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Negotiating Trust, Identity, and Responsibility: Clinicians' Experiences with AI-Assisted Diagnosis in Digital Healthcare Settings

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ABSTRACT

Artificial intelligence (AI) is reshaping clinical practice by supporting diagnosti decision-making, prompting new questions about how healthcare professionals experience and adapt to this technological integration. While much attention has beer paid to the performance of AI systems, less is known about the subjective experiences o clinicians navigating this evolving landscape. Current literature lacks insight into hov professionals construct meaning around trust, responsibility, and identity in AI-mediatec diagnostic settings.

This study adopts an interpretative phenomenological approach (IPA) to explore hov clinicians make sense of their interactions with AI in digital hospital environments Using in-depth, semi-structured interviews with nine healthcare professionals, the study identified three central themes: conditional trust in AI, redefinition of professiona identity, and ethical tensions surrounding accountability. Data were analyzed through a multi-step IPA process, focusing on meaning units, emergent themes, and cross participant convergence. These themes reveal how participants continuously negotiate their role in a system that challenges traditional models of expertise and decision making. The results show that AI is not merely a tool but a transformative agent tha affects the clinician's sense of agency and moral responsibility.

These findings contribute to a more holistic understanding of AI in healthcare by emphasizing the experiential and ethical dimensions often overlooked in technica assessments. The study suggests that future research and implementation efforts mus account for the lived experiences of clinicians to ensure responsible, human-centered A integration in medical practice.

INTRODUCTION

The rapid integration of artificial intelligence (AI) into healthcare systems marks a pivotal shift in how medical knowledge is produced, accessed, and applied. As AI technologies increasingly support diagnostic decisions, the interaction between human expertise and machine intelligence becomes central to modern clinical practice (Abegunde dkk., 2020). Digital hospitals now use AI to assist in disease identification, medical image interpretation, and treatment recommendations, reflecting broader transformations in science and medicine.

While AI's efficiency and precision are well documented, its integration also introduces complex experiential and ethical challenges. Clinicians are not passive recipients of AI tools; they actively interpret and negotiate the presence of these technologies, which affects their workflow, clinical judgment, and sense of responsibility. The human side of this integration—how clinicians experience, adapt to, and internalize AI—remains underexplored in dominant literature.

Most existing research focuses on technical capabilities or measurable outcomes such as diagnostic accuracy and user satisfaction (Affoh dkk., 2024). However, these studies rarely address how AI alters clinicians' perceptions of trust, autonomy, and professional identity. Quantitative

methods, while valuable, often fail to capture the nuanced and emotionally rich dimensions of clinicians' lived experiences.

There is a growing need for qualitative inquiry to understand how clinicians construct meaning around AI use in clinical settings. A phenomenological approach, particularly Interpretative Phenomenological Analysis (IPA), offers a compelling alternative by emphasizing first-person perspectives and the subjective interpretation of experience. This method is especially suited to exploring how professionals grapple with issues of trust, accountability, and evolving roles in the context of machine-assisted decision-making.

Previous studies in digital healthcare have often examined usability, acceptance, and trust in AI systems (Alotaibi dkk., 2021), but seldom delve into the clinicians' internal negotiations with their identity, ethics, and agency. Literature on the emotional and moral implications of AI remains limited, especially in terms of first-person narratives.

To address this gap, the present study adopts IPA to explore how clinicians make sense of their interactions with AI in digital diagnostic environments. By focusing on lived experience, this research contributes to a more holistic understanding of AI integration—highlighting dimensions often overlooked in performance-centered assessments.

This article is structured as follows: the introduction outlines the research context and rationale; the methodology details the use of IPA and data collection techniques; the results section presents thematic findings from interviews; and the discussion interprets these insights in light of clinical theory and practice. The conclusion reflects on the study's contributions to human-centered AI in healthcare (Assefa Tofu & Wolka, 2023).

