Keywords
Digital health; chronic disease; online health communities; information-seeking behavior; patient decision-making; eHealth literacy; participatory medicine; mixed-methods research.

Authors
Aliev Navruz Khasanovich[1]
[1*]PhD, Associate Professor, BUKHARA STATE MEDICAL INSTITUTE NAMED AFTER ABU ALI IBN SINO. navruz_aliyev@bsmi.uz ORCID: 0000-0003-2194-7052"
Tilyavova Sitora Amirzoda[2]
[2]Assistent of the Department of Obstetrics and gynaecology of the Samarkand state medical university, Doctor of philosophy, Samarkand,Uzbekistan. E-mail: sitoratilyavova@gmail.com ORCID ID: https://orcid.org/0000-0001-5020-8908"
Murodjon Temirov[3]
[3]PhD Candidate, Department of Pediatrics, Bukhara State Medical Institute named after Abu Ali ibn Sino, Bukhara, Uzbekistan. temirov.murodjon@bsmi.uz orchid id:0009-0003-0470-0960

Gulnoza Murodovna Akhmadjonova4
4DSc, Associate Professor of the Department of Obstetrics and Gynecology 2 at Andijan State Medical Institute. gmaniyozova@mail.ru orcid id: 0000-0003-2353-1229

Nabiyeva Shoxista Mustafayevna[5]
[5]Samarkand State Medical University, Assistent at the department N 1 of Pediatrics and neonatology, Samarkand, Uzbekistan https://orcid.org/0000-0001-5389-9652 E-mail shoykanabeeyeva@gmail.com

Rabbimova Nodira Tashtemirovna[6]
[6]Associate professor of Department of Infectious diseases Samarkand State Medical University, PhD. e-mail: nodira.rabbimova@mail.ru https://orcid.org/0000-0003-4748-8149.

Received-14-05-2026
Revised-18-06-2026
Accepted-25-06-2026
Doi:10.1922/ejprd.v34i4s.1438

Digital Health Information-Seeking Behaviors and Decision-Making Patterns Among Chronic Disease Patients in Online Communities: Insights from a Mixed-Methods Analysis

Abstract:
Background: With the expanding reach of digital health platforms, patients with chronic diseases increasingly turn to online communities to obtain, interpret, and apply health information. Yet the mechanisms through which these digital interactions influence health decisions and self-management remain insufficiently understood. Clarifying these behaviors is vital for developing evidence-based digital health strategies that enhance patient empowerment and care outcomes.
Objective: This study explores how individuals with chronic illnesses engage in online information-seeking, assess the trustworthiness of digital sources, and integrate collective knowledge from online peers into personal health decisions.
Methods:A mixed-methods design combined quantitative survey data (n = 752) with qualitative interviews (n = 30). The survey measured eHealth literacy, patterns of community participation, perceived credibility of information, and reported behavioral changes. Interview data were thematically analyzed to uncover motivations, emotional dynamics, and cognitive strategies guiding digital information use and decision-making. Statistical models examined relationships between online engagement, information evaluation, and self-management confidence.
Results: Participants exhibited strong reliance on online networks for experiential knowledge and social validation. Greater perceived credibility and peer trust were linked with heightened confidence in self-care decisions. Three engagement typologies were identified—affirmation seeking, collaborative interpretation, and participatory experimentation—each reflecting distinct approaches to decision-making. Variations in critical appraisal and source triangulation emerged by age, education level, and disease type.
Conclusion: Online health communities serve as influential ecosystems for information exchange, emotional support, and autonomous decision-making among people living with chronic conditions. Integrating patient-derived insights from these spaces into clinical communication and digital health policy could advance more responsive, participatory models of chronic disease management.

Introduction

Chronic diseases such as diabetes, cardiovascular disorders, respiratory illnesses, and cancer now account for over 70% of global mortality each year, representing a profound and persistent challenge for health systems and societies worldwide (World Health Organization, 2023). Increasing life expectancy, urbanization, and changing behavioral risk profiles have

ejprd.org- Published by Riset Publishing Services LLC. Copyright © 2026 by Riset Publishing Services LLC

amplified the prevalence and complexity of these long-term conditions, creating sustained demand for health information, lifestyle guidance, and self-management support. Beyond their physiological implications, chronic diseases impose psychological, economic, and social burdens that extend well beyond the clinical encounter. Patients often navigate complex therapeutic regimens while negotiating uncertainty, fragmented care pathways, and varying levels of health literacy. Against this backdrop, the ability to access and interpret health information has become central to chronic disease management and to realizing the broader promise of patient empowerment and participatory care.

The Digital Transformation of Health Information Landscapes

Over the past decade, digital transformation has fundamentally reshaped how individuals interact with health information. Widespread internet access, mobile connectivity, and the proliferation of eHealth platforms have created new opportunities for patients to seek, share, and evaluate knowledge about their conditions. Social media networks, patient forums, and online support communities constitute a global ecosystem of peer-to-peer exchange that complements—or sometimes challenges—traditional biomedical authority (Eysenbach, 2021). Within these spaces, patients assume multiple roles: consumers of medical data, interpreters of complex evidence, contributors of personal experience, and advocates for themselves and others.

This democratization of information has produced both opportunities and tensions. On one hand, digital technologies support continuous learning, social support, and improved self-efficacy. Patients can compare treatment options, identify side effects, and learn coping strategies from individuals with firsthand experience. On the other hand, the heterogeneity and variable quality of online content complicate decision-making. The blending of evidence-based and anecdotal information risks misinterpretation, misinformation, and unsafe health behaviors, especially among users with limited digital or health literacy (Norman et al., 2022). The balance between empowerment and exposure to unreliable information has thus become a defining theme in contemporary digital health research.

Online Health Communities and the Reconfiguration of Patient Agency

Online health communities occupy a unique niche in this digital landscape. Unlike professional telehealth services, these communities are largely informal, self-organized, and driven by experiential knowledge exchange. Studies have shown that participants often value the affective and practical dimensions of peer dialogue as much as, or more than, clinical advice (Fritz et al., 2020). Through discussion threads, personal narratives, and testimonial sharing, individuals confront the emotional demands of chronic illness and construct collective interpretations of their biomedical experiences.

Importantly, these communities are not merely repositories of patient stories; they are discursive sites where health norms, treatment expectations, and concepts of trust are continually negotiated. Health information-seeking behavior in such contexts cannot be reduced to a rational search for facts but must be understood as a social process shaped by digital affordances, peer dynamics, and cultural expectations of expertise. The blending of informational and emotional support challenges traditional assumptions about how patients acquire knowledge and make decisions (Huang et al., 2021).

Despite growing recognition of these dynamics, conceptual and empirical gaps persist. Much existing research has focused on either individual-level literacy and trust in digital sources or the population-level implications of misinformation. Fewer studies have integrated these perspectives to examine how chronic disease patients operationalize information in everyday decisions—how they weigh online advice against clinical guidance, how they interpret credibility signals within digital communities, and how these judgments influence self-management behaviors. Moreover, limited methodological diversity has constrained understanding; quantitative surveys measure frequency of use and satisfaction but often fail to capture the affective, interpretive, and collective dimensions of digital participation that shape actual health actions (Zhang et al., 2023).

Limitations of Current Understanding

Four interrelated limitations characterize current knowledge on digital health information-seeking among patients with chronic illness.

First, **the relational dimension of information exchange** remains underexplored. Most studies center on individual competencies—such as eHealth literacy—without fully considering the role of social interaction and group identity in shaping knowledge construction (Chen et al., 2022).

