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Physicians' Experiences of Trust, Ethics, and Identity in AI-Based Clinical Decision Support Systems

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ABSTRACT

Artificial intelligence (AI) has emerged as a transformative force in healthcare, reshaping diagnostic processes, treatment planning, and patient management. Within this broad landscape, little is known about how physicians experience the psychological, ethical, and professional dimensions of engaging with AI-based clinical decision support systems (AI-CDSS). Despite rapid adoption, existing research has focused primarily on technical performance, leaving unanswered questions about how physicians negotiate trust, autonomy, and accountability in everyday clinical decision-making. This study specifically asks: how do physicians construct, interpret, and manage their sense of trust, ethical responsibility, and professional identity when interacting with AI-CDSS in clinical practice? Here, we apply an interpretative phenomenological approach to examine physicians' lived experiences with AI-CDSS and to explore the meanings they ascribe to this evolving collaboration. Semi-structured interviews were conducted with 18 physicians across multiple specialties, and transcripts were analyzed thematically using interpretative phenomenological analysis. The findings reveal four key themes: ambivalent trust in AI recommendations, emotional strain and identity challenges, ethical dilemmas in shared decision-making, and adaptive strategies for integrating AI into practice. Physicians reported valuing the efficiency of AI while struggling with feelings of diminished autonomy and heightened moral responsibility. Direct quotations illustrate how the presence of AI in clinical practice is experienced not as neutral support but as a transformative influence on the essence of professional responsibility. Overall, the study sharpens the focus on the lived question of "what it means to be a physician in the age of AI," advancing current understanding by highlighting that the success of AI integration depends not only on technological precision but also on human-centered factors of trust, identity, and ethics. The study underscores the importance of phenomenological inquiry for future research and suggests that sustainable AI adoption must integrate both technical and experiential dimensions of medical practice.

INTRODUCTION

Artificial intelligence (AI) has become one of the most transformative developments in contemporary healthcare, reshaping how clinical decisions are supported and delivered. Across hospitals and clinics, AI-driven clinical decision support systems (AI-CDSS) are increasingly embedded into diagnostic processes, treatment planning, and patient monitoring (Cao et al., 2025). These technologies promise efficiency, accuracy, and consistency in clinical practice, creating new possibilities for improving patient outcomes and reducing human error (Y. Wang et al., 2025). Beyond their technical capacity, however, AI systems also intersect with deeply human domains, influencing how medical professionals perceive, interpret, and act within their daily work.

The integration of AI into healthcare carries profound implications not only for clinical accuracy but also for the subjective experience of physicians. Medical decision-making has

historically been understood as a domain of professional judgment, clinical expertise, and ethical responsibility. The introduction of AI shifts this paradigm, as physicians are increasingly asked to engage with algorithmic outputs that may either affirm or challenge their own expertise (Anani et al., 2025). Such dynamics place physicians at the crossroads of tradition and innovation, where the balance between human intuition and machine-driven analysis becomes a lived and often contested experience.

Understanding this phenomenon requires attention not only to the measurable outcomes of AI adoption but also to the lived realities of those directly involved in its use. Physicians' encounters with AI are not merely technical interactions; they embody dimensions of trust, identity, autonomy, and accountability (Guo et al., 2025). These dimensions are inherently subjective, shaped by personal histories, professional roles, and cultural contexts within the medical field (Mohammed & Khalid, 2025). Exploring these experiences provides a window into the complex social processes that underlie technological adoption and adaptation in healthcare.

Given these considerations, there is a critical need to move beyond surface-level descriptions of AI effectiveness toward a deeper exploration of how medical professionals experience, interpret, and assign meaning to their engagement with AI-CDSS (Erdat & Çay Şenler, 2025). Such inquiry aligns closely with the phenomenological approach, which seeks to illuminate the essence of human experience as it is lived (Liu et al., 2025). By foregrounding the voices of physicians, phenomenology offers a pathway to uncover the subtle, often overlooked aspects of technological integration—particularly those that touch upon ethical dilemmas, emotional responses, and the evolving sense of professional identity.

Research on the lived experiences of individuals within emerging technological environments has increasingly become a central concern across healthcare and social sciences (Erol et al., 2025). Within clinical practice, attention has shifted from evaluating only the functional capacity of artificial intelligence to examining how such technologies shape the human dimension of medical work. This focus reflects a broader recognition that professional adaptation to AI is not purely technical but deeply experiential, influencing identity, trust, and ethical responsibility in ways that cannot be reduced to numerical measures.

