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Exploring Physicians' Experiences of Conflicts Between Clinical Judgment and AI Recommendations in the Use of AI-Based Clinical Decision Systems

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ABSTRACT

The integration of Artificial Intelligence (AI) in healthcare has transformed clinical decision-making, raising important questions about how medical professionals adapt to and experience this technological shift. While prior studies have explored system performance and usability, little is known about how physicians subjectively interpret their interactions with AI-based decision support systems in real-world settings. This study addresses the gap by asking: how do physicians experience conflicts between their clinical judgment and AI-generated recommendations? Using an interpretative phenomenological approach, this study explores the lived experiences of physicians navigating such conflicts within tertiary hospital environments in Indonesia. In-depth, semi-structured interviews were conducted with ten physicians from three tertiary-care hospitals, all of whom had at least six months of experience using AI-supported diagnostic systems. Data were analyzed using interpretative phenomenological analysis (IPA) to uncover key themes related to emotional tension, ethical ambiguity, and shifting professional identity. The findings reveal that physicians perceive AI not merely as a tool, but as an influential presence that challenges their sense of clinical autonomy and accountability. Participants also described adaptive strategies for reconciling AI recommendations with their professional judgment over time. These results deepen our understanding of the ethical and experiential dimensions of AI integration in clinical practice, especially in low- and middle-resource healthcare systems such as those found in Southeast Asia. The study highlights the need for more human-centered AI implementation strategies and calls for continued exploration of clinician experiences as technology reshapes medical practice.

INTRODUCTION

The integration of Artificial Intelligence (AI) and Machine Learning (ML) into healthcare systems marks a significant transformation in clinical decision-making processes (Tse et al., 2022). AI technologies, particularly those based on predictive algorithms, have increasingly been adopted to support diagnostics, treatment planning, and patient monitoring across various medical disciplines. These systems promise enhanced accuracy, efficiency, and standardization in clinical workflows, especially in high-demand environments such as tertiary hospitals and emergency departments (Thulin et al., 2020). As such, the presence of AI in healthcare is no longer limited to research settings but has become an operational reality in many countries. including low- and middle-income countries (LMICs), where resource limitations heighten both the utility and complexity of AI deployment.

This technological evolution, however, introduces new challenges that extend beyond clinical performance or algorithmic precision. At the heart of healthcare delivery lies the human dimension—the lived experience of healthcare professionals who are now required to negotiate their roles, responsibilities, and professional identities in relation to algorithmic systems (Al-Batran et al., 2020). The shift from human-exclusive to human-machine collaborative decision-making creates tensions that are not easily quantified, particularly when clinicians encounter conflicts between their own medical judgment and AI-generated recommendations. These tensions are not merely technical but

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are situated within socio-cultural, ethical, and infrastructural constraints, especially in LMIC contexts where professional hierarchies, institutional trust, and access to technology vary widely.

This study seeks to explore how physicians make sense of these conflicts between clinical judgment and AI recommendations in real-world LMIC hospital settings (Haase et al., 2024). Understanding the subjective meaning embedded in their interactions with AI systems can provide valuable insights into the psychological, moral, and relational dynamics of contemporary clinical practice. Phenomenology, with its focus on lived experience and the construction of meaning, offers an appropriate lens to investigate these complexities. Unlike quantitative approaches that may overlook context-specific nuances and emotional depth, phenomenological inquiry seeks to uncover the essence of what it means to be a clinician in an era where artificial intelligence is no longer an abstract future, but a present reality.

Research into clinicians lived experiences with AI-driven decision-making has emerged as a critical subfield within the broader domain of health technology and human–machine interaction. As AI systems become increasingly embedded in clinical environments, attention has shifted toward understanding how healthcare professionals internalize, interpret, and emotionally respond to these technological interventions (Rethnam et al., 2021). Studies have shown that while AI can enhance diagnostic accuracy and operational efficiency, it simultaneously alters the clinician's role, potentially diminishing their sense of autonomy, ethical agency, and professional identity.

