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Algorithmic Health Advice and Trust Formation: A Phenomenological Study of AI-Based Wellness Platforms

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ABSTRACT

The rapid expansion of AI-based wellness platforms has transformed the way health advice is generated, delivered, and trusted. Algorithmic health advice increasingly replaces or supplements human expertise in guiding lifestyle, fitness, and mental well-being decisions, making trust a critical condition for user adoption and sustained engagement. However, existing studies predominantly approach trust from quantitative perspectives, emphasizing usability, acceptance, or compliance, while offering limited insight into users' lived experiences. This study employs a qualitative phenomenological approach to explore how users experience algorithmic health advice and how trust is formed in interactions with AI-based wellness platforms. Data were collected through in-depth interviews with active users and analyzed using phenomenologically informed thematic analysis. The findings reveal that trust emerges through repeated experiential validation, perceived personalization, and emotional resonance rather than through understanding of algorithmic mechanisms. Trust is shown to be situational, ambivalent, and often outcome-based, persisting despite algorithmic opacity. The study further identifies ethical tensions arising from the normalization of trust without understanding, where algorithmic advice subtly shapes users' perceptions, behaviors, and self-governance. These findings highlight the need to reconceptualize trust in digital health as a relational and experiential phenomenon rather than a purely technical attribute. The study contributes to digital health and human–AI interaction literature by providing a phenomenological account of trust formation and offering implications for the ethical design of AI-based wellness platforms.

Keywords: Algorithmic Trust; Digital Health; Phenomenology; Wellness Platforms

INTRODUCTION

The rapid diffusion of artificial intelligence within digital health ecosystems has fundamentally reconfigured how health knowledge is produced, mediated, and trusted. AI-based wellness platforms (ranging from fitness tracking and mental health applications to lifestyle optimization and preventive health tools) are increasingly relied upon to deliver algorithmic health advice that guides everyday health-related decisions. These systems operate by processing large volumes of personal and behavioral data to generate recommendations that are presented as personalized, objective, and evidence-informed. As such, they occupy a growing role in shaping health practices outside formal clinical settings, positioning algorithmic systems as influential actors in contemporary health governance (Mendel, Nov, & Wiesenfeld, 2024; Nov, Singh, & Mann, 2023).

This transformation signifies a profound shift in the locus of health authority. Traditionally, health advice derived its legitimacy from professional expertise, institutional accountability, and interpersonal relationships between patients and healthcare providers. In contrast, algorithmic health advice is mediated through opaque computational processes that users rarely understand, yet are increasingly expected to trust. The absence of face-to-face interaction, professional obligation, and transparent reasoning challenges conventional foundations of trust in health contexts. Instead, trust must be negotiated within human–AI interactions that are characterized by asymmetries of knowledge, power, and interpretive capacity (Degteva & Kuksova, 2023; Oyekunle et al., 2024).

Trust is widely recognized as a critical determinant of technology adoption and sustained use in digital health systems. Existing literature demonstrates that users' willingness to disclose sensitive health data, follow recommendations, and rely on automated advice is strongly conditioned by perceived trustworthiness of the system (Perski & Short, 2021; Tun et al., 2024). However, trust in algorithmic systems differs qualitatively from interpersonal trust. It is not grounded in moral accountability or professional ethics in the traditional sense, but rather emerges through perceived system competence, consistency of outputs, and experiential validation over time. This raises important epistemological questions about how users make sense of algorithmic authority and how legitimacy is constructed in the absence of human judgment (Degteva & Kuksova, 2023).

A further complication lies in the epistemic opacity of AI systems. Algorithmic health advice is typically produced through machine learning models that function as "black boxes," offering recommendations without intelligible explanations of underlying logic. While explainable AI has been proposed as a partial solution, empirical evidence suggests that users often rely more heavily on outcome-based evaluations than on technical understanding when forming trust judgments (Hong et al., 2025; Nov et al., 2023). This condition creates an ambivalent relationship between transparency and trust, where lack of understanding does not necessarily inhibit reliance, but may introduce ethical vulnerabilities related to overdependence, misinterpretation, and misplaced confidence.

Despite the growing prominence of algorithmic health advice, dominant research approaches in digital health remain largely quantitative and instrumental. Many studies prioritize usability metrics, technology acceptance models, compliance rates, or behavioral outcomes, treating trust as a variable to be measured rather than a lived phenomenon to be understood (Perski & Short, 2021; Mendel et al., 2024). Such approaches, while valuable, tend to abstract trust from the subjective experiences through which users encounter AI systems in their everyday lives. As a result, they overlook how emotions, identity, vulnerability, and meaning-making shape users' relationships with algorithmic health advice.