Second, **the decision-making continuum** is insufficiently mapped. Research often treats online search and clinical decision-making as separate domains, whereas, in practice, they are mutually reinforcing. Digital experiences shape how patients interpret physicians' recommendations, while clinical encounters prompt renewed online engagement and validation-seeking behaviors (Kordzadeh & Young, 2021).

Third, **cross-cultural variations** in information evaluation, trust boundaries, and privacy concerns require greater examination. Global online platforms host culturally diverse participants, yet few comparative studies assess how sociocultural factors mediate digital health behaviors across contexts (Gao et al., 2024).

Finally, **the integration of digital ethnography with behavioral analytics** remains limited. While qualitative research yields rich insight into motivation and meaning, quantitative approaches can trace network structures and diffusion of information. Integrating these epistemological traditions is essential for understanding how digital health narratives scale and influence patient communities over time.

Copyright © 2026 by Riset Publishing Services LLC

Toward a New Conceptualization of Digital Health Information-Seeking

Addressing these gaps requires reframing digital information-seeking as a dynamic interplay of cognition, emotion, and social negotiation rather than a linear, goal-oriented activity. Patients with chronic conditions frequently engage in *iterative sense-making*—a cyclical process of gathering, interpreting, and reconciling information within the constraints of personal experience and peer validation. Online communities provide the context for this sense-making, mediated by platform algorithms that prioritize certain forms of content and interaction.

Emerging studies have begun applying frameworks from health informatics, social computing, and behavioral science to elucidate these dynamics. Network analysis has illuminated how credibility assessments propagate through comment chains; qualitative content analyses have traced evolving narratives of hope and risk around experimental therapies (Wang et al., 2024). However, integration of such approaches within a coherent mixed-methods framework remains rare. Methodological innovation is necessary to bridge the gap between the immediacy of digital trace data and the interpretive depth of patient narratives.

Objectives and Research Questions

Building on these theoretical and empirical considerations, the present study adopts a mixed-methods design to explore digital health information-seeking and decision-making patterns among chronic disease patients who participate in online communities. Specifically, it addresses the following research questions:

1. **How** do chronic disease patients navigate digital platforms and online communities to seek and evaluate health information?
2. **What** cognitive, social, and emotional factors shape perceptions of information credibility and utility?
3. **In what ways** do online interactions influence patients' self-management behaviors and decision-making processes regarding treatment and lifestyle choices?
4. **How** do demographic, technological, and literacy-related variables moderate these relationships?

By integrating quantitative and qualitative data, the study seeks to generate a multidimensional understanding of the digital behaviors underpinning patient agency in the management of chronic illness.

Contribution and Significance

The contribution of this research lies in its attempt to move beyond simplistic models of digital information use toward an ecological understanding of patient decision-making in networked contexts. Conceptually, it situates online health behaviors at the intersection of informatics, social psychology, and digital sociology, highlighting the negotiation between professional authority and peer expertise. Methodologically, it demonstrates how integrating behavioral survey analytics with interpretive interviews can yield comprehensive insights into both measurable trends and phenomenological nuances.

Practically, the study contributes to the design of patient-centered digital health interventions and communication strategies. By unpacking the mechanisms of trust formation and information validation in online environments, the findings can inform clinical practice—helping providers to engage more effectively with digitally active patients—and guide public health agencies in designing credible digital communication campaigns. In an era where misinformation and overabundance of data coexist with unprecedented connectivity, understanding how chronic disease patients make sense of digital information is not only a research imperative but also a cornerstone for equitable, informed, and participatory healthcare.

Literature Review

The rapid digitization of health information has transformed how patients engage with knowledge, peers, and healthcare systems. For individuals living with chronic disease, online platforms have become spaces for education, validation, and agency. Yet despite the wealth of digital health scholarship, conceptual gaps persist concerning how literacy, trust, and communal participation interact to shape health decision-making. This literature review synthesizes recent research in four intertwined domains—digital health literacy, online patient communities, health information-seeking behavior models, and the role of trust and misinformation—to outline theoretical tensions and empirical gaps that this study intends to address.

1. Digital Health Literacy and the Transformation of Patient Agency

Digital health literacy (DHL) has emerged as a cornerstone construct in public health informatics. It encompasses individuals' capacity to seek, evaluate, and apply online information to health decisions (Norman & Skinner, 2022). The concept evolved from eHealth literacy frameworks, expanding informational competence to include navigation of social media, algorithmic feeds, and multimedia content (van der Vaart et al., 2021). Multiple studies underscore DHL as a determinant of self-management efficacy in chronic disease populations, mediating the relationship between online engagement and behavioral change (Choi et al., 2023; Torres et al., 2022).

However, DHL research has historically emphasized cognitive skill deficits rather than the relational dynamics of digital participation. Recent critiques argue that literacy should be reconceptualized as *situated practice* rather than measurable trait—contextually shaped by technology design, social capital, and health-related emotions (Knoll et al., 2023). For example, Sørensen et al. (2021) demonstrated that patients with similar literacy scores displayed divergent behaviors depending on peer context and platform affordances, suggesting that literacy intersects with collective interpretation processes.

Two theoretical frameworks dominate current discussion. The first, the **eHealth Literacy**

ejprd.org- Published by Riset Publishing Services LLC.
Copyright © 2026 by Riset Publishing Services LLC

Framework (eHLF), posits hierarchical competencies—functional, communicative, critical, and translational literacy—aligned with health promotion principles. The second, the **Digital Health Empowerment Model**, reframes literacy within networked power relations, highlighting the reciprocity between user agency and system design (Oh & Lee, 2023). The tension between these paradigms centers on whether literacy is primarily an individual cognitive capacity or a socio-technical negotiation. This conceptual divergence underpins the present study's mixed-method approach, which situates information-seeking not merely in individual ability but within community interactions.

2. Online Patient Communities and Peer-Based Knowledge Exchange

Online patient communities—ranging from disease-specific forums to Facebook groups and Reddit subforums—constitute a parallel infrastructure of care. They represent what Hardey (2020) termed "digital health publics," where experiential knowledge circulates alongside biomedical data. Participants use these spaces to share treatment experiences, interpret test results, and collectively manage health uncertainty. Simultaneously, these communities challenge traditional hierarchies of expertise, positioning patients as co-producers of practical knowledge.

Qualitative studies portray these communities as dynamic ecosystems of emotional support and cognitive collaboration. For example, Zhang et al. (2023) found that patients with diabetes used social media groups to co-construct understanding of blood-glucose fluctuations through narrative exchange and peer feedback. Similarly, Lupton and Lewis (2022) showed that chronic pain sufferers employed online discourse to articulate counter-narratives to clinical authority, fostering collective forms of identity and resilience.

Quantitative research, however, presents a more ambivalent picture. While high engagement correlates with improved self-efficacy and perceived control (Naslund et al., 2021), it may also perpetuate misinformation and echo-chamber effects. Kordzadeh and Young (2021) observed that participants often privilege anecdotal evidence over professional advice when emotional resonance is high. Algorithmic amplification compounds this asymmetry, privileging sensational or experiential content that garners engagement.

Current theoretical approaches to online patient communities derive broadly from two traditions. **Social support theory** highlights the psychosocial benefits of participation, emphasizing informational, emotional, and appraisal support (Bender et al., 2021). In contrast, **communities of practice (CoP)** frameworks conceptualize online groups as learning environments where novices gain competence through legitimate peripheral participation (Seppälä et al., 2023). Yet both frameworks struggle to account for the hybrid interactions between knowledge validation, social identity, and digital affordance. The absence of models integrating emotional regulation, cognitive processing, and algorithmic mediation underscores a central research gap: how do online communities simultaneously sustain empowerment and risk? This study positions itself at this nexus, analyzing how community discourse shapes—not merely reflects—decision-making among chronic disease patients.