Despite its growing significance, exploring the meaning of physicians' experiences with AI presents considerable methodological challenges (Florido-Benítez & Coca-Stefaniak, 2025). Quantitative approaches, which dominate much of the existing scholarship, are limited in their capacity to capture the subtleties of subjective experience (Volpe, 2025). While surveys and statistical analyses provide valuable insights into general trends and adoption rates, they often overlook the nuanced, context-dependent realities that physicians face in daily practice. Such approaches tend to underrepresent the emotional, ethical, and interpretive aspects of medical decision-making, which are critical for understanding how clinicians truly engage with AI systems.

This limitation has left a gap in understanding the essence of the phenomenon in its fullest sense. The complexity of physicians' encounters with AI requires methods that allow for deeper engagement with lived meaning, beyond surface-level descriptions of acceptance or resistance (Chen & Hu, 2025). Previous methodologies, while informative, fall short of illuminating the experiential core of how doctors negotiate trust, autonomy, and moral accountability in AI-supported decision-making. Consequently, a more suitable approach is needed—one that enables the articulation of voices, emotions, and reflections often silenced in aggregate data.

Current approaches to the integration of artificial intelligence in healthcare have largely relied on practical solutions emphasizing efficiency, predictive accuracy, and clinical utility (Rickli & Vllasi, 2025). These frameworks, while valuable, often treat physicians' interactions with AI systems as technical adjustments rather than deeply human experiences. As a result, the subjective and emotional dimensions of physicians' encounters with AI-based decision support remain underexplored, despite their central role in shaping acceptance and meaningful use.

Traditional methodologies, particularly those rooted in quantitative or survey-based designs, provide insights into adoption rates and general attitudes but fall short in capturing the nuanced ways

physicians interpret, negotiate, and assign meaning to their reliance on AI in clinical decision-making. Such methods reduce complex lived experiences into measurable variables, leaving behind the rich contextual and existential aspects of how AI influences trust, autonomy, and professional identity (Holtbrügge et al., 2025). Consequently, these approaches have produced understandings that are broad but not sufficiently deep to reflect the essence of physicians' realities.

This methodological limitation underscores the necessity of employing phenomenology as an alternative (Lee et al., 2025). A phenomenological lens allows for the systematic exploration of lived experience, giving voice to the subtle meanings, ethical dilemmas, and psychological tensions that quantitative measures cannot adequately represent. By illuminating the essence of how physicians experience AI in their professional lives, phenomenology offers a pathway to bridge the current gap in understanding—moving beyond what is observable toward what is deeply felt and interpreted.

Previous studies on artificial intelligence in healthcare have primarily examined its technical accuracy, adoption patterns, and ethical implications in abstract terms (Kocak et al., 2025). While valuable, these works have often overlooked the subjective realities of physicians who interact with AI in daily clinical practice. Research on trust in AI, professional identity, and decision-making ethics (Rad, 2025) has suggested that these issues extend beyond measurable outcomes and into lived experience. Yet, the meanings physicians ascribe to their encounters with AI remain largely unexplored (Ozbey & Yaşa, 2025). This gap highlights the need for a qualitative approach that privileges depth over breadth.

To address this, the present study applies an interpretative phenomenological approach that allows the exploration of physicians' personal meanings when engaging with AI-based decision support systems (Anser et al., 2025). This approach was chosen because it offers a systematic yet flexible way to access subjective experiences, moving beyond generalized attitudes to capture what is lived, felt, and interpreted. By focusing on narratives, the study illuminates how physicians negotiate trust, autonomy, and ethical responsibility when AI is part of their decision-making process (Kocak & Akçali, 2025). In doing so, it directly responds to the knowledge gap identified earlier. This method ensures that the essence of the phenomenon is represented through the voices of participants.

The structure of this article is organized to guide readers through a logical progression. The introduction provides the broader context of AI in healthcare and narrows to the specific research gap concerning physicians' lived experiences. The methods section explains the phenomenological design, participant selection, and procedures for data collection and analysis (Richarde et al., 2025). The results present emergent themes supported by direct quotations to illustrate the essence of experience (M. Wang et al., 2025). The discussion elaborates on the findings in light of existing literature, while the conclusion synthesizes contributions and implications for practice and future research.

