechanisms for AI use in healthcare is essential, including the setting up of institutional review boards specifically for AI applications and regular reviews of algorithmic bias and fairness.

From a research perspective, future investigations should include patient perspectives in AI communication research to provide a comprehensive understanding of acceptability and effectiveness from the user experience standpoint. Conducting longitudinal studies to measure the impact of AI on health outcomes will be essential for demonstrating the clinical value and cost-effectiveness of these interventions. Future research must now test whether AI tools designed with these principles in mind actually measurably improve patient understanding, trust, and adherence in oncology care. Specifically: **Do empathy-centric AI communication tools, culturally adapted for Kenyan contexts, demonstrably improve patient comprehension scores and treatment adherence rates compared to standard care?**

Investigating the cost-effectiveness of AI communication interventions should be prioritised to inform resource allocation decisions in resource-constrained settings. Additionally, exploring AI applications across different healthcare specialities and settings will help identify the most promising areas for technology integration and scaling.

Policy development should prioritise integrating AI literacy into medical education curricula to prepare future healthcare providers for technology-enhanced practice. Creating national frameworks for the ethical use of AI in healthcare will guarantee consistent standards and safeguards across the healthcare system. Promoting public-private partnerships for AI development and deployment can mobilise resources and expertise from multiple sectors while supporting infrastructure development for digital health technologies.

This study advances the discourse on AI in global health beyond mere technical transfer, advocating for a **contextually grounded, empathy-first model** of implementation. It demonstrates that in settings where human resources are stretched thin, AI's greatest value may

lie not in replacing clinicians, but in empowering them to be more fully human with their patients. The future of healthcare communication in Africa depends on the thoughtful integration of AI technologies that enhance, rather than replace, human empathy. Success requires collaboration across sectors, a commitment to ethical principles, and sustained investment in both technology and human capacity development. By adopting evidence-based, culturally sensitive approaches to AI integration, African healthcare systems can harness technology to enhance patient care while preserving the essential human elements of healing.

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