RESEARCH METHODS

Study Design

This study employed an interpretative phenomenological approach to explore the lived experiences of healthcare professionals engaging with AI-based diagnostic systems in digital hospital environments. Interpretative Phenomenological Analysis (IPA), rooted in Heideggerian philosophy, was selected for its emphasis on subjective meaning-making and experiential depth (Carmichael dkk., 2023) . The approach facilitates a deep examination of how individuals make sense of complex phenomena in their lived context, particularly relevant when investigating emotional, ethical, and existential dimensions of technology integration in clinical settings. IPA's idiographic and inductive nature made it suitable for uncovering nuanced insights into the evolving role, trust, and accountability perceptions among medical professionals in the age of AI.

Participants

Participants included licensed healthcare professionals actively involved in diagnostic processes at AI-integrated hospitals. Selection was based on purposive sampling to ensure inclusion of individuals with direct, relevant, and recent experience in using AI systems for clinical decision-making. Inclusion criteria encompassed professionals with a minimum of two years of experience in clinical diagnostics and at least six months of regular interaction with AI diagnostic platforms. Exclusion criteria eliminated administrative personnel and practitioners with no direct engagement in the diagnostic process. A total of nine participants were involved, comprising six physicians and three nurses, ranging in age from 30 to 58 years (mean age: 42.6), with gender distribution balanced across the group (Diallo dkk., 2020). Participants represented various departments including radiology, internal medicine, and emergency care, providing diverse yet relevant experiential perspectives.

Data Collection

Data were collected through in-depth, semi-structured interviews conducted in quiet, private spaces within the participants' respective hospital environments to ensure comfort and confidentiality. Each interview lasted between 45 and 75 minutes and was audio-recorded with prior permission. An interview guide was used, focusing on perceptions of AI, decision-making experiences, ethical

concerns, and professional identity. The guide was piloted with two external participants for clarity and contextual fit, with minor adjustments made accordingly (Gosnell dkk., 2019). All interviews were conducted face-to-face and transcribed verbatim for analysis. Follow-up communication was used when clarification was needed to ensure accurate representation of participants' perspectives.

Data Analysis

Data were analyzed using Interpretative Phenomenological Analysis (IPA) through a systematic multi-step process. First, transcripts were read multiple times to gain immersion in the data. Second, significant statements were identified and segmented into meaning units. Third, initial codes were developed and grouped into emerging themes reflecting participants' lived experiences. These themes were then refined through iterative comparison and conceptual clustering. NVivo 12 software was utilized to assist in organizing data and maintaining auditability throughout the analytic process (Heckelman, 2019). The analysis emphasized idiographic detail while maintaining interpretive coherence across participants, ultimately deriving essential themes that capture the phenomenon under investigation.

Ethical Considerations

Ethical approval was obtained from the institutional review board of the affiliated academic institution. Written informed consent was secured from all participants before data collection, following a clear explanation of the study's purpose, confidentiality procedures, and voluntary nature of participation. Pseudonyms were assigned to ensure anonymity, and all identifying information was removed during transcription and reporting (Heider dkk., 2023). The study adhered to the ethical guidelines set forth in the Declaration of Helsinki and relevant national standards for research involving human participants.

RESULTS

Negotiating Trust and Uncertainty in AI-Assisted Diagnosis

Participants revealed a profound ambivalence in their initial encounters with AI diagnostic systems. While they acknowledged the computational power and efficiency of AI, there was an underlying struggle to establish trust in its clinical judgments—especially when those judgments contradicted their professional instincts.

"Sometimes I wonder, am I following my training or just relying on a black box? The AI gives an answer, but can I really trust it?" (Participant 4)

This uncertainty was often amplified by the opaque nature of AI algorithms, described by several participants as "unexplainable" and "too mathematical." The lack of transparency challenged their clinical autonomy and introduced psychological discomfort when making decisions involving patient outcomes.

"It's not that I doubt the AI entirely, but I feel like I lose a part of myself when I follow it blindly." (Participant 2)

Trust appeared to develop gradually through repeated exposure and corroborative experiences, but participants emphasized that such trust remained conditional and context-sensitive.