From a phenomenological perspective, trust is not a static attribute of technology but an experiential process constituted through repeated interactions, embodied responses, and interpretive judgments. Phenomenology foregrounds lived experience as the primary site through which technological artifacts acquire meaning. In the context of AI-based wellness platforms, this implies that trust emerges not solely from technical accuracy or performance, but from how users experience personalization, reassurance, ambiguity, and control in their interactions with algorithmic advice (Opesemowo, 2024; Oyekunle et al., 2024). Yet, phenomenological analyses of trust in AI-mediated health contexts remain marginal within the literature.

Several influential studies illustrate this gap. Mendel, Nov, and Wiesenfeld (2024), in their article "Advice from a Doctor or AI? Understanding Willingness to Disclose Information Through Remote Patient Monitoring to Receive Health Advice," examine users' willingness to disclose health data to AI systems compared to human professionals. While the study offers important insights into disclosure behavior and perceived credibility, it adopts a quantitative experimental design that does not explore how users subjectively experience trust formation over time, leaving the experiential meaning of trust largely unexamined. Similarly, Nov, Singh, and Mann (2023) in "Putting ChatGPT's Medical Advice to the (Turing) Test: Survey Study" assess users' ability to distinguish AI-generated medical advice from human advice and their perceived quality. Although the findings illuminate evaluative judgments of AI advice, the study does not investigate how trust is lived, negotiated, or emotionally experienced in real-world health practices. Furthermore, Degteva and Kuksova (2023), in "Artificial Intelligent Systems and the Problem of 'Natural' Trust," provide a theoretical analysis of trust in AI systems, emphasizing epistemic and philosophical dimensions. However, their work remains largely conceptual and does not empirically engage with users' lived experiences of algorithmic health advice in everyday wellness contexts. Collectively, these studies reveal a clear research gap: the absence of phenomenological inquiry into how trust in algorithmic health advice is experientially constituted from the perspective of users themselves.

Addressing this gap is particularly important in the context of AI-based wellness platforms, where users often engage voluntarily, outside formal medical supervision, and over extended periods. In such settings, trust is continuously shaped by everyday encounters with recommendations, feedback loops, and perceived outcomes. Understanding trust as a lived, relational, and contextual phenomenon is therefore essential for both theoretical advancement and ethical design of digital health technologies.

This study responds to this gap by adopting an interpretative phenomenological approach to examine how users experience algorithmic health advice and how trust is formed, sustained, or challenged within AI-based wellness platforms. By focusing on lived experience rather than system performance, the study aims to reconceptualize trust as an experiential process embedded in human–AI interaction. In doing so, it contributes to digital health

scholarship by enriching theoretical understandings of trust and offers practical insights for the development of ethically grounded, user-centered AI wellness systems.

METHOD

This study adopts a qualitative research design using an interpretative phenomenological approach to examine how users experience algorithmic health advice and how trust is formed within AI-based wellness platforms. A phenomenological approach is appropriate because the study seeks to understand lived experiences and subjective meanings rather than to measure behavioral outcomes or technological performance. The focus is placed on how individuals interpret, internalize, and negotiate algorithmic recommendations in everyday health-related contexts (Creswell & Poth, 2018).

Data were collected through in-depth semi-structured interviews with users of AI-based wellness platforms that provide algorithmic health advice related to fitness, lifestyle management, or mental well-being. Participants were selected using purposive sampling, with inclusion criteria emphasizing sustained and routine engagement with AI-generated recommendations. Interviews were designed to elicit rich descriptions of participants' experiences, perceptions of personalization, emotional responses, and evolving trust toward algorithmic advice, allowing participants to articulate meanings in their own terms (Creswell & Poth, 2018).

Data analysis was conducted using a phenomenologically informed thematic analysis. The researcher engaged in reflexive bracketing to minimize preconceived assumptions, followed by systematic coding and theme development to identify essential experiential structures related to trust formation. The analytic process followed the six-phase thematic analysis framework proposed by Braun and Clarke (2021), adapted to prioritize experiential depth and interpretative meaning. Research rigor was ensured through reflexivity, audit trail documentation, and member checking to enhance credibility and analytical coherence (Braun & Clarke, 2021; Creswell & Poth, 2018).