3. Health Information-Seeking Behavior: From Rational Choice to Social Cognition

Traditional models of health information-seeking, such as the **Comprehensive Model of Information Seeking (CMIS)** and Wilson's (1999) **Information Behavior Model**, assume a rational-actor perspective. Individuals are portrayed as purposive seekers who assess information utility and cost-benefit to fulfill unmet needs. Although useful in early research, these frameworks predate social media's participatory affordances. As online communities blur producer–consumer boundaries, patients increasingly engage in *interactional seeking*: collective exploration within group conversations rather than isolated retrieval (Case & Given, 2019).

More recent extensions, such as the **Planned Risk Information Seeking Model (PRISM)**, incorporate affective drivers like anxiety and uncertainty (Fung & Griffin, 2020). However, empirical studies reveal that in chronic illness contexts, emotional factors not only precede but also shape evaluation of information credibility. For instance, Wohlmann et al. (2021) found that stress and symptom burden heightened selective exposure to confirmatory messages within online diabetes groups. This challenges linear assumptions of rational search and underscores affective filtering as intrinsic to information processing.

Behavioral informatics is now expanding toward **ecological** and **networked** models, which situate information behaviors within multi-level contexts: individual cognition, relational networks, and algorithmic structures (Rains, 2022). These frameworks emphasize feedback loops between digital literacy, emotional state, and social feedback. Yet empirical operationalization remains inconsistent. Few studies integrate behavioral analytics (e.g., posting frequency, interaction centrality) with qualitative data capturing meaning-making processes. Mixed-method designs are increasingly recommended to overcome this dichotomy (Pfeiffer et al., 2024)—an approach directly applied in the current research.

4. Trust, Misinformation, and Decision-Making in Digital Health

Trust constitutes the epistemic currency of the digital health environment. As medical authority decentralizes, patients rely on hybrid trust networks composed of peers, influencers, algorithms, and professionals. Several studies document that *perceived authenticity* and *experiential similarity* often outweigh credential-based trust cues (Vraga et al., 2022). Particularly in chronic disease management—where experiential empathy validates lived reality—patients may privilege peer narratives even when they conflict with biomedical guidance (Tanis & Hartmann, 2020).

Copyright © 2026 by Riset Publishing Services LLC

The COVID-19 pandemic magnified these dynamics by expanding the visibility of misinformation ecosystems. Extensive cross-sectional analyses showed that exposure to low-credibility health content significantly affected medication adherence and preventive behavior among vulnerable populations (Borah et al., 2023). Nonetheless, conceptualizations of misinformation remain too binary—treating information as either "accurate" or "false"—without accounting for the pragmatic knowledge that circulates in patient communities. Many participants reinterpret biomedical data through personal context, creating hybrid logics that are neither wholly erroneous nor strictly evidence-based.

Several frameworks can illuminate these nuances. The **Online Health Information Credibility Model (OHICM)** posits that heuristic and systematic cues jointly inform credibility judgments, moderated by emotional salience and peer consensus (Metzger et al., 2021). The **Dual-Processing Model of eHealth Evaluation** extends this by integrating cognitive effort and trust calibration, suggesting that platform familiarity shapes how users weigh signal versus noise (Zhang & Kizilcec, 2023). Together these theories reveal that decision-making in online spaces is contingent upon both informational design and social dynamics.

Yet an unresolved tension remains: how do patients reconcile peer-based advice with institutional expertise when making medical decisions? Evidence suggests that rather than replacing clinical authority, online information often functions as an interpretive bridge—facilitating informed dialogue during consultations (Kichler et al., 2023). However, this assumes clinical environments that are receptive to digitally empowered patients. Many health professionals still express ambivalence toward patient-sourced online knowledge, perceiving it as a challenge rather than complement to medical authority (Calamari et al., 2022). Bridging this perceptual divide requires empirical insight into how patients integrate multiple epistemic sources when making real-world health decisions—a critical focus of this study.

5. Theoretical Tensions and Unresolved Gaps

Synthesizing across domains reveals persistent analytical contradictions. First, **the literacy–trust paradox**: higher digital literacy does not necessarily inoculate users against misinformation or poor decision-making. In some cases, digitally skilled patients engage more deeply with contested or alternative evidence, using literacy selectively to justify preexisting beliefs (Peters et al., 2022). This highlights the need to conceptualize literacy as reflexive judgment rather than technical proficiency.

Second, **the empowerment dilemma**: empowerment discourse assumes agency is uniformly beneficial, yet in practice, the burden of information processing can induce anxiety and decision fatigue (van Wissen et al., 2023). Online participation sometimes amplifies self-doubt rather than confidence, particularly when contradictory advice circulates in communities of lay experts.

Third, **the methodological asymmetry**: despite rich ethnographic insight into patient experiences, quantitative modeling of digital behaviors often lacks contextual interpretation. Conversely, qualitative studies rarely engage with behavioral data analytics or machine learning techniques that capture macro-level trends. This methodological divide constrains cumulative theory building.

Finally, **the sociotechnical invisibility problem**: much research focuses on content rather than algorithmic architecture. Platform design—ranking systems, moderation policies, and recommendation algorithms—shapes what patients encounter, yet patient information-seeking models seldom theorize technological mediation explicitly (Haimson et al., 2024).

6. Positioning Current Research

Building on these debates, this study differentiates itself in three primary ways. First, it adopts a **networked view of literacy and trust**, investigating how collective practices within online communities mediate the relationship between digital competence and decision confidence. Second, it employs a **mixed-methods strategy** to bridge structural analytics with lived narratives, allowing for both statistical generalization and interpretive depth. Third, it focuses explicitly on **chronic disease contexts**, where information-seeking is continuous rather than episodic—a domain less examined compared to acute or pandemic-related information behaviors.

By integrating behavioral theories of information-seeking with sociological perspectives on online communities, the study advances understanding of how digital participation reshapes patient decision-making ecosystems. Such integration is essential to inform the design of trustworthy digital health interventions that recognize patients not merely as recipients of information but as active contributors to knowledge co-production.

Methodology

This study employed a convergent mixed-methods design to capture both the measurable dimensions and the experiential complexity of digital health information–seeking and decision-making among chronic disease patients participating in online communities. Mixed-methods designs are especially appropriate for questions that combine behavioral modeling with interpretive inquiry, allowing simultaneous analysis of "how" and "why" individuals engage with digital platforms (Creswell & Plano Clark, 2023). Quantitative data were used to examine structural relationships among variables such as digital health literacy, trust, engagement patterns, and self-management confidence, while qualitative data provided depth and contextual meaning to the patterns observed.

Research Design

A **convergent parallel design** was adopted, wherein quantitative and qualitative data were collected concurrently, analyzed separately, and integrated during interpretation. This design was selected to

Copyright © 2026 by Riset Publishing Services LLC

capitalize on the complementary strengths of survey-based generalization and interview-based interpretation (Fetters et al., 2019). The quantitative component explored the predictive relationships among digital literacy, trust in online information, community participation, and decision-making outcomes. The qualitative component sought to unpack cognitive, emotional, and social processes underlying these relationships through interviews with active members of chronic disease online communities. Both strands held equal priority within the overall interpretive framework.

Sampling Strategy

The study population consisted of adults (≥18 years) diagnosed with at least one chronic condition (e.g., diabetes, cardiovascular disease, rheumatoid arthritis, or asthma) and who participated in an online patient community for more than three months. A multi-stage **purposive sampling** approach was used to ensure participant diversity across disease types, age, gender, education, and geographical region—factors known to influence eHealth engagement (Choi et al., 2023).

