Journal of Digital Health Innovation and Medical Technology
Vol. 2 No. 1 Maret 2026
E-ISSN: 3090-0816
Open Access: https://journals.ai-mrc.com/jdhimt

Clinicians' Meaning-Making of AI-Based Decision Support in Telemedicine

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Article Info

Article history:
Received 27-01-2026
Revised 21-02-2026
Accepted 17-03-2026

Keyword:
Clinicians' Experience; Meaning-Making; Artificial Intelligence; Clinical Decision Support Systems; Telemedicine; Medical Informatics

ABSTRACT

The rapid integration of artificial intelligence into telemedicine has reshaped clinical decision-making within the broader field of medical informatics, emphasizing efficiency, scalability, and data-driven care. Within this context, AI-based clinical decision support systems are increasingly embedded in remote consultations, yet their role is often understood through technical performance rather than clinicians' lived experiences of using them in practice. What remains insufficiently understood is how clinicians subjectively experience, interpret, and integrate AI-generated recommendations during telemedicine encounters, and how these experiences shape clinical judgment. Here, an interpretative phenomenological approach is used to explore clinicians' lived experiences . This qualitative study involved 15 clinicians (8 physicians and 7 nurse practitioners) working in hospital- and primary care-based telemedicine services who had at least one year of experience using AI-supported clinical decision support systems. Participants were recruited through purposive sampling to ensure direct and sustained engagement with AI tools in routine remote consultations. Data were generated through in-depth semi-structured interviews conducted online between March and June 2025, each lasting 60–90 minutes, and were analyzed using Interpretative Phenomenological Analysis following a systematic process of iterative coding, case-by-case analysis, and cross-case thematic development to ensure analytic rigor and transparency. The analysis identified themes that reflect clinicians' ongoing negotiation between trust and skepticism, ethical responsibility, workflow reconfiguration, and the preservation of the doctor–patient relationship. These findings show that AI functions as an interpretive partner that intensifies reflective judgment rather than replacing professional authority. These insights advance understanding of AI-supported telemedicine by foregrounding clinicians' meaning-making processes and highlight the need for human-centered AI design and future research that further explores experiential dimensions of digital healthcare.

INTRODUCTION

The rapid integration of digital technologies into healthcare has transformed how clinical services are delivered, interpreted, and experienced. Within this broader transformation, medical informatics and telemedicine have emerged as central domains shaping contemporary healthcare practice (Romero-Brufau et al., 2020). Telemedicine platforms, increasingly augmented by artificial intelligence based clinical decision support systems (AI-CDSS), are now routinely embedded in diagnostic reasoning, treatment planning, and patient monitoring (Gupta et al., 2023). These developments are widely framed as solutions to challenges such as limited access to care, clinical workload, and variability in decision-making, positioning AI as a critical component of modern, data-driven healthcare systems.

Beyond their technical capabilities, AI-enabled telemedicine systems operate within complex social and professional environments (Lin et al., 2024). Clinical encounters mediated by digital

platforms reshape traditional interactions between clinicians and patients, altering communication dynamics, professional roles, and perceptions of authority (Mukhlis et al. 2023). While existing scholarship has substantially advanced understanding of system accuracy, efficiency, and adoption, these perspectives often foreground technology as an objective tool rather than as a phenomenon embedded in lived clinical practice. As a result, the human experience of engaging with AI-supported systems particularly how clinicians perceive, feel, and make sense of algorithmic input during real-time decision-making remains insufficiently illuminated.

The relevance of this phenomenon extends beyond technical performance to the subjective dimension of clinical work. For clinicians, decision-making is not merely a cognitive process but a lived experience shaped by professional responsibility, ethical accountability, patient narratives, and contextual constraints (Duevel et al., 2025). The introduction of AI recommendations into telemedicine consultations adds a new interpretive layer to this experience, influencing how clinicians understand their role, negotiate uncertainty, and sustain trust with patients (Kastrup et al., 2023). These experiences are inherently social and relational, situated within broader cultural expectations surrounding expertise, technology, and care.