RESEARCH METHODS

Study Design

This study employed a phenomenological design with an interpretative orientation, emphasizing the exploration of lived experiences and subjective meanings associated with the use of artificial intelligence in clinical decision-making. Phenomenology was selected because of its capacity to uncover the essence of personal and professional experiences as they are lived, rather than as abstracted concepts or statistical measures. The interpretative phenomenological approach enabled the study to engage with physicians' reflections on ethical, psychological, and professional challenges, focusing on how these experiences were constructed and understood in real clinical contexts. This design provided the flexibility to capture nuanced insights that are central to understanding the human dimension of interaction with AI-based decision support systems.

Participants

Participants consisted of practicing physicians with direct experience using artificial intelligence–driven clinical decision support systems. Inclusion criteria required participants to have

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at least three years of clinical practice, active engagement with AI decision tools in their daily medical routines, and willingness to share their professional reflections. Exclusion criteria involved physicians without prior exposure to AI tools or those in administrative roles without direct patient-care responsibilities.

A purposive sampling strategy was applied to ensure the inclusion of individuals most relevant to the research focus. A total of 18 physicians participated, representing a range of medical specialties, including oncology, cardiology, and internal medicine. Participants included both male and female clinicians, aged between 32 and 58 years, with a mean professional experience of 12 years. This diversity allowed for the exploration of varied perspectives while maintaining relevance to the phenomenon under study.

Data Collection

Data were collected through semi-structured, in-depth interviews guided by an interview protocol designed to elicit detailed reflections on physicians' experiences with AI in clinical decision-making. Interviews were conducted face-to-face in private hospital meeting rooms or, when necessary, via secure video conferencing platforms to accommodate participants' schedules. Each interview lasted between 60 and 90 minutes and was audio-recorded with prior consent.

The interview protocol consisted of open-ended questions covering areas such as trust in AI recommendations, ethical considerations, perceived professional autonomy, and emotional responses to AI integration. Probes and follow-up questions were used to encourage participants to elaborate on their narratives. The interview environment was designed to ensure comfort, privacy, and confidentiality, allowing participants to share experiences openly.

Data Analysis

Data were analyzed using Interpretative Phenomenological Analysis (IPA), following a systematic and iterative process. Transcribed interviews were read multiple times to achieve immersion in the data, after which significant statements were coded into meaning units. These meaning units were clustered into emerging themes, which were then refined into higher-order categories reflecting shared patterns across participants.

The analysis emphasized both descriptive and interpretative levels, allowing for the identification of essential meanings underlying physicians' experiences with AI-based decision-making. Software support (NVivo) was utilized to assist with data organization and retrieval but was not a substitute for the interpretative process. The final themes represented the synthesized essence of the phenomenon, grounded in participants' own voices and contextualized within their professional realities.

RESULTS

Negotiating Trust in AI-Assisted Decisions

One of the most prominent themes was physicians' ambivalent trust toward AI recommendations. While participants acknowledged the efficiency and diagnostic accuracy of AI-CDSS, they often struggled with the extent to which they could rely on machine-generated suggestions in life-critical situations.

As one participant noted:

"I know the system is statistically more accurate than my intuition, but in the end, it feels like I am handing over my responsibility to a machine. That makes me uneasy."

This illustrates how trust in AI is not merely a technical matter but also a deeply personal and ethical negotiation. Physicians simultaneously valued the technological precision yet resisted the perception of being replaced in their role as ultimate decision-makers. Beyond individual hesitation, the interpretative analysis suggests that trust operates as a dynamic balance between confidence in

algorithmic logic and the preservation of moral agency. Physicians were not rejecting AI per se but continuously recalibrating trust according to the perceived stakes of each clinical encounter.

Emotional Strain and Professional Identity

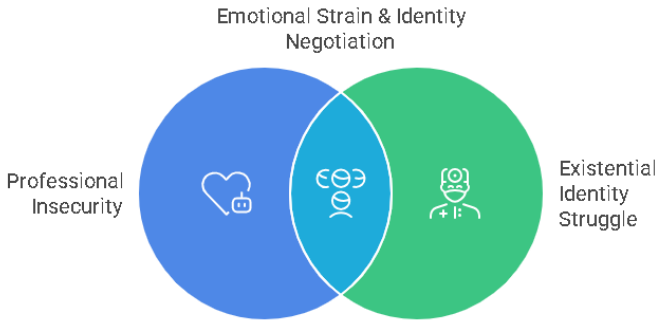
Another key theme concerned the emotional and psychological strain that emerged when physicians experienced AI as a challenge to their professional identity. Many participants articulated a sense of reduced autonomy, which they perceived as diminishing their expertise.

