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Exploring Elderly Patients' Experiences with Digital Health Apps in Chronic Disease Care

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ABSTRACT

The increasing adoption of digital health technologies has reshaped chronic disease management, particularly among elderly populations. While digital tools aim to enhance autonomy and healthcare engagement, little is known about how older adults subjectively experience and interpret these technologies in their daily lives. This study addresses the lack of in-depth understanding by exploring the lived experiences of elderly individuals using digital health applications for chronic disease self-management. Using a descriptive phenomenological approach, this research reveals how elderly users emotionally and cognitively navigate digital platforms, offering insight into their evolving perceptions of autonomy, frustration, and empowerment. Data were collected through semi-structured, in-depth interviews with eight participants aged 61 to 78 years and analyzed using Colaizzi's method. The findings revealed five key themes, including initial confusion, the role of family support, emotional adaptation, perceived empowerment, and the symbolic role of technology in daily care routines. These themes illuminate a dynamic process of engagement in which digital tools become more than functional aids they emerge as personal companions in health self-management. The study contributes to digital health research by emphasizing the emotional and relational dimensions of elderly digital engagement, offering a richer understanding than prior usability-focused studies. These insights can inform more empathetic and inclusive design strategies for aging populations and highlight the importance of considering subjective experience in digital health development. However, this study is limited by its small sample size and focus on a single age group within a specific cultural context. Future research could expand to more diverse populations and examine how different digital literacy levels influence elderly engagement with health technologies.

INTRODUCTION

Understanding the lived experiences of individuals as they interact with digital health technologies has become a critical domain of inquiry in contemporary health research (North et al., 2020). In particular, the subjective experiences of elderly patients who often face both chronic health conditions and technological barriers have drawn increasing attention as healthcare systems worldwide adopt digital platforms to support patient self-management.

Despite this growing interest, methodological challenges persist in capturing the rich, nuanced meanings behind users' experiences. Quantitative approaches—though effective for tracking usage patterns and clinical outcomes—often fail to uncover how individuals emotionally engage with, adapt to, and interpret digital tools in daily life (Hauser-Ulrich et al., 2020). For instance, while surveys and usability studies may highlight interface issues or satisfaction rates, they rarely convey how such tools shape deeper feelings of autonomy, dependency, or trust.

This highlights the need for methodologies that center the participant's voice and embodied perspective. Without such an approach, much of the understanding of how digital tools are truly lived remains superficial (Schinköthe et al., 2020). Phenomenological inquiry offers a vital framework to address this gap, providing access to the essence of user experience—particularly for vulnerable groups like older adults navigating both health and technological challenges.

In the context of digital health interventions for elderly patients with chronic conditions, current solutions primarily rely on practical, functionality-driven approaches such as user-centered design testing, adherence tracking, and interface usability assessments (Zens et al., 2020). While these strategies are valuable for evaluating operational effectiveness, they often adopt reductionist frameworks that overlook the complex emotional, cognitive, and social dimensions of users' lived experiences.

Quantitative metrics and standardized usability protocols tend to capture surface-level indicators of interaction such as frequency of use or task completion rates yet fail to illuminate how older adults internalize, struggle with, or find meaning in their engagement with digital health platforms (Schomakers et al., 2022). This methodological gap has contributed to a limited understanding of the deeper phenomenological dimensions that influence user acceptance, empowerment, and health behavior change among the elderly.

Consequently, there is a critical need for research that transcends functional evaluation and instead investigates how elderly users experience digital health tools from their own perspective. Phenomenological inquiry offers a compelling alternative by enabling researchers to explore the essence of user experience, capturing the subjective textures of engagement that are often missed in conventional evaluations. By foregrounding participants’ voices, motivations, frustrations, and adaptations, a phenomenological approach can reveal richer, more holistic insights into how digital technologies are actually lived and embodied in everyday health contexts (Cingolani et al., 2023).