Given this context, there is a growing need to move beyond evaluative and instrumental accounts of AI in healthcare toward a deeper exploration of how such technologies are experienced and given meaning in practice (Vellakani & Pushbam, 2020). A phenomenological perspective offers a way to access these experiential dimensions by attending to clinicians' lived realities as they engage with AI-CDSS in telemedicine settings. By foregrounding meaning, interpretation, and situated experience, phenomenology provides a framework for understanding not only what clinicians do with AI, but how they experience its presence in their professional lifeworld (Mukhlis & Saidah, 2025). This emphasis on lived experience is essential for developing a more human-centered understanding of AI integration in healthcare and for informing future digital health innovations that align with the realities of clinical practice.

Within the broader domain of digital health, research on clinicians' experiences of interacting with AI-based clinical decision support systems (AI-CDSS) has increasingly gained attention as a critical area of inquiry (Lorenzini et al., 2023). As AI becomes embedded in telemedicine workflows, scholars have begun to recognize that its influence extends beyond technical performance to the experiential and interpretive dimensions of clinical practice (de la Vega et al., 2021). Studies have highlighted that clinicians do not merely use AI outputs instrumentally but engage with them in ways shaped by professional judgment, ethical responsibility, and the relational context of patient care. This growing body of work underscores the importance of examining how clinicians experience, interpret, and negotiate AI recommendations within real-world telemedicine encounters.

Despite this recognition, much of the existing literature has approached the phenomenon through quantitative or technology-centered lenses, such as usability testing, technology acceptance models, or performance evaluations (Tang et al., 2022). While these approaches provide valuable insights into adoption rates and system efficiency, they face inherent methodological limitations when applied to questions of meaning and lived experience (Mukhlis, 2025). Quantitative metrics and standardized surveys are often insufficient to capture the nuanced ways clinicians experience uncertainty, trust, responsibility, and interpretive tension when engaging with algorithmic recommendations in complex clinical situations. As a result, the subjective and contextual dimensions of AI-supported decision-making remain only partially visible.

These methodological constraints have led to a fragmented understanding of the phenomenon, where clinicians' experiences are frequently reduced to attitudinal measures or behavioral outcomes. Such approaches tend to overlook how AI recommendations are situated within clinicians' professional lifeworlds, where decision-making is shaped by prior experience, patient narratives, institutional norms, and ethical considerations (Strauss et al., 2023). Consequently, previous methods have proven limited in their ability to access the essence of clinicians' lived experiences with AI in telemedicine (Festor et al., 2022). This limitation points to the need for approaches capable of engaging deeply with meaning-making processes, enabling a more comprehensive understanding of how AI is experienced, interpreted, and enacted within clinical practice.

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Current efforts to understand the integration of AI-based clinical decision support systems in telemedicine have largely relied on pragmatic and solution-oriented approaches, such as technology acceptance models, usability assessments, and performance evaluations (Peek et al., 2025). These approaches are commonly used to address practical concerns related to system adoption, efficiency, and reliability, and they have contributed important insights into how AI technologies are implemented in clinical settings (Mukhlis & Abdullah, 2025). However, such solutions primarily frame AI as a functional tool, emphasizing measurable outcomes while assuming that clinicians' engagement with AI can be adequately captured through predefined variables.

This dominant reliance on practical and quantitative approaches presents a significant limitation when the phenomenon under investigation involves lived experience and meaning-making. Standardized instruments and evaluative metrics are not well suited to capture how clinicians subjectively experience AI recommendations during telemedicine consultations particularly in moments of uncertainty, ethical tension, or interpretive conflict (Galle et al., 2021). As a result, existing research often provides a fragmented or surface-level understanding, overlooking how clinicians reconcile algorithmic guidance with professional judgment, responsibility, and patient-centered care (Monkowski et al., 2020). Consequently, the experiential depth of clinicians' interactions with AI remains underexplored, leaving critical aspects of the phenomenon insufficiently understood.