One physician expressed:

"Sometimes it feels like the AI is the real expert, and I am just a messenger to the patient. That shakes my confidence as a clinician."

This tension highlights how AI not only reshapes decision-making processes but also impacts physicians' self-perception. The fear of being overshadowed by algorithms introduced a subtle yet persistent form of anxiety about the relevance of human expertise in future medical practice. A deeper interpretative reading reveals that these feelings extend beyond professional insecurity—they reflect an existential struggle to redefine what it means to 'know' and 'care' in an era of algorithmic reasoning. The physicians' narratives convey that emotional strain is intertwined with identity negotiation, where professional worth becomes reanchored not in diagnostic precision alone but in relational and ethical competence.

Navigating Identity in the Age of AI



Ethical Dilemmas in Shared Decision-Making

The introduction of AI-CDSS created new layers of ethical dilemmas in clinical care. Physicians described difficulties when AI recommendations contradicted their clinical judgment, particularly in contexts involving vulnerable patients. They expressed concern about accountability and moral responsibility when patients' outcomes were at stake.

As one respondent emphasized:

"If I follow the AI and the patient suffers, who is responsible? The system, the hospital, or me? But if I ignore it and I am wrong, I feel guilty. Either way, I carry the burden."

These reflections reveal how physicians perceive themselves as morally accountable, even when AI is formally introduced as a supportive tool. The sense of ethical conflict underscores the gap between technological capabilities and the lived moral reality of medical practice. Interpretatively, this theme demonstrates that physicians' moral reasoning remains anchored in human empathy and relational ethics, not institutional protocol. The analysis indicates that ethical discomfort emerges precisely where AI's procedural neutrality collides with the emotional weight of moral accountability—highlighting that ethical decision-making in AI contexts is an embodied, affective, and situational process.

Adaptive Strategies and Resistance

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Despite challenges, participants also developed adaptive strategies to navigate AI integration. Some physicians used AI-CDSS selectively, cross-referencing its suggestions with personal expertise, while others deliberately resisted overreliance on technology.

One participant explained:

"I use the AI when I feel uncertain, but I never let it dictate my decision. It is a tool, not a replacement. I still want the final say."

This shows how physicians actively negotiate boundaries in human-AI collaboration. Their resistance was not mere rejection but rather a conscious act of maintaining professional integrity and patient-centered care. Through interpretative synthesis, this resistance emerges as a form of moral agency rather than skepticism. Physicians' selective engagement with AI reflects a pragmatic adaptation strategy aimed at integrating innovation without eroding clinical wisdom. This highlights the formation of a new ethical equilibrium—one that reconciles technological assistance with the enduring values of compassion, responsibility, and judgment in medical practice.

DISCUSSION

This study revealed that physicians' lived experiences with AI-based clinical decision support systems are shaped by tensions between technological reliability and the preservation of professional identity. These findings address the central research question by showing how trust, autonomy, and ethical responsibility intersect in the everyday practice of medical decision-making.

Contribution of Findings to the Research Question

The results provide a direct response to the guiding question of how physicians experience the psychological and ethical dimensions of AI-supported decision-making (Asghar et al., 2025). The findings highlight that physicians do not merely accept or reject AI recommendations; rather, they actively negotiate their trust in the system, often weighing technological accuracy against professional judgment. This negotiation underscores their ongoing struggle to balance clinical responsibility with reliance on AI tools. Moreover, the study demonstrates that physicians' experiences extend beyond technical use and enter deeply personal domains of professional identity, emotional well-being, and moral accountability (Srivastava et al., 2025). These insights contribute a more nuanced understanding of AI adoption by illuminating the meanings and challenges embedded in physicians' daily encounters with technology.

Relationship to Existing Literature and Theory

The findings resonate with prior scholarship that has identified ambivalence and resistance among clinicians toward AI adoption (Alruwaili & Mgammal, 2025). However, this study extends those insights by capturing how such ambivalence is not merely a rational calculation of risk and benefit but an existential negotiation of identity and accountability. Earlier work suggested that physicians' trust in AI depended on accuracy and transparency (Cho et al., 2025), whereas the present study shows that trust is also shaped by ethical dilemmas and emotional strain when professional judgment conflicts with algorithmic recommendations. In alignment with interpretative phenomenological theory, these results emphasize that technology is experienced not as an external tool but as a relational presence that reshapes the meaning of medical practice (van den Berg, 2025). By connecting empirical findings with this broader theoretical lens, the study underscores that AI is not neutral but transformative, influencing both the context and essence of clinical responsibility.