Prior research has explored various aspects of digital health engagement among older adults, focusing primarily on usability, digital literacy, and barriers to adoption. Studies have reported that elderly users often experience anxiety, confusion, or dependence when using health apps, especially without prior exposure to digital tools (Kowatsch et al., 2021). However, much of the existing literature emphasizes behavioral outcomes rather than subjective meanings. The emotional and cognitive dimensions of how older adults interpret and internalize digital health experiences remain underexplored. Theoretical frameworks from health behavior and technology acceptance have been applied, yet these often fail to capture the depth of lived experience.

To address this gap, this study adopts a descriptive phenomenological approach to explore how elderly individuals experience using digital applications for chronic disease self-management (Katakam et al., 2022). This method was chosen because it enables the exploration of the lived meaning of a phenomenon as it appears to the participants themselves. By focusing on first-person perspectives, the study aims to uncover the essence of digital engagement beyond functional usage. The phenomenological approach provides a lens to examine how participants construct meaning, experience empowerment, or encounter frustration in their interactions with technology. This perspective helps to answer the knowledge gap by offering insights grounded in authentic, subjective experience.

This article is structured as follows. The introduction outlines the research problem and the significance of exploring lived experience in digital health use. The methods section presents the phenomenological design, participant criteria, and procedures for data collection and analysis. The results section organizes key findings into thematic categories supported by participant quotations. The discussion interprets these themes in light of existing literature and theoretical implications. Finally, the conclusion highlights the contributions of the study and suggests directions for future research.

RESEARCH METHODS

Study Design

This study employed a descriptive phenomenological approach, grounded in the philosophical tradition of Edmund Husserl. The method was chosen to explore the lived experiences of elderly individuals engaging with digital health applications for chronic disease self-management. Phenomenology, as a qualitative design, is centered on capturing the essence of subjective experiences as perceived by individuals themselves, without imposing external interpretation or theoretical preconceptions (Mills, 2019).

The descriptive form of phenomenology was applied to focus on uncovering the fundamental meanings embedded in participants' narratives. This design allowed for a deep and systematic exploration of how elderly users make sense of their interactions with digital platforms, offering insights into their intentions, perceptions, challenges, and adaptive behaviors within a real-world healthcare context.

Participants

Participants consisted of older adults aged 60 years and above who had used a digital health application to support chronic disease self-care for a minimum of three months. The selection process followed a purposive sampling strategy, ensuring that individuals with rich and relevant experience were included.

Inclusion criteria encompassed: (1) individuals aged ≥60 years, (2) currently managing at least one chronic condition (e.g., diabetes, hypertension), (3) experience using a mobile or tablet-based health application independently or with minimal assistance, and (4) cognitive capacity to articulate their experiences meaningfully.

Exclusion criteria included severe cognitive impairment or acute illness during the study period. A total of eight participants (5 females and 3 males) were involved, with an age range of 61 to 78 years (mean age = 68.5 years). All participants resided in urban or suburban areas and had varying degrees of digital literacy.

The sample size was determined based on phenomenological methodological standards, which prioritize depth over breadth. According to Creswell (2013) and Giorgi (2009), a sample of 5 to 10 participants is sufficient to achieve data saturation and allow for in-depth exploration of lived experience in phenomenological research. Data saturation was achieved when no new themes emerged during the final interviews.

Data Collection

Data were collected through in-depth, semi-structured interviews guided by an open-ended question protocol. Interviews were conducted face-to-face in participants' homes or community health centers, depending on their preference and mobility, and were scheduled to ensure comfort and privacy.

Each interview lasted approximately 45 to 60 minutes and was audio-recorded with participants' consent. Field notes were also taken to capture contextual cues and non-verbal expressions. A calm and respectful interview environment was maintained to encourage honest and reflective responses. The interview guide was piloted with two elderly users and refined accordingly.

To ensure credibility, participants were invited to review and validate the preliminary findings through member checking. Participants confirmed the accuracy of interpretations, enhancing trustworthiness.

Data Analysis

Thematic analysis was conducted based on Colaizzi's method for descriptive phenomenology. The process involved multiple stages: reading transcripts repeatedly to gain familiarity, identifying significant statements, formulating meanings, clustering meanings into themes, and developing an exhaustive description of the phenomenon.