Addressing this gap requires an alternative approach capable of accessing the essence of clinicians' experiences rather than merely their observable behaviors or attitudes. A phenomenological perspective offers such an approach by foregrounding how clinicians perceive, interpret, and give meaning to AI-supported decision-making within the contextual realities of telemedicine practice (Datta et al., 2023). By moving beyond instrumental explanations toward an exploration of lived experience, phenomenology enables a more holistic and nuanced understanding of how AI is enacted in clinical decision-making (Mukhlis et al. 2025). This shift is essential for generating insights that align technological innovation with the human, ethical, and relational dimensions of healthcare practice.

Previous studies have examined the use of artificial intelligence in telemedicine primarily through the lenses of system performance, usability, and technology acceptance. Research has also explored clinicians' perceptions of AI, highlighting issues of trust, transparency, and professional autonomy in digital healthcare settings (Lee et al., 2021). Conceptual frameworks from medical informatics and human–computer interaction have contributed to understanding how clinicians interact with decision support technologies (MacKwood et al., 2022). However, these studies often prioritize functional outcomes over experiential meaning. As a result, the lived experience of clinicians engaging with AI recommendations in telemedicine remains only partially addressed in the literature.

To address this limitation, this study adopts an interpretative phenomenological approach to explore how clinicians experience and make sense of AI-based clinical decision support during telemedicine consultations. Phenomenology is particularly suited to examining how meaning emerges through clinicians' interactions with technology within specific clinical and social contexts. By focusing on lived experience, this approach responds directly to the knowledge gap identified earlier, where existing methods have been insufficient to capture the depth of clinicians' meaning-making processes. The study therefore seeks to illuminate how clinicians interpret, negotiate, and integrate AI recommendations into their professional judgment. In doing so, it provides insight into the human dimensions of AI-supported clinical decision-making.

This article is structured to guide readers through a coherent phenomenological inquiry. The introduction presents the broader context of AI and telemedicine, followed by a focused discussion of the experiential challenges that motivate the study. The method section outlines the phenomenological design, participant selection, data collection, and analytic approach. The results section presents thematic findings grounded in clinicians' narratives. Finally, the discussion and conclusion reflect on the implications of these findings for theory, practice, and future research.

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RESEARCH METHODS

Study Design

This study employed a qualitative phenomenological research design to explore clinicians' lived experiences of integrating AI-based clinical decision support systems within telemedicine consultations (Bunnell et al., 2020). Phenomenology was selected because it is specifically oriented toward understanding how individuals experience, interpret, and assign meaning to a particular phenomenon in their everyday professional context. Rather than focusing on measurement or system performance, this approach enables an in-depth exploration of subjective experience, capturing how clinicians perceive, negotiate, and make sense of AI recommendations during remote clinical decision-making.

An interpretative hermeneutic phenomenological approach, grounded in Heideggerian philosophy, guided the study. This approach assumes that experiences are not encountered as neutral events but are always interpreted through prior knowledge, professional responsibility, and contextual engagement. Accordingly, the design allowed for the examination of clinicians' meaning-making processes as they interact with AI-CDSS in telemedicine, acknowledging the inseparability of experience, interpretation, and clinical practice.

Participants

Participants consisted of practicing physicians who routinely used AI-based clinical decision support systems within telemedicine settings (Bajgain et al., 2023). A purposive sampling strategy was applied to ensure that participants possessed direct and relevant experience with the phenomenon under investigation. Inclusion criteria comprised: (1) licensed physicians, (2) active involvement in telemedicine consultations, and (3) regular exposure to AI-CDSS as part of clinical decision-making. Clinicians without experience using AI-supported systems in telemedicine or those exclusively practicing face-to-face care were excluded.