Implications of the Findings

The findings of this study carry both scientific and practical implications for healthcare systems increasingly shaped by AI-based decision support. From a professional standpoint, the lived experiences of physicians highlight the need for training programs that address not only technical competence but also psychological readiness and ethical reflection. On a social level, the results suggest that the integration of AI cannot be separated from broader cultural understandings of trust in technology and the role of human expertise in medicine (Qin et al., 2025). By emphasizing the subjective meanings of physicians' experiences, this study underscores that the success of AI adoption

depends as much on cultivating trust, autonomy, and moral clarity as it does on algorithmic precision. These insights extend beyond the immediate study population, offering relevance for global contexts where AI systems are reshaping healthcare delivery.

Study Limitations

While the findings provide important insights, several limitations must be acknowledged. The use of an interpretative phenomenological approach means that the study is intentionally focused on depth rather than breadth, which limits generalizability to all physician populations. Participants were drawn from specific clinical contexts where AI-CDSS was in active use, and experiences may differ in other healthcare systems or cultural settings. Additionally, reliance on self-reported narratives introduces the possibility of recall bias or selective disclosure, even though strategies such as member checking and triangulation were employed to enhance validity (Heil et al., 2025). These limitations do not diminish the significance of the findings but instead highlight the contextual and interpretive nature of phenomenological inquiry.

Prospective Directions for Future Research

The insights generated by this study open several avenues for future investigation. Future research could expand the scope by including comparative studies across different healthcare systems, thereby examining how cultural and institutional factors shape physicians' experiences with AI. Longitudinal studies may also provide a deeper understanding of how trust, autonomy, and identity evolve as AI becomes more deeply integrated into clinical practice (Suchikova, 2025). Moreover, interdisciplinary research combining phenomenology with fields such as bioethics, sociology, or organizational psychology could further illuminate the broader implications of human–AI collaboration in medicine (Almheiri et al., 2025). By building on the interpretative findings of this study, future work can contribute to developing ethically sound, culturally sensitive, and professionally sustainable models of AI adoption in healthcare.

CONCLUSION

This study explored physicians' lived experiences with AI-based clinical decision support systems, focusing on the psychological, ethical, and professional challenges that arise in daily practice. The findings revealed that physicians negotiate trust in AI while striving to preserve their professional identity, which creates tensions between technological reliability and human responsibility. The study also showed that emotional strain, ethical dilemmas, and adaptive strategies are central to understanding how physicians integrate AI into their clinical decisions. These insights contribute to existing literature by addressing gaps left by quantitative studies, offering a richer and more nuanced perspective on the phenomenon.

Beyond restating these findings, this research provides several novel contributions. First, it conceptualizes trust in AI as a dynamic moral negotiation rather than a fixed cognitive attitude, highlighting how physicians continuously recalibrate confidence and accountability in real-time clinical settings. Second, it introduces an interpretative framework linking emotional strain to professional identity reconstruction, offering a new lens for understanding human-AI collaboration in medicine. Third, it demonstrates that resistance to AI is not mere skepticism but an adaptive expression of moral agency. These contributions extend phenomenological inquiry into the ethical and affective dimensions of digital medical practice, positioning physicians as co-evolving actors in technological ecosystems rather than passive users.

From a policy and practice standpoint, the findings suggest that AI integration must move beyond performance metrics toward models of "ethical usability" that recognize clinicians' emotional and moral labor. Healthcare institutions should establish guidelines for shared accountability, ensure transparent algorithmic design, and include physicians in co-development processes to foster trust and ownership. Training programs should also incorporate ethical reasoning and reflective practice to prepare clinicians for the interpretative complexities of AI-assisted care. Future research may build on this work by examining cross-cultural contexts and longitudinal experiences to further clarify how physicians adapt to evolving technological landscapes. Long-term ethnographic or participatory

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studies could provide deeper insights into how institutional culture, regulation, and AI design collectively shape physicians' ethical engagement with technology.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest regarding the publication of this article.

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