Quantitative data were gathered from a target sample of **700–800 participants** recruited through disease-specific online forums, Facebook support groups, and Reddit communities. Recruitment posts invited voluntary participation through an anonymous survey link hosted on Qualtrics. Eligibility screening ensured self-reported chronic disease diagnosis, active engagement in at least one digital health community, and adequate English proficiency.

For the qualitative component, **30 participants** were drawn from survey respondents who indicated willingness for follow-up interviews. Selection followed a *maximum variation* strategy, ensuring representation of participants with diverse engagement frequencies and literacy levels. This approach allowed cross-comparison between highly engaged "superusers" and occasional participants, enhancing analytic transferability (Patton, 2020).

Ethical approval was obtained from the institutional review board of the host university. All participants provided informed consent and were assured of anonymity, confidentiality, and the right to withdraw at any stage. Data collection adhered to the ethical principles governing digital ethnography and online research (Townsend & Wallace, 2021).

Quantitative Data Collection

A structured online survey was developed based on validated instruments drawn from digital health and information behavior research. The questionnaire comprised four major sections:

1. **Participant characteristics** (demographic, clinical, and behavioral variables).
2. **Digital health literacy**, measured using the eHealth Literacy Scale (eHEALS) adapted for social media contexts (Norman & Skinner, 2022).
3. **Trust and credibility perceptions**, assessed via multi-item Likert scales incorporating informational, social, and platform-based trust dimensions (Fergie et al., 2021).
4. **Information-seeking and decision-making outcomes**, measured through self-reported confidence in health decisions and perceived behavioral change following online engagement.

Items were rated on five-point scales. The questionnaire was pilot-tested with 25 community members to assess clarity, internal consistency, and completion time. Cronbach's alpha for all subscales exceeded 0.80, indicating satisfactory reliability. Minor revisions were made to wording for accessibility.

Quantitative Data Analysis

Data were analyzed in SPSS 29 and AMOS 28 following data screening for normality, multicollinearity, and missing values. Descriptive statistics summarized demographic and behavioral patterns. The analytic strategy combined **multiple linear regression** and **structural equation modeling (SEM)** to test hypothesized pathways linking literacy, trust, engagement, and decision confidence. SEM was preferred for its ability to model latent constructs and mediational effects simultaneously (Hair et al., 2022).

Specifically, digital literacy was modeled as an exogenous latent variable predicting two mediators—trust and community interaction—both of which were hypothesized to influence decision-making self-efficacy. Model fit was assessed using standard indices ($CFI \geq 0.90$; $RMSEA \leq 0.06$). Group comparisons were performed across age, gender, and illness duration using multi-group invariance testing.

In addition, **hierarchical regression analyses** explored moderation effects between literacy and engagement strength, controlling for education and disease complexity. Statistical significance was set at $p < 0.05$.

Qualitative Data Collection

Semi-structured online interviews were conducted via Zoom or secure encrypted chat depending on participant preference. Each session lasted 45–70 minutes and was audio-recorded with consent. The interview guide was structured around four thematic domains:

1. Motivations for seeking information online and preferred digital channels.
2. Evaluative strategies for assessing credibility of online content.
3. Experiences of community interaction and peer exchange.
4. Influence of digital engagement on treatment decisions, communication with healthcare providers, and self-care behaviors.

Probing questions invited reflection on emotions, uncertainty, and critical incidents that shaped online decision-making. Interviews continued until thematic saturation was reached—defined as the point where new data failed to add substantive conceptual insight (Saunders et al., 2018). All recordings were transcribed verbatim and anonymized.

Qualitative Data Analysis

Qualitative data were analyzed using **thematic analysis** following the six-phase approach proposed by Braun

Copyright © 2026 by Riset Publishing Services LLC

and Clarke (2021). NVivo 14 software supported data organization and coding. Analysis proceeded iteratively:
1. **Familiarization** – repeated readings of transcripts to immerse in data.
2. **Initial coding** – open coding of meaningful segments related to digital literacy, trust negotiation, and decision-making behaviors.
3. **Theme development** – grouping codes into higher-order categories reflecting cognitive (evaluation), affective (trust/uncertainty), and social (community influence) dimensions.
4. **Refinement** – validation of themes through recursive comparison and memo writing.
5. **Interpretation** – linking emergent themes to theoretical frameworks of health information behavior and community participation.

A peer-debriefing procedure was employed to enhance credibility: two researchers independently coded 20% of transcripts, achieving an intercoder agreement rate of 88%. Discrepancies were reconciled through discussion, ensuring reflexive awareness of interpretive bias (Nowell et al., 2019).

Integration of Quantitative and Qualitative Findings

In the convergence phase, results from both strands were juxtaposed for **meta-inference synthesis** (Fetters et al., 2019). Quantitative outcomes identified structural relationships among literacy, trust, and engagement, while qualitative findings contextualized the meaning-making processes underlying these statistical associations. Integration occurred through a joint display matrix aligning major findings by research question. Concordant results were triangulated for reinforcement; discordant patterns prompted re-examination of contextual contingencies.

For instance, if regression results indicated a strong link between community engagement and decision confidence, qualitative data were used to explore whether this association derived from informational validation, emotional reassurance, or social comparison. Such inferences allowed the development of a comprehensive interpretive model linking micro-level behaviors with macro-level decision-making dynamics.

Ensuring Validity, Reliability, and Ethical Rigor

To ensure internal consistency and validity, the quantitative analysis followed established psychometric and modeling standards. For construct validity, confirmatory factor analysis verified the measurement model fit. The qualitative component emphasized credibility, transferability, and dependability through triangulation, peer review, and detailed audit trails. Methodological transparency was maintained through an integrated research log documenting analytic decisions.

Ethically, particular attention was paid to digital vulnerability. Prior to recruitment, each online forum administrator granted permission for posting research invitations. Participants were reminded not to disclose identifying details of themselves or third parties. Data were stored on encrypted institutional servers compliant with General Data Protection Regulation (GDPR, 2018) standards.

Methodological Justification

This methodological architecture addresses several gaps in existing digital health research. Employing a mixed-methods design reconciles the quantitative rigor required for behavioral modeling with the qualitative depth necessary to understand contextual nuances—a combination still rare in the study of online patient communities (Zhang et al., 2023). Quantitative surveys enabled detection of overarching trends across a diverse chronic disease population, while interviews illuminated the interpretive and emotional underpinnings often absent from statistical analyses.

In addition, the multi-platform recruitment strategy enhanced ecological validity by encompassing various community structures—from closed patient support groups to open social media forums—thereby increasing generalizability. Applying advanced modeling techniques such as SEM responded to calls for more theoretically grounded statistical analysis in digital health behavior studies (Pfeiffer et al., 2024). Finally, situating qualitative interpretation within established theoretical frameworks facilitated abductive reasoning, bridging conceptual gaps between individual competencies and sociotechnical interaction.

Summary

The chosen design offers a replicable, ethically robust approach to examining how chronic disease patients navigate the complex digital information landscape. Through quantitative measurement of literacy, trust, and engagement, alongside qualitative exploration of patient narratives, the study yields multifaceted evidence on how digital health participation influences decision-making and self-management. This methodological synthesis thus positions the research to contribute both empirically and theoretically to the evolving discourse on patient-centered digital health behavior.

Results

The study yielded a comprehensive understanding of how individuals with chronic diseases engage with digital health communities, navigate online information, and translate that engagement into decision-making. Findings are presented in two major parts: quantitative analyses revealing structural relationships among digital health literacy, trust, engagement, and decision-making confidence; and qualitative themes that contextualize the psychosocial and cognitive dynamics underpinning these statistical patterns. Integration of both strands demonstrated that digital literacy alone does not determine effective health decision-making; rather, these outcomes depend on complex interactions among literacy, social trust, and relational validation within online communities.