RESULT AND DISCUSSION

Lived Experiences of Algorithmic Health Advice as a Non-Human Health Authority

The findings indicate that users experience algorithmic health advice as a form of non-human authority that occupies a unique position between professional medical expertise and self-guided health practices. Unlike traditional healthcare encounters grounded in interpersonal trust and professional legitimacy, algorithmic advice is perceived as authoritative primarily due to its data-driven logic and claims of personalization. Participants described AI-generated recommendations as carrying an implicit sense of objectivity, often perceived as "neutral" or "scientific," even when users were

unable to explain how the recommendations were produced (Degteva & Kuksova, 2023; Nov et al., 2023).

From a phenomenological perspective, this authority is not granted automatically but emerges through repeated encounters in everyday life. Users reported that algorithmic advice became meaningful when it aligned with bodily sensations, emotional states, or observable outcomes, such as improved fitness metrics or perceived mental well-being. This experiential alignment functions as an experiential validation mechanism, where the body itself becomes a site for confirming the legitimacy of algorithmic recommendations. Such findings resonate with prior studies suggesting that trust in digital health tools often develops through perceived outcome effectiveness rather than technical transparency (Perski & Short, 2021; Mendel et al., 2024).

At the same time, participants expressed ambivalence toward the relevance of algorithmic advice, particularly when recommendations failed to account for contextual factors such as fatigue, emotional stress, or social obligations. This mismatch generated moments of doubt, highlighting that algorithmic authority remains conditional and situational. Phenomenologically, these moments reveal a tension between the promise of personalization and the lived complexity of health experiences, where standardized data models struggle to fully capture subjective nuance (Oyekunle et al., 2024).

Personalization emerged as a central experiential theme shaping users' initial openness to algorithmic health advice. Participants frequently described feeling "seen" or "understood" when recommendations appeared tailored to their routines, goals, or prior behaviors. This sense of personalization contributed to an early stage of trust formation, even in the absence of explicit understanding of algorithmic processes. Similar patterns have been identified in studies on recommender systems, where perceived relevance fosters emotional engagement and legitimacy (Ayemowa et al., 2024; Sohaib, 2021).

However, personalization was also experienced as fragile. When users perceived recommendations as repetitive, generic, or misaligned with their lived realities, trust was quickly destabilized. These disruptions suggest that algorithmic health advice operates within a narrow experiential window, where perceived relevance must be continually reaffirmed. In phenomenological terms, trust is not a stable attribute of the technology but an emergent relation that must be constantly reconstituted through meaningful interaction (Tun et al., 2024).

Phenomenological Dynamics of Trust Formation in Human–AI Interaction within Wellness Platforms

Trust in AI-based wellness platforms was found to develop through a gradual and iterative experiential process, rather than through immediate acceptance or rational evaluation. Participants described trust as something that "builds over time" through consistent exposure to algorithmic advice that feels reliable, supportive, and non-intrusive. This aligns with phenomenological accounts of trust as a relational phenomenon grounded in temporal experience and embodied familiarity (Degteva & Kuksova, 2023).

Rather than being absolute, trust was experienced as situational and task-dependent. Users reported trusting algorithmic advice more readily for low-risk activities, such as exercise reminders or sleep recommendations, while remaining cautious about advice related to mental health or medical conditions. This selective trust reflects a layered structure of confidence, where users actively negotiate the scope and limits of algorithmic authority based on perceived risk and personal vulnerability (Tun et al., 2024; Mendel et al., 2024).

Emotional and rational dimensions of trust were deeply intertwined in participants' experiences. On one hand, users relied on rational indicators such as consistency, data visualization, and perceived accuracy. On the other hand, emotional comfort, reassurance, and reduced anxiety played a decisive role in sustaining trust. This duality supports theoretical arguments that trust in AI systems cannot be reduced to cognitive assessment alone but must be understood as an affective–experiential relation (Oyekunle et al., 2024; Perski & Short, 2021).

Interestingly, participants did not consider transparency of algorithms to be a prerequisite for trust. Many acknowledged limited understanding of how recommendations were generated yet continued to rely on them as long as outcomes felt beneficial. This phenomenon illustrates what can be described as outcome-based trust, where experiential results outweigh epistemic clarity. While this form of trust facilitates adoption, it also raises ethical concerns regarding uncritical reliance on opaque systems, particularly in sensitive health contexts (Hong et al., 2025; Frank et al., 2022).

To synthesize these experiential patterns, Table 1 presents key dimensions of trust formation identified in participants' lived experiences.