How to approach AI-assisted diagnosis?

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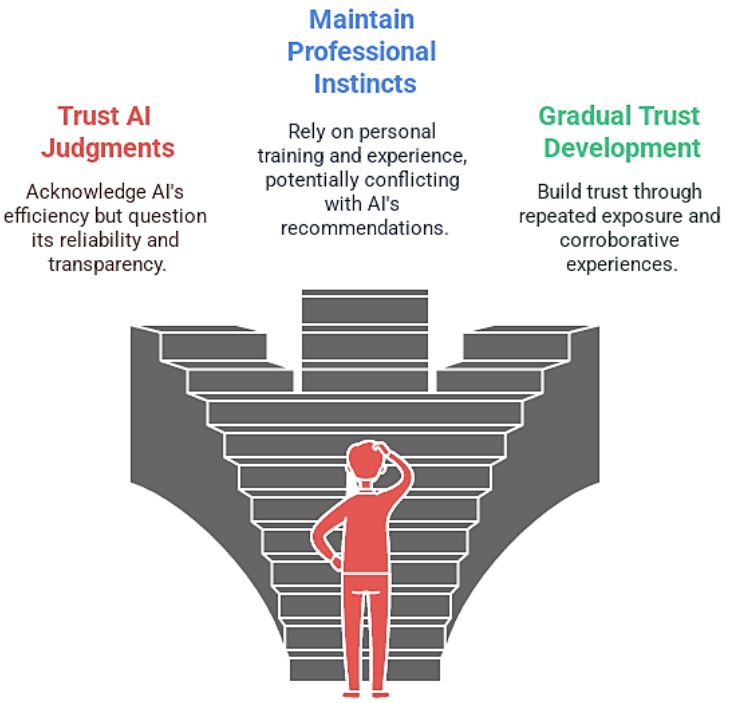

Redefining Professional Identity in the Presence of AI

The integration of AI into diagnostic workflows led to an existential reflection among participants on their evolving roles and responsibilities. Rather than merely automating tasks, AI systems were perceived as reshaping the epistemological foundations of clinical reasoning.

"Before AI, making a diagnosis felt like an art—now it feels more like managing data streams. I'm not sure where my judgment fits anymore." (Participant 7)

This redefinition of identity was particularly felt among younger professionals, who expressed both enthusiasm for the innovation and concern about the dilution of medical intuition. Senior practitioners, in contrast, often described feelings of disempowerment or displacement.

"I used to be the decision-maker. Now I feel like an overseer of a machine. It's unsettling." (Participant 1)

AI systems were thus not merely tools but actors that prompted shifts in the very meaning of what it means to be a healthcare professional.

Ethical Reflections on Responsibility and Accountability

An emerging theme across interviews was the ethical tension between the convenience of AI assistance and the enduring weight of moral accountability. Participants raised critical concerns about who bears responsibility in cases of misdiagnosis facilitated by AI.

"If something goes wrong, it's still my name on the report—even if I followed the AI's suggestion. That's a burden AI doesn't share." (Participant 6)

The delegation of diagnostic tasks to non-human agents generated cognitive dissonance. Many participants described this as a form of ethical estrangement, where professional accountability remained fully human while decision-making became increasingly automated.

"The AI doesn't have a conscience, but I do. And that matters when you're treating real people." (Participant 9)

Participants called for institutional clarity on accountability protocols and emphasized the importance of maintaining human oversight in all AI-involved decisions.

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The experiences of healthcare professionals navigating AI-assisted diagnosis converge on three central phenomena: the fluctuating dynamics of trust, the reconfiguration of professional identity, and the ethical complexities of accountability. These themes reveal how AI is not merely a technological tool but a transformative agent reshaping the experiential and moral landscape of modern clinical practice.

DISCUSSION

The findings of this study reveal that healthcare professionals' experiences with AI-assisted diagnosis are characterized by ambivalence toward trust, shifts in professional identity, and unresolved ethical tensions surrounding responsibility (Johansson dkk., 2024). These themes collectively address the central research question: how clinicians interpret and internalize their evolving roles in the context of AI integration in clinical practice.