1. Quantitative Findings

1.1 Participant Profile

A total of 764 valid survey responses were analyzed after data cleaning (61% female; mean

Copyright © 2026 by Riset Publishing Services LLC

age = 48.2 ± 14.6 years). The sample encompassed a range of chronic conditions: diabetes (31%), cardiovascular disease (22%), autoimmune disorders (18%), respiratory illnesses (15%), and others (14%). Approximately 86% reported daily or weekly engagement with online health communities, most commonly on Facebook, Reddit, and disease-specific discussion boards. Average self-reported digital health literacy (DHL) scores were moderately high (M = 3.9 ± 0.6 on a 5-point scale), with parallel increases observed in confidence navigating mobile health apps.

1.2 Relationship Between Literacy, Trust, and Engagement

Correlation analysis revealed strong positive associations between DHL and perceived credibility of online content ($r = 0.63$, $p < 0.001$), as well as between DHL and active engagement frequency ($r = 0.52$, $p < 0.001$). Participants with higher DHL scores demonstrated greater discrimination between subjective testimonials and verified medical information. However, this did not uniformly translate into skepticism; rather, digitally literate users selectively reinterpreted peer narratives using evaluative heuristics such as source transparency and endorsement consistency.

Multiple regression analysis ($R^2 = 0.42$, $p < 0.001$) indicated that both digital literacy ($\beta = 0.38$, $p < 0.001$) and perceived trustworthiness of the community ($\beta = 0.32$, $p < 0.001$) significantly predicted participants' confidence in self-management decisions, even after controlling for age, education, and disease duration. Interaction effects revealed that trust moderated the relationship between literacy and confidence: literacy exerted a stronger impact on decision-making among participants who reported higher levels of community trust, suggesting that cognitive capacity and social assurance operate synergistically.

1.3 Structural Equation Modeling

The structural model demonstrated good fit ($\chi^2/df = 2.4$; CFI = 0.95; RMSEA = 0.041). Digital literacy emerged as a primary exogenous variable influencing two parallel mediators—trust in information and depth of online engagement—both of which predicted health decision-making self-efficacy. Indirect effects of literacy through trust ($\beta = 0.25$, 95% CI = 0.18–0.34) exceeded the direct effect ($\beta = 0.17$), underscoring trust as the principal pathway linking literacy to confident decision-making.

User engagement frequency further mediated the relationship between community trust and behavioral outcomes. Participants who interacted frequently through commenting, sharing, and peer consultation demonstrated significantly higher behavioral activation scores (M = 4.2 vs. 3.5; $t = 6.14$, $p < 0.001$). This supports earlier findings that social reciprocity and reinforcement drive retention and practical translation of online health advice (Naslund et al., 2021).

1.4 Cross-Demographic Comparisons

Multi-group invariance testing revealed modest differences by age and education. Younger respondents (<40 years) exhibited higher DHL but lower trust in peer-generated content, reflecting greater critical skepticism. Conversely, older participants reported lower literacy yet greater reliance on online peers for reassurance. Formal education amplified literacy effects: respondents with postgraduate qualifications displayed the strongest correlation between literacy and decision-making efficacy ($\beta = 0.47$, $p < 0.001$). Disease duration also played a role in shaping patterns—longer-term patients engaged more selectively and tended to assume mentoring roles within communities.

2. Qualitative Findings

Thematic analysis of thirty interviews yielded four interrelated themes characterizing patients' digital engagement and decision-making processes: *(1) dynamic trust calibration, (2) collaborative interpretation of information, (3) emotional scaffolding through community relationships, and (4) adaptive decision-making ecologies.*

2.1 Dynamic Trust Calibration

Participants described an iterative process of negotiating credibility across diverging information sources. Trust was not a static attribute but continuously recalibrated through cross-verification, peer consensus, and observed health outcomes. Many interviewees explicitly contrasted physician guidance with online experiences, using digital communities to "sense-check" recommendations or clarify treatment side effects. One participant stated, *"I don't reject my doctor's advice, but I test it—by reading experiences from people living it daily."*

Most respondents articulated a triadic framework of trust: *institutional trust* (medical organizations and journals), *relational trust* (peer users), and *platform trust* (perceived moderation quality). Interestingly, participants often weighted relational trust more heavily, particularly when peers shared experiential similarity. This aligns with prior scholarship suggesting that perceived empathy reinforces informational acceptance even when the source lacks formal authority (Tanis & Hartmann, 2020).

2.2 Collaborative Interpretation and Peer Deliberation

Rather than passively consuming online information, participants engaged in dialogical interpretation. Decision-making emerged as a collaborative, often crowdsourced process in which individuals posted queries, synthesized replies, and negotiated meaning collectively. This pattern was especially prominent within disease-specific forums where users created "threaded discussions" that functioned as communal repositories of lived evidence.

Interview data illuminated how community algorithms—such as upvoting or "likes"—served as tacit credibility markers. Some participants explicitly leveraged these social signals to filter or prioritize information, illustrating the socio-technical interplay between trust and platform design. Yet others

Copyright © 2026 by Riset Publishing Services LLC

expressed ambivalence, recognizing that popularity could distort perceived accuracy: *"Sometimes the loudest voice wins, not the most informed one."*

2.3 Emotional Scaffolding and Validation

Beyond informational exchange, communities provided emotional scaffolding that reinforced confidence in self-management. Participants frequently emphasized the intertwining of emotional reassurance and cognitive processing. Expressions of empathy, shared frustration, and "success stories" were described as motivational resources that enabled sustained engagement with demanding lifestyle routines. Those with limited familial or professional support relied heavily on these digital spaces as surrogates of social connectedness.

Crucially, emotional support sometimes moderated skepticism: participants admitted that high emotional affinity with trusted peers could lead to *soft acceptance* of unverified claims, particularly regarding dietary supplements or alternative therapies. This finding echoes concerns about how affect can bias credibility judgments in digital health environments (Vraga et al., 2022).

2.4 Adaptive Decision-Making Ecologies

Interviewees portrayed online information-seeking as part of a recurring cycle of inquiry, experimentation, and reflection—a pattern the research team conceptualized as *adaptive decision-making ecology*. Users gathered diverse inputs, applied selected advice, monitored outcomes, and relayed feedback to the group, thereby perpetuating collective learning. Experienced members acted as informal moderators, reminding peers to cross-check facts and consult professionals.

Several participants described hybrid strategies where professional medical advice was interpreted through experiential translation. For example, one respondent managing autoimmune arthritis explained: *"I read clinical papers, but what helps me apply that is reading how others fit treatment into daily life."* This reflects an epistemic pluralism where biomedical and experiential knowledge coexist, sometimes tensioned yet synergistic.

3. Integration of Quantitative and Qualitative Insights

The integration of both data strands revealed that while digital literacy underpins effective navigation, trust functions as the decisive mediator translating literacy into confident health behaviors. Quantitative results established statistical associations among literacy, trust, engagement, and self-efficacy; qualitative narratives elucidated the mechanisms through which these factors interact dynamically.

Collectively, findings demonstrate that **information quality appraisal is a socially distributed process**. Patients blend algorithmic cues (likes, shares) with relational trust markers to assess credibility, echoing ecological models of online information evaluation (Rains, 2022). Furthermore, **digital engagement intensity enhances decision confidence only when coupled with reflective literacy**—high participation without critical appraisal sometimes led to confusion or anxiety, corroborating recent findings on the "empowerment paradox" in digital health (van Wissen et al., 2023).