Table 1. Phenomenological Dimensions of Trust Formation in AI-Based Wellness Platforms

Dimension of Trust Formation	Experiential Description	Implication for User–AI Interaction
Consistency of Recommendations	Repeated alignment between advice and perceived outcomes	Strengthens gradual trust over time
Perceived Personalization	Feeling that advice reflects individual routines and goals	Generates early legitimacy and emotional engagement
Situational Risk Assessment	Differentiating trust based on perceived health risk	Produces selective and conditional trust
Emotional Reassurance	Sense of support, motivation, and reduced anxiety	Sustains continued platform use
Outcome-Based Validation	Trust grounded in observable or felt improvements	Enables reliance despite algorithmic opacity

The table illustrates that trust formation is not a singular process but a multi-dimensional experiential configuration. Each dimension interacts

dynamically, shaping how users negotiate reliance on algorithmic health advice. Importantly, this configuration remains unstable and subject to disruption, reinforcing the phenomenological insight that trust in AI is continuously enacted rather than permanently secured.

Algorithmic Opacity, Ethical Tensions, and the Normalization of Trust Without Understanding

One of the most critical findings of this study concerns the paradoxical relationship between algorithmic opacity and trust formation. Participants consistently acknowledged that they did not understand how AI-based wellness platforms generated health advice, yet this lack of understanding did not necessarily inhibit trust. From a phenomenological standpoint, opacity was often experienced as a background condition rather than a foreground concern. Users focused primarily on how the system "felt" in use and what outcomes it produced, rather than on the epistemic foundations of algorithmic decision-making (Degteva & Kuksova, 2023; Nov et al., 2023).

This experiential pattern indicates a process of trust normalization, in which reliance on algorithmic systems becomes routinized through everyday use. As recommendations are repeatedly integrated into daily practices, users gradually suspend critical reflection on algorithmic logic. Phenomenologically, this suspension resembles a form of practical bracketing, where questions of how the system works are set aside in favor of what the system does. While such normalization supports sustained engagement, it also introduces ethical vulnerabilities, particularly when users begin to defer judgment to systems they cannot interrogate (Oyekunle et al., 2024).

The ethical tension becomes more pronounced in contexts involving mental health, emotional regulation, and lifestyle governance. Participants described moments in which algorithmic advice subtly shaped their self-perception, health priorities, and behavioral norms. These findings align with broader critiques of algorithmic systems as instruments of soft governance, where behavioral guidance is framed as neutral optimization rather than normative intervention (Frank et al., 2022; Nadeem et al., 2022). In this sense, algorithmic health advice operates not only as a technical tool but also as a moral and disciplinary agent.

Importantly, users did not uniformly perceive this influence as problematic. Many participants welcomed algorithmic guidance as a source of structure, motivation, and reassurance, especially in contexts of uncertainty or limited access to professional healthcare. This ambivalence highlights a central phenomenological insight: ethical risk does not emerge from technology alone but from the asymmetry of power between users' experiential trust and platforms' algorithmic authority. When trust is formed without understanding, users may lose the capacity to critically evaluate advice, even when it conflicts with their embodied experience or well-being (Tun et al., 2024).

The findings thus suggest that transparency, while important, is insufficient if framed solely as technical explainability. What is required is

experiential transparency, where users are supported in reflecting on the limits, assumptions, and appropriate scope of algorithmic health advice. Without such reflexive design, AI-based wellness platforms risk fostering passive trust that prioritizes compliance over agency, raising concerns about autonomy, responsibility, and ethical accountability in digital health ecosystems (Hong et al., 2025).

CONCLUSION

This phenomenological study demonstrates that trust in algorithmic health advice is not primarily a function of technological sophistication or transparency, but an emergent outcome of users' lived experiences with AI-based wellness platforms. Trust develops through repeated, meaningful interactions in which recommendations align with users' bodily sensations, emotional states, and perceived health improvements. As such, trust in AI is relational, contextual, and continuously negotiated rather than fixed or absolute. The findings reveal that algorithmic health advice is experienced as a form of non-human authority that reshapes how users understand health, responsibility, and self-care. While personalization and consistency foster trust, this trust remains fragile and situational, particularly when recommendations fail to resonate with users' lived realities. Crucially, trust often persists despite limited understanding of algorithmic processes, giving rise to outcome-based trust that privileges experiential validation over epistemic clarity. From an ethical perspective, the normalization of trust without understanding presents significant challenges for digital health governance. When users rely on opaque systems without critical engagement, risks emerge related to autonomy, accountability, and subtle forms of behavioral control. These findings underscore the need to reconceptualize trust in AI-based health systems not as a technical achievement but as an ethical and experiential relationship that must be actively supported. Overall, this study contributes to digital health scholarship by foregrounding the phenomenological dimensions of trust formation in human–AI interaction. It highlights the importance of designing AI-based wellness platforms that do not merely optimize outcomes, but also cultivate reflective, ethically grounded trust that respects users' lived experiences and agency.

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