Despite growing scholarly interest, much of the existing literature relies heavily on quantitative assessments such as satisfaction surveys, performance metrics, or usage statistics (Tanzi et al., 2020). These approaches often fail to capture the nuanced, emotionally layered experiences that arise when clinicians confront moments of doubt, dissonance, or moral tension in relation to AI recommendations. Furthermore, structured methodologies frequently reduce complex personal narratives into generalized variables, neglecting the contextual richness and interpretative depth that define subjective experiences.

This methodological limitation underscores the inadequacy of conventional research paradigms in fully addressing the experiential essence of clinician–AI interactions (Liu et al., 2018). As a result, many existing studies offer only a surface-level understanding of the phenomenon, missing the subtleties that influence how practitioners perceive and respond to AI within the dynamics of real-world medical practice. Phenomenological research, with its emphasis on deep, descriptive engagement with lived experience, is thus essential for advancing a more comprehensive and human-centered understanding of this evolving clinical reality.

Current responses to the integration of AI in clinical practice have primarily focused on technical refinement and practical implementation strategies. These include usability improvements, algorithm transparency efforts, and clinician training programs aimed at increasing acceptance and efficiency of AI systems in healthcare environments. While such approaches contribute to operational success, they often rely on frameworks that prioritize measurable outcomes and system performance rather than addressing how clinicians experience, internalize, and interpret these technologies in their daily work.

Existing studies that utilize quantitative surveys or structured interviews fall short in capturing the depth and texture of physicians lived experiences, particularly when they face conflicts between AI-generated recommendations and their own clinical judgment (Wu et al., 2025). These methods tend to flatten complex narratives into predefined variables, leaving little room to explore the moral ambiguity, emotional tension, and evolving professional identity that characterize such encounters.

What remains insufficiently understood is the subjective, contextualized experience of clinicians navigating these tensions in real-world settings—especially in low-resource or culturally unique healthcare systems. This gap in understanding underscores the need for a phenomenological approach, which centers on the essence of lived experience and allows for the emergence of meaning from the perspective of those directly involved. By shifting the methodological lens from performance

metrics to experiential insights, phenomenology offers a deeper, more human-centered pathway to comprehend the ethical and emotional realities surrounding AI adoption in medicine.

Previous studies have explored the integration of AI in healthcare from perspectives such as system design, accuracy, and clinical workflow. Some researchers have also begun to examine the psychological and ethical responses of clinicians to AI recommendations. However, these studies often rely on survey-based or mixed-method designs that only partially reflect the depth of personal experience. Theories on human-technology interaction suggest that meaning-making is central to how professionals adapt to emerging systems. Yet, there is limited research that fully captures the lived experience of clinicians navigating conflicts between machine suggestions and professional judgment.

This study adopts an interpretative phenomenological approach to address that gap. By focusing on how physicians experience and interpret their interactions with AI, this method allows for deeper insight into the moral, emotional, and practical tensions they face. The phenomenological method was selected to uncover the essence of their experiences, grounded in the contextual realities of clinical practice. Through this approach, the study seeks to answer how clinicians perceive the influence of AI on their decision-making autonomy. It also explores the meaning they assign to their evolving roles in an AI-assisted environment.

This article is structured as follows. The introduction presents the background and rationale for the study. The methodology section details the interpretative phenomenological approach, data collection, and analysis process. The results section presents key themes drawn from participant narratives. Finally, the discussion examines the implications of these findings for future research, clinical practice, and AI system design, followed by a conclusion that summarizes the study's contributions.

RESEARCH METHODS

Study Design

This study employed an interpretative phenomenological approach to explore the subjective experiences of physicians encountering conflicts between their clinical judgment and AI-based decision support systems (Padgett, 2017). Phenomenology was chosen for its focus on understanding how individuals make sense of their lived experiences within a particular context. By emphasizing meaning-making processes, this design enabled a deep exploration of the emotional, cognitive, and ethical dimensions surrounding the use of AI in healthcare decision-making. The interpretative branch of phenomenology, rooted in Heideggerian philosophy, was deemed appropriate given the study's aim to not only describe, but also interpret how physicians ascribe meaning to their interactions with AI systems within the socio-clinical environment.