The final sample comprised 15 physicians. Sample size was determined iteratively in line with interpretative phenomenological research, prioritizing depth of idiographic analysis over statistical representativeness. Recruitment and interviewing proceeded until data saturation was achieved, operationalized as the point at which no substantively new experiential insights, interpretive meanings, or thematic patterns emerged in successive interviews.

The final sample included a diverse group of clinicians in terms of clinical specialty, years of professional experience, and telemedicine exposure. Such variation was considered essential for capturing a rich and nuanced range of experiential accounts while maintaining coherence around the shared phenomenon.

Data Collection

Data were collected through in-depth, semi-structured interviews, complemented by observational notes drawn from digital ethnographic engagement with telemedicine workflows. Interviews were conducted using an interview guide designed to elicit detailed reflections on clinicians' experiences with AI recommendations, including perceptions of trust, responsibility, workflow integration, and patient interaction. The semi-structured format allowed flexibility for participants to elaborate on personally meaningful aspects of their experiences.

Interviews were conducted remotely via secure video conferencing platforms, reflecting the telemedicine context of the study. Each interview lasted approximately 60–90 minutes and was conducted in a quiet and private environment to promote comfort and openness. With participants' consent, all interviews were audio-recorded and transcribed verbatim. Observational notes were documented during and immediately after interviews to capture contextual details and reflexive insights relevant to interpretation.

Data Analysis

Data analysis followed the principles of Interpretative Phenomenological Analysis (IPA). Transcripts were read and re-read to achieve immersion in the data, allowing an initial holistic

understanding of each participant's account. Meaning units were then identified through detailed line-by-line engagement, focusing on expressions that reflected how participants experienced and interpreted AI-supported decision-making.

Emergent themes were developed within individual cases before being examined across cases to identify shared patterns and convergences. This idiographic-to-cross-case process enabled the articulation of higher-order themes that captured the essential structures of the phenomenon while preserving the uniqueness of individual experiences. Qualitative data management software (NVivo) was used to support systematic organization and retrieval of coded data, without replacing the interpretative engagement central to phenomenological analysis.

RESULTS

Navigating Trust and Skepticism Toward AI Recommendations

Clinicians' experiences were characterized by an ongoing tension between trust and skepticism when engaging with AI-generated recommendations during telemedicine consultations. Participants did not describe trust as a fixed attribute of the system but as a situational and evolving judgment shaped by clinical context, prior experience, and perceived transparency of the AI output.

Several clinicians expressed cautious trust, acknowledging the usefulness of AI while simultaneously maintaining professional distance. One participant stated:

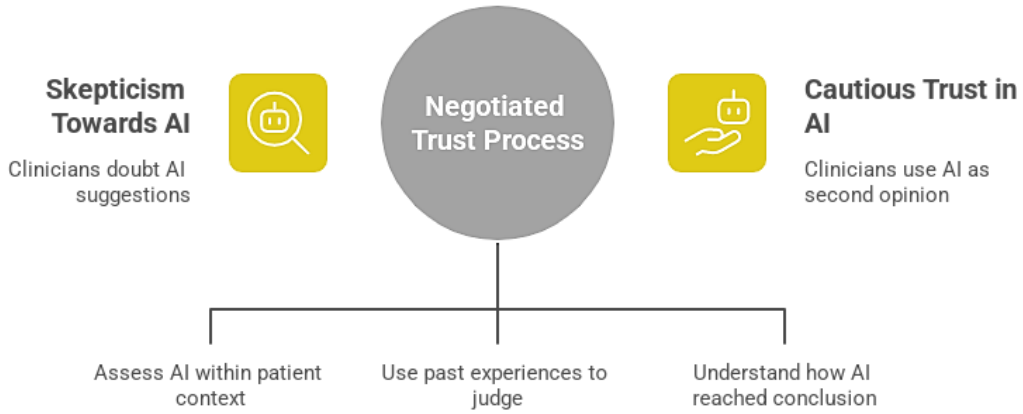
"I don't blindly follow what the system suggests. It feels more like a second opinion that I need to interrogate before I can accept it."