Another key insight concerns **the dual role of emotional connection**. While supportive interactions enhanced motivation and adherence, the desire for belonging occasionally reduced analytical scrutiny, demonstrating the affective trade-offs inherent in participatory digital care. These findings complicate conventional literacy-based interventions, suggesting that strengthening critical reflection and trust calibration may be more effective than simply increasing digital skills training.

4. Summary of Key Patterns

Analytical Domain	Quantitative Patterns	Qualitative Insights
Digital Health Literacy	High literacy correlated with improved decision confidence ($\beta = 0.38$)	Literate users contextualized data but remained influenced by peer norms
Trust Dynamics	Trust mediated literacy→confidence relationship	Trust negotiated through relational empathy, experiential similarity
Community Engagement	Active engagement predicted confidence ($\beta = 0.31$)	Interaction through question- answer threads fostered collective reasoning
Decision-Making Behavior	Higher DHL + trust → enhanced self-management	Decisions derived from iterative peer consultation and validation
Emotional Factors	Not directly measured	Emotional resonance underpinned sustained engagement but introduced bias

Overall, participants navigated digital health environments as *collective learners* rather than isolated information seekers. Their behaviors embodied both empowerment and vulnerability: empowerment through knowledge democratization and community solidarity, vulnerability through affect-mediated acceptance of uncertain information.

5. Conceptual Implications

The results advance a conceptual understanding of digital health decision-making as a **multilayered sociotechnical process** integrating cognitive literacy, relational trust, and emotional engagement. High literacy alone does not guarantee discernment; rather, it equips individuals to engage productively with peers, leveraging collective sense-making to refine actionable health judgments.

Copyright © 2026 by Riset Publishing Services LLC

These findings also extend contemporary frameworks of the Comprehensive Model of Information Seeking by incorporating the relational and emotional dimensions central to online health communities. They highlight the importance of designing interventions that strengthen both *critical digital reflection* and *community-level trust calibration*. This nuanced view bridges the existing gap between individual information competencies and the social ecology of digital health participation.

Discussion

This mixed-methods study examined the intertwined roles of digital health literacy, trust, and online community engagement in shaping decision-making among individuals living with chronic diseases. The findings illuminate the complexity of information-seeking in digital ecosystems and extend existing models of health information behavior by situating personal literacy within the sociotechnical and emotional contexts of online communities. The results reveal that cognitive competence, socio-relational trust, and emotional belonging interact dynamically—sometimes synergistically, sometimes tensioned—to determine how patients interpret, validate, and apply health information. These insights contribute both theoretically and practically to ongoing debates surrounding digital health empowerment, misinformation, and patient–provider relations.

Interpreting the Interplay of Literacy, Trust, and Engagement

Consistent with prior research, digital health literacy (DHL) emerged as a strong predictor of patients' confidence in health decisions (Choi et al., 2023; Torres et al., 2022). Yet the structural modeling results indicate that literacy exerts its influence largely through *trust pathways* rather than as an isolated competence. This extends the Digital Health Empowerment Model (Oh & Lee, 2023), which situates literacy within broader relational and technological contexts. Patients with high DHL were not simply better at identifying credible information; they were better equipped to triangulate between professional and peer knowledge networks, demonstrating an adaptive epistemic flexibility absent in lower-literacy groups.

However, the qualitative data nuance this apparent empowerment. High-literacy participants still relied on affectively charged cues—such as perceived empathy and experiential similarity—when evaluating information reliability. This finding aligns with recent studies showing that digital users continuously reconcile analytical scrutiny with emotional resonance (Vraga et al., 2022; Zhang & Kizilcec, 2023). It also supports Rains's (2022) ecological interpretation of information-seeking, suggesting that credibility judgments are social acts embedded in trust relations and platform affordances. Thus, the key differentiator between informed discernment and vulnerability to misinformation lies not solely in literacy but in reflexive trust calibration—the ability to consciously appraise when and why one trusts or doubts a source.

Patient Empowerment and the Collective Dimension of Decision-Making

The evidence reinforces the notion that online health communities are not peripheral to formal healthcare systems but integral to patients' self-regulatory ecosystems. Participants described using these platforms to "interpret" biomedical guidance, validate experiences, and shape ongoing treatment choices. This aligns with prior qualitative analyses that conceptualize patient forums as *communities of practice* facilitating experiential learning (Seppälä et al., 2023). Yet this study goes beyond depicting communities as supportive environments: it demonstrates that they function as epistemic collectives where patients engage in shared decision-making and iterative peer review.

The term *adaptive decision-making ecology* captures this interactivity. Patients do not merely seek facts; they co-construct meaning through iterative cycles of inquiry, experimentation, and feedback—processes observable in community discussions where advice is continuously contested and refined. Similar findings have emerged in analyses of diabetes and autoimmune disease forums, where patients collaboratively test lifestyle modifications and treatment adjustments in quasi-experimental ways (Zhang et al., 2023). Such collective cognition challenges traditional hierarchies of expertise but also underscores the need for health professionals to coexist within these discursive spaces.

Empowerment in this sense is relational rather than individualistic: it emerges from participation, validation, and mutual learning. However, empowerment is not uniformly beneficial. As van Wissen et al. (2023) caution, increased access to information can create "decision fatigue" and amplify the psychological burden of continuous vigilance. The present findings confirm this tension—participants reported both greater self-confidence and occasional anxiety when facing conflicting online advice. Consequently, empowerment initiatives must balance autonomy with supportive guidance rather than assume that more information automatically produces better choices.

Navigating Misinformation and the Role of Affective Trust

One of the study's most significant insights concerns the dual nature of trust as a facilitator of empowerment and a potential vector for misinformation. Quantitative data affirmed that higher community trust enhances self-efficacy, yet qualitative interviews revealed that the same trust can erode skepticism when emotional affiliation dominates analytic reasoning. This ambivalence resonates with Tanis and Hartmann's (2020) observation that relational warmth often supersedes factual accuracy in digital interactions.

Rather than dismissing such affective trust as irrational, it should be recognized as an adaptive response to uncertainty and systemic mistrust in formal institutions. For many participants, relational trust in peers compensated for perceived fragmentation, impersonality, or time constraints in clinical care. The prominence of experiential empathy as a credibility marker suggests that patients value *recognition*—the feeling of being understood—at least as much as

Copyright © 2026 by Riset Publishing Services LLC

informational precision. This finding echoes sociological analyses of lay expertise, which emphasize that trustworthiness in digital health spaces is co-constructed through shared experience and dialogic participation (Hardey, 2020).

Nonetheless, these dynamics expose structural vulnerabilities to misinformation. When the affective dimension of trust overshadows cognitive appraisal, peer endorsement rather than evidence becomes the deciding metric. The "soft acceptance" of unverified advice—observed particularly among emotionally bonded subgroups—indicates how misinformation can propagate even within ostensibly supportive communities. This underscores the importance of digital literacy interventions that cultivate *reflexive skepticism*—the ability to interrogate even trusted sources without undermining the relational fabric of community support.

Theoretical Extensions: Integrating Cognitive, Social, and Affective Layers

Collectively, the findings advance a tripartite model of digital health decision-making that integrates cognitive literacy, social trust, and affective engagement. This configuration refines existing theories of health information-seeking, such as Wilson's interaction model and the Comprehensive Model of Information Seeking, by incorporating emotional and networked variables absent from earlier formulations (Case & Given, 2019; Fung & Griffin, 2020). The model also suggests that information validation operates simultaneously at three levels:

1. **Cognitive filtering**, where individuals apply critical reasoning skills;
2. **Relational validation**, where peers co-endorse or challenge interpretations; and
3. **Affective alignment**, where belonging and empathy reinforce confidence.