These findings offer a substantive response to the overarching inquiry posed in the introduction, highlighting the deeply personal and interpretative processes clinicians undergo when working with AI. Rather than simply adopting a new tool, participants engage in a continuous negotiation of meaning, where trust in AI is contingent and provisional, identity is recalibrated, and ethical boundaries are reevaluated. This study contributes uniquely by emphasizing that clinicians do not merely adapt to AI; they reinterpret their professional selves in relation to it. The phenomenological approach employed here uncovers the emotional, cognitive, and moral layers of this transition, which are often obscured by functional or operational assessments.

The insights resonate with and extend prior work. For instance, (Hien & Bao, 2024) found that resistance to medical AI stems from emotional dissonance and perceived loss of control—a theme echoed here in participants' uncertainty and cautious trust. Similarly, (How dkk., 2020) reported clinicians' concern about diminished autonomy, aligning with the present study's emphasis on the redefinition of professional identity. However, this research diverges by framing these issues within an interpretative narrative, rather than simply identifying trends. It offers a richer, contextualized understanding of how ethical responsibility and professional meaning are co-constructed in AI-mediated environments. By engaging with Heideggerian notions of being-in-the-world, this study situates clinicians not only as users of technology but as existential agents grappling with the implications of technological transformation.

The implications of these findings extend beyond the individual experiences of the participants and resonate with broader discussions on the ethical and professional transformation within technologically mediated healthcare. Clinicians' narratives underscore the importance of preserving human-centered values in an increasingly automated environment. The experience of negotiating trust, responsibility, and identity suggests that the integration of AI cannot be viewed solely as a technical transition but as a cultural and moral shift (Irham dkk., 2022). These insights are particularly relevant for institutions aiming to implement AI responsibly, highlighting the need for training programs that address not only system usage but also the psychological and ethical dimensions of human-AI collaboration. The study invites healthcare policymakers and administrators to consider the emotional labor and interpretative work performed by professionals when adapting to intelligent systems.

Despite its contributions, this study is not without limitations. The findings are contextually bound to a specific group of healthcare professionals working in digitally advanced hospitals, which may limit the transferability of the insights to other settings with different technological maturity or cultural practices. Furthermore, the interpretative nature of phenomenological analysis, while rich in depth, does not seek to generalize but to illuminate meaning within specific lived contexts. These limitations should be viewed not as weaknesses, but as boundaries that define the scope of this inquiry and inform the careful framing of its conclusions.

Future research could expand upon these findings by examining how different clinical roles—such as nurses, radiologists, or general practitioners—construct their experiences with AI across diverse cultural and healthcare environments. Longitudinal studies may also reveal how perceptions

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and meanings evolve as AI systems become more entrenched in clinical practice. Additionally, comparative studies that integrate phenomenological analysis with other qualitative or mixed-method approaches could deepen our understanding of the systemic, relational, and emotional impacts of AI in healthcare (Jezeer dkk., 2019). This study lays the groundwork for such inquiries by establishing that understanding the subjective experience is not ancillary, but central, to ethically and effectively integrating AI into medical decision-making.

CONCLUSION

This study explored how healthcare professionals experience and interpret the integration of AI in diagnostic decision-making within digital hospital environments. The findings reveal that clinicians navigate complex emotional and ethical tensions, particularly in relation to trust, identity, and responsibility. These insights provide a deeper understanding of the subjective realities often overlooked in previous research, which focused primarily on functional or technical aspects of AI. By applying an interpretative phenomenological approach, the study highlights the human dimension of technological change in clinical practice. The results underscore the need for healthcare institutions to support professionals in making sense of their evolving roles. Future research should expand this inquiry across diverse clinical settings and examine how meaning-making processes shift over time with continued AI integration.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest regarding the publication of this article. All procedures were conducted independently of the funding agency, and no personal or financial relationships influenced the outcomes of this study.

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