Others described moments of skepticism, particularly when AI recommendations conflicted with their clinical intuition or patient narratives:

"When the recommendation doesn't align with what the patient is telling me, I feel uneasy. That's when I start questioning how the algorithm arrived at that conclusion."

Trust, therefore, emerged as a negotiated process rather than an automatic response, highlighting clinicians' active role in evaluating AI outputs within telemedicine encounters.

Building Trust in AI Recommendations



Clinical Responsibility and Ethical Accountability in AI-Supported Decisions

A dominant theme across participants' accounts was the enduring sense of clinical responsibility, even when AI-CDSS was involved in decision-making. Clinicians consistently emphasized that ethical accountability remained firmly with them, not with the technology.

Participants articulated a clear boundary between assistance and authority:

"At the end of the day, if something goes wrong, it's my name, not the algorithm's. That responsibility never shifts."

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This sense of accountability often led clinicians to scrutinize AI recommendations more carefully in telemedicine settings, where physical examination is limited:

"Because I can't examine the patient directly, I feel even more pressure to double-check what the AI is suggesting."

The findings suggest that AI-CDSS does not diminish clinicians' ethical burden; instead, it intensifies reflective judgment as clinicians reconcile technological input with professional responsibility.

Disruption and Reconfiguration of Clinical Workflow

Participants described AI integration as reshaping, rather than simply enhancing, their telemedicine workflow. While some clinicians perceived AI-CDSS as time-saving, others experienced it as a cognitive interruption requiring additional interpretive effort.

One clinician reflected:

"It's not just another button to click. It changes how I think during the consultation because now I have to pause and interpret what the system is telling me."

In some cases, AI recommendations altered the rhythm of clinician–patient interaction:

"Sometimes I find myself looking at the screen longer, trying to make sense of the AI output, and I worry that the patient feels that pause."

This theme highlights how AI-CDSS subtly reconfigures clinical practice, introducing new moments of reflection that can both support and disrupt telemedicine encounters.

Interpretive Negotiation Between Clinical Judgment and Algorithmic Logic

Clinicians consistently described their interaction with AI as a process of interpretive negotiation rather than acceptance or rejection. AI recommendations were treated as inputs to be contextualized within the clinician's experiential knowledge and understanding of the patient.

As one participant explained:

"The AI gives me a direction, but I still need to translate that into something meaningful for this particular patient."

Participants emphasized that algorithmic logic often lacked contextual sensitivity, requiring clinicians to bridge this gap:

"The system doesn't know the patient's anxiety or social situation. That's where my judgment comes in."

This negotiation process illustrates how clinicians position AI not as a decision-maker, but as an interpretive partner whose suggestions must be aligned with lived clinical realities.

Impact on the Doctor–Patient Relationship in Telemedicine

Clinicians reflected on how AI-CDSS influenced their relationship with patients during remote consultations. Some participants felt that AI enhanced their confidence, which positively affected patient communication:

"When I feel supported by the system, I can explain decisions more clearly to patients."

Conversely, others expressed concern that AI could distance them from patients if not carefully integrated:

"I don't want patients to feel like a machine is deciding their care instead of me."

This theme reveals clinicians' sensitivity to maintaining a human-centered approach, even as AI becomes embedded in telemedicine practice.

Taken together, the findings reveal that clinicians experience AI-based clinical decision support in telemedicine as a dynamic, interpretive, and ethically charged process. AI

recommendations are not passively adopted but actively negotiated through trust, responsibility, contextual judgment, and concern for the doctor–patient relationship. The essence of the phenomenon lies in clinicians' continuous effort to integrate algorithmic guidance with professional expertise and human care, shaping how AI is meaningfully enacted within telemedicine practice.