Understanding how these layers interlock offers a richer theoretical lens for examining collective intelligence in online health behaviors. It further contributes to digital sociology by illustrating that cognitive authority in digital spaces is distributed rather than centralized—emerging through negotiations among users, technologies, and cultural norms.

Implications for Healthcare Practice and Communication

From a clinical standpoint, the study underscores that online information-seeking is not antagonistic to professional care but complementary when properly aligned. Many participants reported using digital information to prepare for consultations, clarify terminology, or formulate questions—an outcome linked to more productive patient–provider interactions (Kichler et al., 2023). However, these benefits depend on whether clinicians engage constructively with digitally informed patients. Negative or dismissive responses often drive patients further toward peer spaces, reinforcing the divide between lay and medical expertise (Calamari et al., 2022).

Healthcare professionals should thus approach digital engagement as an opportunity for co-learning rather than a threat to authority. Educational initiatives could train clinicians to assess and discuss online information during consultations, employing it as a springboard for dialogue. Parallel efforts in public health communication should leverage trusted community influencers and patient advocates within digital networks to disseminate credible content (Bender et al., 2021).

At a systems level, the findings have implications for designing trustworthy digital infrastructures. Platform moderation policies and algorithmic transparency influence users' exposure to credible information. Collaborative interventions—where health organizations support moderation or provide verified resource banners within online communities—may preserve the participatory ethos while enhancing informational integrity.

Designing Future Digital Interventions

To operationalize these insights, intervention design must move beyond static eHealth literacy training toward adaptive, context-sensitive models. Cognitive-behavioral frameworks that emphasize critical questioning and emotional regulation could be integrated into digital literacy curricula. Building patients' capacity to reflect on the emotional drivers of trust may mitigate the influence of persuasive but unreliable narratives.

Moreover, digital tools could integrate algorithmic "credibility cues," such as source provenance indicators or community-validated fact tags, without diminishing user autonomy. Evaluating the effect of such tools on behavioral outcomes should be prioritized in forthcoming clinical and informatics research. The combination of user-centered design and ethical AI can foster online environments that maintain empathy while elevating evidence standards.

Limitations and Future Research Directions

While this study offers a nuanced account of digital health behaviors, it is important to acknowledge contextual constraints. Self-reported measures may overestimate literacy and confidence, and the sample's English fluency limits generalizability to multilingual populations. Additionally, platform-specific dynamics—such as algorithmic ranking differences across social media sites—were beyond this study's analytic scope. Longitudinal and cross-cultural designs could address these limitations by tracking evolving patterns of engagement and decision-making over time.

From a methodological perspective, integrating behavioral analytics (e.g., comment frequency, sentiment polarity) with qualitative interpretation would enable richer modeling of digital discourse. Future research should also explore clinician perspectives to assess how online information practices influence clinical encounters from both sides of the consultation process.

Toward Reflexive Digital Health Empowerment

The present findings ultimately advocate for a reconceptualization of patient empowerment as *reflexive digital health empowerment*: an iterative

Copyright © 2026 by Riset Publishing Services LLC

process that requires both informational autonomy and collaborative discernment. Empowerment grounded in collective reflection rather than uncritical participation can foster resilience against misinformation while preserving the social value of community engagement.

Clinicians and policymakers must recognize online communities as legitimate extensions of the healthcare ecosystem—arenas where patients negotiate meaning, identity, and action. Harnessing their democratic potential requires a delicate balance between regulation and freedom, between expert guidance and peer agency. As digital ecosystems mature, the challenge lies not merely in delivering accurate information but in cultivating the cognitive and emotional tools patients need to navigate an abundant yet ambiguous information terrain.

In sum, this research contributes a multidimensional understanding of how chronic disease patients engage in digital sense-making and highlights the need for integrative strategies that bridge formal healthcare and informal digital networks. By reframing literacy as a relational, affective, and sociotechnical capacity, the study offers a pathway for designing inclusive digital health environments that empower without overwhelming—and that transform information access into informed, sustainable participation.

Limitations and Future Research

While this study advances understanding of digital health information-seeking and decision-making among chronic disease patients, several methodological and contextual constraints should be acknowledged. The sample, though diverse in disease representation, was limited to English-speaking participants with internet access and sufficient digital literacy to engage with the survey tools. This may have privileged more technologically confident subgroups and excluded marginalized populations—such as those with limited connectivity, lower socioeconomic status, or differing cultural attitudes toward digital health. Future studies should adopt multilingual and cross-cultural sampling frameworks to capture a broader spectrum of digital engagement and information behaviors (Gao et al., 2024).

The self-reported nature of both literacy and behavioral outcomes introduces another limitation. Participants may have overstated their ability to evaluate online information or their confidence in health decisions, creating potential social desirability bias. While triangulating survey data with qualitative interviews improved validity, further integration of objective behavioral metrics—such as digital trace or clickstream data—could enhance accuracy. Combining self-perception measures with platform analytics would deepen understanding of the gap between stated and actual information practices (Pfeiffer et al., 2024).

The cross-sectional design precludes causal inference. Relationships among literacy, trust, and decision-making were examined at a single time point, making it impossible to track the evolution of information evaluation and confidence over time. Longitudinal or panel designs could identify how exposure to online communities continuously shapes trust calibration, risk perception, and self-management efficacy. Experimental or quasi-experimental approaches might also isolate the effects of specific interventions—such as AI-based credibility indicators or clinician-moderated forums—on decision outcomes.

From a qualitative standpoint, while thematic saturation was achieved, the study did not fully account for platform-level algorithmic forces influencing visibility and prioritization of information. Future research should incorporate digital ethnography and computational content analysis to examine how platform design, moderation policies, and recommender systems structure patients' information environments (Haimson et al., 2024). Integrating these socio-technical dimensions would enhance the ecological validity of future models of digital health behavior.

Finally, future research should explore clinical co-production models that align online community insights with healthcare delivery. Investigations into clinician perspectives and communication strategies could inform frameworks for integrating patient-sourced knowledge into consultations and shared decision-making. Collectively, these avenues point toward a multidisciplinary research agenda—combining behavioral informatics, sociology, and data science—to develop equitable, trustworthy, and context-sensitive digital health ecosystems that support chronic disease self-management.

Conclusion

This study provides an integrated understanding of how chronic disease patients navigate, interpret, and act upon health information in digital environments. Through the combined analysis of survey data and in-depth interviews, it reveals that digital health literacy, trust, and community engagement are interdependent rather than discrete determinants of online decision-making. Patients use digital platforms not merely as repositories of information but as socio-emotional ecosystems through which they construct meaning, test advice, and calibrate confidence in their self-management practices. The findings advance digital health research by conceptualizing online participation as a *collective cognitive process* combining informational, relational, and affective dimensions.

The study contributes to ongoing discussions in health informatics and public health by reframing patient empowerment as a relational, reflexive practice. Rather than equating empowerment with information abundance, results indicate that empowerment emerges from patients' ability to negotiate credibility, manage emotional resonance, and integrate peer validation with professional guidance. This reframing has tangible implications for healthcare systems designing patient-centered digital strategies. Clinicians and policymakers must recognize peer-driven communities as legitimate spaces of learning and co-production, where the integration of credible evidence with lived experience can strengthen adherence and foster shared decision-making.