Participants

Participants consisted of licensed physicians working in tertiary referral hospitals where AI-based diagnostic or triage tools had been implemented. Inclusion criteria required participants to have at least two years of clinical experience and direct interaction with AI-enabled systems in their diagnostic or treatment workflows. Exclusion criteria included physicians who had no prior exposure to AI-based tools or had participated in similar qualitative studies in the past year. A purposive sampling strategy was applied to ensure variation in clinical specialties and levels of seniority. A total of 10 participants (6 males and 4 females), aged between 32 and 58 years, were included. The diversity of clinical backgrounds—ranging from internal medicine to radiology—contributed to a rich contextual understanding of the phenomenon.

However, the study sample was geographically limited to urban hospitals within one province, which may affect the transferability of findings to other institutional contexts, such as rural or community healthcare settings. Furthermore, institutional variation was constrained, as participating hospitals shared similar administrative structures and technology access levels.

Data Collection

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Data were collected through in-depth, semi-structured interviews conducted face-to-face in a quiet and private setting within hospital premises. An interview guide was used to facilitate discussion, with open-ended questions designed to elicit reflective narratives regarding participants' experiences with AI-driven clinical tools. Interviews lasted between 45 and 70 minutes and were audio-recorded with participant consent. The interview environment was arranged to ensure psychological comfort and confidentiality. All interviews were transcribed verbatim. The data collection process continued until thematic saturation was reached, wherein no new themes emerged from the narratives.

Data Analysis

Data were analyzed using Interpretative Phenomenological Analysis (IPA), which emphasizes both descriptive and interpretive dimensions of lived experience. Transcripts were first read multiple times to achieve familiarity with the data. Significant statements were then identified and coded into discrete meaning units. These units were clustered into emergent themes through a process of iterative comparison, abstraction, and reduction. NVivo 12 software was used to organize and manage the coding process, enabling the researchers to efficiently store, retrieve, and cross-reference coded text segments, as well as to visualize theme co-occurrences and hierarchies.

To ensure analytic rigor, two researchers independently coded a subset of the transcripts and compared coding schemes to establish inter-coder reliability. Discrepancies were resolved through discussion and consensus. Additionally, a third researcher conducted a peer debriefing session to audit the analytic process and thematic structure. Member checking was also conducted by sharing preliminary interpretations with selected participants for feedback and validation.

Ethical Considerations

Ethical approval was obtained from the institutional research ethics committee in accordance with national guidelines for human subject research. Written informed consent was provided by all participants prior to data collection. Confidentiality and anonymity were assured by using pseudonyms and removing any identifying information from transcripts. All procedures adhered to the ethical principles outlined in the Declaration of Helsinki and local institutional policies.

RESULTS

Navigating Clinical Intuition in the Presence of AI Recommendations

Participants described the emotional and cognitive struggle they faced when AI-generated recommendations contradicted their clinical judgment. This experience was particularly salient among senior physicians who relied heavily on their intuition developed over years of medical practice. For many, AI was seen not merely as a tool, but as an external presence that disrupted their decision-making autonomy.

"I remember reviewing a patient's CT scan and being convinced it was benign. The AI flagged it as high-risk. I hesitated for hours, questioning myself, not the AI. It felt like I was losing touch with my own instincts." (Participant 4)

This internal conflict led to a sense of disorientation and erosion of professional confidence, especially when physicians felt compelled to override their own assessments to align with algorithmic suggestions. While some participants viewed AI as a second opinion, others felt subordinated by it.

"When the machine's diagnosis became the default, I started to feel like a data processor, not a doctor." (Participant 2)

The Emotional Burden of Accountability in Algorithmic Conflict

Doctors consistently expressed anxiety over accountability when they chose to follow or reject AI recommendations. The ambiguity surrounding who bears responsibility in the event of a misdiagnosis intensified their emotional burden. Participants voiced fears of legal implications, reputational harm, and moral guilt.