DISCUSSION

Summary of Key Findings

This study reveals that clinicians experience AI-based clinical decision support in telemedicine as a fundamentally interpretive and ethically situated practice rather than a purely technical aid (Schinasi et al., 2021). These findings respond directly to the central question posed in the Introduction by demonstrating how clinicians actively negotiate meaning, responsibility, and judgment when engaging with AI recommendations in remote clinical encounters.

Contribution of the Findings to the Research Question

The findings provide a substantive answer to the research question concerning how clinicians experience and interpret AI-based recommendations during telemedicine consultations and how these experiences shape clinical decision-making (Mukhlis, Janwari, et al., 2023). Rather than accepting AI outputs as authoritative directives, clinicians were shown to engage in continuous sense-making processes that integrate algorithmic suggestions with clinical intuition, contextual knowledge, and patient narratives (Malhotra et al., 2020). This interpretive engagement highlights that AI-CDSS functions less as a decision-maker and more as a dialogical partner within clinical reasoning.

Importantly, the findings demonstrate that trust in AI is not a stable or generalized attitude but an emergent experience shaped by situational factors such as clinical uncertainty, ethical accountability, and the perceived alignment between AI outputs and lived patient realities (Kunwar et al., 2022). Clinicians' sustained emphasis on professional responsibility further illustrates that AI does not displace clinical authority; instead, it intensifies reflective judgment, particularly in telemedicine contexts where embodied examination is limited (Du Yan et al., 2021). By foregrounding these experiential dynamics, the study contributes a nuanced understanding of AI-supported decision-making that extends beyond adoption or usability, offering insight into the lived meaning of AI integration in everyday clinical practice.

Relationship to Prior Literature and Theory

The findings align with and extend previous research that has emphasized the complexity of AI adoption in healthcare. Prior studies have documented clinicians' ambivalence toward AI, particularly in relation to trust, transparency, and professional autonomy (Mukhlis, 2025a). This study complements those insights by revealing how such ambivalence is experienced phenomenologically, as an ongoing negotiation rather than a fixed stance (Shehan et al., 2021). The observed tension between trust and skepticism resonates with earlier work on human–AI interaction, yet the present findings deepen this understanding by situating it within clinicians' lived ethical and relational responsibilities.

Furthermore, the results support sociotechnical perspectives in medical informatics that view technology as embedded within social practice rather than as an isolated tool (Mukhlis, Arifin, Ridwan, Zulbaidah, et al., 2025). Clinicians' accounts of workflow disruption and interpretive negotiation reflect Tedeschi (2021) argument that digital health technologies reshape professional identities and embodied experiences of care. From a theoretical standpoint, the findings are consistent with Heideggerian phenomenology, which emphasizes that meaning emerges through situated engagement rather than detached evaluation. In this sense, AI-CDSS is experienced not merely as technology-in-use but as part of clinicians' professional lifeworld, shaping how clinical judgment, responsibility, and patient relationships are enacted in telemedicine settings.

Implications of the Findings

The findings of this study carry important implications for both theory and practice within medical informatics and telemedicine (Taylor et al., 2022). From a professional perspective, the

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results suggest that AI-based clinical decision support systems are experienced not merely as technical tools but as socio-professional actors that reshape how clinicians enact judgment, responsibility, and patient-centered care. This implies that the successful integration of AI in telemedicine depends not only on system accuracy or efficiency but also on how technologies align with clinicians' experiential realities, ethical commitments, and interpretive practices (Mukhlis, Maryam, et al., 2023). Designing AI-CDSS that acknowledge clinicians' need for contextual understanding and reflective engagement may therefore enhance meaningful use in clinical settings.