For health systems, the implications extend to policy and technological design. Digital literacy interventions should evolve beyond teaching technical navigation

Copyright © 2026 by Riset Publishing Services LLC

toward cultivating *critical trust awareness*—the capacity to evaluate both institutional and peer-generated content. Health authorities and digital platforms share responsibility in establishing verification mechanisms, transparent algorithms, and trust-building communication that preserve the participatory ethos while safeguarding against misinformation (Rains, 2022; Zhang & Kizilcec, 2023). Moreover, embedding ethical AI and community moderation frameworks within digital health infrastructures can balance openness with informational integrity.

Ultimately, this research underscores that the effectiveness of digital health technologies depends not only on access or design but on their alignment with the social realities of chronic illness. By revealing how online engagement shapes real-world health behaviors, the study calls for an integrated digital health policy agenda—one that bridges professional medicine, patient communities, and data governance to enable equitable, trustworthy, and emotionally supportive digital ecosystems for chronic disease care.

References

1. Bender, J. L., et al. (2021). Social support in digitally mediated peer communities for chronic illness. Patient Education and Counseling, 104(5), 1145–1153.
2. Borah, P., et al. (2023). The influence of health misinformation exposure on chronic disease management. Health Communication, 38(2), 220–233.
3. Braun, V., & Clarke, V. (2021). One size fits all? What counts as quality practice in (reflexive) thematic analysis. Qualitative Research in Psychology, 18(3), 328–352.
4. Calamari, M., et al. (2022). Clinician responses to digitally empowered patients. BMJ Open, 12(10), e058441.
5. Case, D. O., & Given, L. M. (2019). Looking for information: A survey of research on information seeking. Emerald Publishing.
6. Chen, S., Li, Y., & Chang, C. (2022). Understanding social influences on eHealth literacy and health information evaluation. Journal of Medical Internet Research, 24(8), e38460.
7. Choi, E. Y., et al. (2023). Digital health literacy and self-management among older adults with chronic conditions. Telemedicine and e Health, 29(11), 1230–1241.
8. Creswell, J. W., & Plano Clark, V. L. (2023). Designing and conducting mixed methods research (4th ed.). Sage.
9. Eysenbach, G. (2021). The role of online health communities in participatory medicine. Journal of Internet Medicine, 26(4), 321–333.
10. Fergie, G., Hilton, S., & Hunt, K. (2021). Trust and credibility cues in online health information. Journal of Health Communication, 26(9), 620–631.
11. Fetters, M. D., Curry, L. A., & Creswell, J. W. (2019). Achieving integration in mixed-methods designs—principles and practices. Health Services Research, 54(1), 213–230.
12. Fritz, R. L., et al. (2020). Peer support and emotional coping in chronic illness digital forums. Patient Education and Counseling, 103(7), 1424–1431.
13. Fung, T., & Griffin, R. (2020). Risk perception and information seeking in online health contexts. Journal of Health Communication, 25(5), 395–406.
14. Gao, J., Wu, Y., & Li, K. (2024). Cultural determinants of digital health trust across online communities. Digital Health, 10(1), 55–71.
15. Hair, J. F., et al. (2022). Multivariate data analysis (9th ed.). Cengage Learning.
16. Haimson, O., et al. (2024). Algorithmic mediation and health information visibility on social platforms. New Media & Society, 26(3), 497–516.
17. Hardey, M. (2020). Digital health publics and patient empowerment. Sociology of Health & Illness, 42(7), 1505–1521.
18. Huang, G., Ng, C., & Bhandari, R. (2021). Collective intelligence in online health forums. Social Science & Medicine, 284, 114235.
19. Kichler, E., et al. (2023). Patient–physician communication in the age of online health information. Health Expectations, 26(5), 2347–2358.
20. Knoll, L., et al. (2023). Rethinking eHealth literacy as a contextual practice. Health Informatics Journal, 29(3), 215–229.
21. Kordzadeh, N., & Young, D. K. (2021). Online patient narratives and clinical decision-making. Information Systems Journal, 31(1), 69–95.
22. Lupton, D., & Lewis, S. (2022). Chronic pain and online peer support: Negotiating clinical and experiential authority. Sociology of Health & Illness, 44(9), 1479–1495.
23. Metzger, M., et al. (2021). Cognitive processing of online health information credibility. Journal of Broadcasting & Electronic Media, 65(3), 349–367.
24. Naslund, J. A., et al. (2021). Engagement in online peer networks and health self efficacy among chronic disease populations. Psychological Medicine, 51(12), 2044–2052.
25. Norman, C. D., & Skinner, H. (2022). Assessing eHealth literacy in social media environments. Journal of Health Communication, 27(9), 712–723.
26. Norman, C. D., Skinner, H., & Wilding, M. (2022). Digital literacy, misinformation, and patient decision dynamics. Journal of Health Communication, 27(9), 712–723.
27. Nowell, L. S., et al. (2019). Thematic analysis: Striving to meet the trustworthiness criteria. International Journal of Qualitative Methods, 18, 160940691987287.
28. Oh, H., & Lee, D. (2023). Digital health empowerment and user agency. Journal of Health Informatics, 15(1), 44–59.
29. Patton, M. Q. (2020). Qualitative research and evaluation methods (4th ed.). Sage.

Copyright © 2026 by Riset Publishing Services LLC

30. Peters, K., et al. (2022). The literacy–trust paradox in digital health. Information, Communication & Society, 25(10), 1378–1395.
31. Pfeiffer, D., et al. (2024). Integrating quantitative analytics with qualitative inquiry in digital health research. Health Informatics Journal, 30(1), 61–78.
32. Rains, S. A. (2022). Ecological approaches to digital information seeking. Communication Theory, 32(3), 321–342.
33. Saunders, B., et al. (2018). Saturation in qualitative research: Exploring its conceptualization and operationalization. Quality & Quantity, 52(4), 1893–1907.
34. Seppälä, E., et al. (2023). Online communities of practice and patient learning. Patient Education and Counseling, 112(2), 220–230.
35. Sørensen, T., et al. (2021). Contextual variability in digital health literacy assessments. International Journal of Environmental Research and Public Health, 18(22), 11931.
36. Tanis, M., & Hartmann, T. (2020). Social cues and trust formation in online health advice. Computers in Human Behavior, 109, 106371.
37. Torres, R., et al. (2022). Digital health literacy and chronic illness self management. International Journal of Medical Informatics, 159, 104669.
38. Townsend, L., & Wallace, C. (2021). Social media research: A guide to ethics. Sage.
39. van der Vaart, R., et al. (2021). Revisiting eHealth literacy in the era of ubiquitous health data. Telemedicine and e Health, 27(9), 971–979.
40. van Wissen, L., et al. (2023). Digital empowerment and decision fatigue among chronic patients. Social Science & Medicine, 326, 115857.
41. Vraga, E. K., et al. (2022). Perceptions of authenticity in social media health communication. Health Education Research, 37(5), 381–397.
42. Wang, X., Lee, J., & Tran, V. (2024). Mapping discourse flows and trust networks in chronic disease online communities. Computers in Human Behavior, 148, 107915.
43. Wohlmann, A., et al. (2021). Emotional filtering in digital health information-seeking. Information Processing & Management, 58(2), 102460.
44. World Health Organization. (2023). Global status report on noncommunicable diseases. Geneva: World Health Organization.
45. Zhang, L., Park, S., & Kim, H. (2023). Mixed-methods perspectives on online health information behaviors. Health Informatics Journal, 29(1), 45–61.
48. 25(9), 2384–2401.*
46. Zhang, S., & Kizilcec, R. (2023). Dual processing model of online health evaluation. Computers in Human Behavior, 141, 107620.
47. Zhang, Y., et al. (2023). Everyday learning and identity in online diabetes communities. New Media & Society,

Copyright © 2026 by Riset Publishing Services LLC