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"If I follow AI and it goes wrong, will the blame fall on me or the machine? Either way, it's my name on the report." (Participant 7)

This dilemma often led to defensive medical practices, including redundant testing or unnecessary referrals, in an attempt to shield themselves from potential consequences. The moral weight of making decisions in the shadow of machine recommendations altered not only the clinical workflow but also the emotional landscape of care delivery.

Ethical Friction in Human-Machine Collaboration

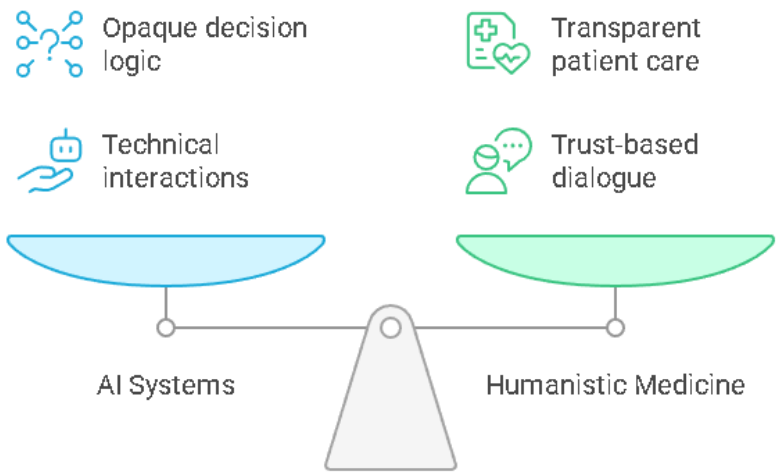
Ethical concerns emerged as a persistent theme, particularly around the opaque logic of AI systems. Physicians described discomfort in explaining AI-generated decisions to patients, especially when those decisions lacked transparency or conflicted with patient-centered values.

"I couldn't explain to the patient why the system flagged her case for palliative care. I didn't even understand the rationale myself." (Participant 5)

This lack of explainability created a sense of detachment between the clinician and the patient, reducing opportunities for trust-based dialogue. Some participants feared that AI could erode the humanistic essence of medicine, turning interactions into technical transactions.

"We are trained to see the patient, not the pattern. AI is making us forget the difference." (Participant 1)

Balancing AI's Efficiency with Humanistic Care



Adaptive Negotiation of Trust and Competence

Despite initial resistance, several participants developed adaptive strategies to coexist with AI in their clinical routines. These adaptations ranged from selective reliance to cross-validation of AI suggestions with peer consultation. Trust in AI was not static but context-dependent, influenced by previous experiences, perceived system accuracy, and the severity of cases.

"I trust AI in dermatology more than in emergency care. In high-stakes decisions, I need more than just probability." (Participant 6)

Over time, some clinicians reported a gradual recalibration of their role — not as competitors with AI, but as its interpreters and guardians. This shift allowed for a more nuanced engagement, where the clinician remains the final arbiter while integrating AI as a supportive partner.

The findings of this study highlight the complex, emotionally charged, and ethically nuanced experiences of physicians who interact with AI-based decision systems in clinical settings. Themes of intuition conflict, emotional accountability, ethical friction, and adaptive negotiation reveal a dynamic interplay between human agency and algorithmic authority, shaping the emerging contours of clinical practice in the AI era.

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DISCUSSION

The findings of this study reveal that physicians experience a profound tension between their clinical intuition and AI-generated recommendations (Sequeira et al., 2022). This tension is shaped by emotional conflict, ethical uncertainty, and evolving perceptions of trust, highlighting the essence of what it means to practice medicine alongside intelligent systems—an experience rooted in both resistance and adaptation. These insights respond directly to the central research question concerning how physicians navigate conflicts between human judgment and machine-generated outputs in clinical settings.

The study offers a distinct contribution by illuminating how AI is not merely a tool but a relational entity that influences the physician's sense of autonomy and moral accountability. Rather than viewing AI as an objective support mechanism, participants described it as a presence that could undermine or validate their decisions. This challenges conventional narratives that emphasize only the performance of AI systems while overlooking their impact on clinician identity and practice (Wright & Muma, 2018). Through a phenomenological lens, the study deepens the understanding of how physicians construct meaning around their professional agency when confronted with algorithmic authority, thus addressing the knowledge gap identified in earlier sections.