At a broader level, the findings underscore the social and cultural dimensions of AI-supported healthcare. Clinicians' concerns about trust, accountability, and the doctor–patient relationship reflect wider societal expectations regarding professional authority and human agency in technologically mediated care (Lawrence et al., 2020). By illuminating these experiential dimensions, the study provides insight relevant to diverse telemedicine contexts where clinicians must balance technological assistance with human connection (Mukhlis et al., 2024). These implications extend beyond the immediate study population, offering guidance for policymakers, system designers, and healthcare organizations seeking to implement AI in ways that remain sensitive to professional identity and patient trust.

Study Limitations

Several limitations should be considered when interpreting the findings. As a phenomenological study, the research prioritized depth of experience over breadth, which limits the generalizability of the results to all telemedicine contexts or clinical specialties (De Panfilis et al., 2023). The findings reflect clinicians' experiences within specific organizational and technological settings, and different configurations of AI systems or healthcare environments may yield distinct experiential patterns (Canfell et al., 2024). Additionally, data were primarily derived from self-reported accounts, which may be influenced by participants' reflective capacity or professional positioning. These limitations do not diminish the value of the findings but instead highlight the contextual nature of phenomenological knowledge.

Prospective Directions for Future Research

The findings open several avenues for future research in medical informatics and digital health. Further phenomenological studies could explore how clinicians' experiences with AI evolve over time as familiarity and institutional integration increase (Akay et al., 2023). Comparative research examining different clinical disciplines or telemedicine platforms may also deepen understanding of how contextual factors shape meaning-making processes. Additionally, future studies could incorporate patients' lived experiences of AI-supported telemedicine to examine how professional and patient perspectives intersect. Such research would contribute to a more comprehensive, human-centered understanding of AI in healthcare, informing the development of technologies that support both clinical excellence and meaningful care.

CONCLUSION

This study examined clinicians' lived experiences of engaging with AI-based clinical decision support systems within telemedicine practice, addressing the need to understand how meaning and judgment are formed in AI-supported care. The findings demonstrate that clinicians experience AI recommendations as interpretive inputs that require active negotiation with professional knowledge, ethical responsibility, and patient-centered considerations. By foregrounding lived experience, this research moves beyond dominant technology-centered perspectives and addresses limitations in prior studies that focused primarily on adoption, usability, or system performance. The study contributes a phenomenological understanding of how trust, accountability, and clinical judgment are enacted when AI is integrated into remote healthcare settings. Beyond its theoretical contribution, the findings carry concrete implications for policy and system-level implementation. First, healthcare institutions and regulatory bodies should incorporate structured governance frameworks that clarify accountability boundaries between clinicians and AI systems, particularly in telemedicine contexts where decision-making occurs remotely. Clear institutional guidelines are needed to delineate how AI

recommendations should be documented, validated, and ethically justified in clinical workflows. Second, system-level implementation should prioritize human-centered AI design principles, ensuring that AI-CDSS interfaces support interpretive flexibility rather than presenting outputs as deterministic directives. This includes transparent explanation features, contextualized risk indicators, and adaptive feedback mechanisms that align with clinicians' reasoning processes. Third, professional training policies should integrate experiential and ethical competencies related to AI-supported decision-making into continuing medical education. Rather than focusing solely on technical proficiency, training programs should address interpretive judgment, uncertainty management, and communication strategies for discussing AI-generated recommendations with patients. At the organizational level, telemedicine platforms should embed reflective checkpoints within workflow architectures—such as prompts for clinical justification or override rationale—to reinforce responsible integration of AI into practice. Collectively, these implications suggest that effective AI integration requires coordinated efforts across policy regulation, institutional governance, system design, and professional development. By situating AI within clinicians' lived professional realities, this study provides a foundation for system-level strategies that align technological innovation with ethical accountability and relational care in digital health environments. Future research may extend this work by examining longitudinal implementation outcomes, cross-institutional policy adaptations, or by integrating patient perspectives to develop a more comprehensive framework for AI-mediated telemedicine governance.

CONFLICT OF INTEREST

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

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