These findings carry significant practical implications. For clinical training, there is a clear need to incorporate reflective modules that prepare physicians not only to interpret AI outputs but to critically engage with them in the context of their professional judgment (Brierley et al., 2019). Curricula in medical education should include scenario-based learning on AI-human disagreement, emphasizing ethical reasoning, uncertainty tolerance, and communication strategies.

At the policy level, regulatory frameworks should account for the relational dynamics uncovered in this study by promoting guidelines that clarify clinician accountability when AI recommendations diverge from clinical reasoning. In LMIC contexts, where institutional safeguards may be uneven, policy must ensure that the integration of AI respects local decision-making norms and power structures.

For system designers, the insights underscore the importance of developing AI interfaces that are transparent, dialogic, and adaptable to clinician feedback. Rather than binary recommendation systems, designers should consider incorporating justifications, confidence levels, and interactive elements that foster physician trust and promote shared decision-making. Systems should be context-sensitive, allowing customization based on clinical setting and user profile.

The implications of these findings extend beyond individual clinical encounters, shedding light on broader professional and organizational dynamics in healthcare systems where AI is increasingly embedded (Porter et al., 2016). From a phenomenological perspective, the physician's experience reveals a deep ethical and emotional negotiation that challenges the prevailing discourse of AI as a neutral decision-support tool. The results highlight a shift in professional identity and relational dynamics within medical teams, where clinical authority is no longer solely human (Boers et al., 2020). This underscores the need for healthcare institutions to create reflective spaces where clinicians can critically engage with the changing nature of their work and articulate their experiences without fear of judgment or institutional pressure. Furthermore, the findings are particularly relevant in resource-constrained environments where AI implementation may occur rapidly without sufficient attention to clinician readiness or psychological adaptation.

While this study offers valuable insights, several limitations must be acknowledged. The sample was limited to physicians working in urban tertiary hospitals with access to advanced AI tools, which may not reflect the experiences of clinicians in rural or under-resourced settings (Vivat et al., 2019). Additionally, the interpretative nature of the phenomenological approach emphasizes depth over breadth, which limits the generalizability of the findings. The narratives collected represent contextually situated experiences, shaped by institutional culture and technological maturity, and thus may not capture variations across different health systems or specialties. These limitations, however,

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do not weaken the study's contributions but rather highlight the importance of context in understanding human-technology interactions.

Future research could build on these findings by examining how experiences with AI differ across clinical roles, healthcare hierarchies, and cultural settings. Longitudinal studies may also be valuable to explore how these experiences evolve over time as clinicians adapt to or resist technological change. Additionally, comparative phenomenological research across countries or healthcare models could deepen our understanding of how sociocultural values influence clinicians' interpretations of AI. By pursuing these directions, future studies can contribute to a richer, more contextualized understanding of ethical and experiential dimensions of AI in healthcare, ultimately informing more human-centered design and implementation practices.

CONCLUSION

This study explored how physicians experience conflicts between their clinical judgment and AI-generated recommendations within real-world healthcare settings. The findings revealed that these experiences are shaped by emotional strain, ethical uncertainty, and shifting perceptions of professional identity. Physicians did not view AI as a neutral tool but as an influential presence that redefined their sense of agency and responsibility. By using an interpretative phenomenological approach, this research captured the depth of meaning that previous quantitative studies often overlooked.

The insights gained provide a human-centered understanding of AI integration, offering practical implications for system design, training, and organizational support. However, the study's findings should be interpreted with caution, as they are limited by the small sample size, geographic concentration within a single region, and the specific institutional contexts of participating hospitals. These methodological constraints may affect the generalizability of the results. While this study offers foundational insights, further exploration—particularly in diverse cultural and clinical settings—remains necessary to enrich our understanding of long-term clinician–AI dynamics.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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