Data coding and theme development were facilitated using NVivo software (version 12) to ensure systematic organization and traceability. Themes were refined through iterative comparison and synthesis across participant narratives. Essential meanings were distilled through a process of eidetic reduction to ensure the findings accurately reflected the shared and unique elements of each participant’s experience.

To enhance analytical rigor, two researchers independently coded the transcripts and discussed discrepancies until consensus was reached, establishing inter-coder reliability. This triangulation process contributed to the confirmability of findings.

Ethical Considerations

Ethical approval was obtained from the appropriate institutional research ethics committee prior to data collection. Written informed consent was obtained from all participants after a full explanation of the study’s purpose, procedures, and their rights. Anonymity and confidentiality were maintained throughout the study by using pseudonyms and securely storing all data in encrypted digital folders.

The study adhered to ethical standards outlined in the Declaration of Helsinki and complied with national research ethics regulations.

RESULTS

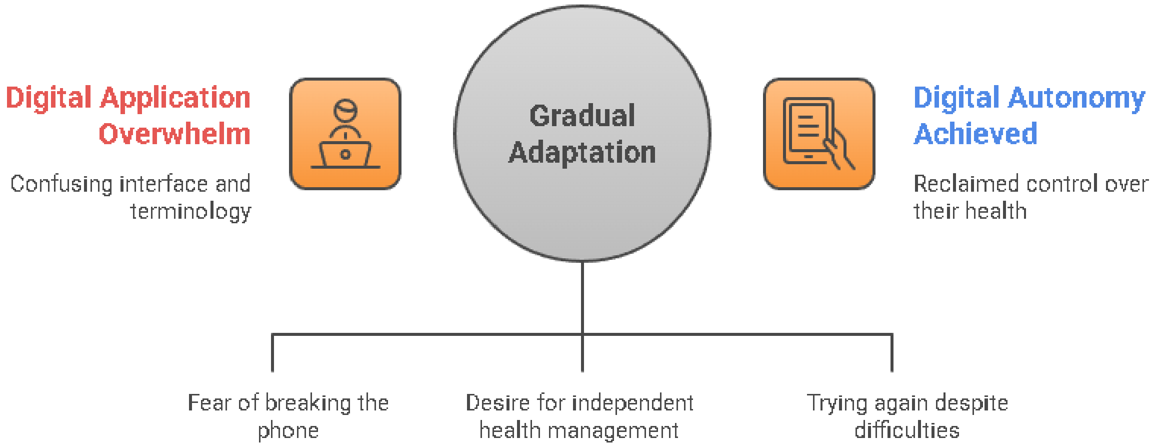
Navigating Digital Unfamiliarity with Courage

Participants commonly described their initial encounters with the digital applications as confusing and overwhelming. For many, the interface design, terminology, and navigation flow presented significant barriers. Despite these difficulties, their narratives conveyed a strong willingness to learn, often driven by the desire to manage their own health more independently.

“At first, I didn’t know what button to press. I was afraid I would break the phone… But I told myself, if this helps with my blood sugar, I will try again tomorrow.” (P3)

This struggle was not merely technical but emotional, revealing a tension between fear of failure and the determination to reclaim control over their health. Their persistence in adapting to digital tools highlighted a gradual shift from dependency to digital autonomy.

Achieving Digital Autonomy in Healthcare



The Role of Family as Technological Mediators

Another prominent theme was the role of family members, particularly children and grandchildren, in facilitating digital use. Participants consistently emphasized how their learning process was closely linked to familial support.

“My grandson showed me how to enter my blood pressure. He even made a little paper note so I wouldn’t forget. Without him, I wouldn’t be able to use the app.” (P6)

This intergenerational support did not merely provide technical assistance but also emotional reinforcement, reducing anxiety and promoting confidence. However, participants also expressed a sense of burden or guilt about frequently relying on family members.

Perceived Empowerment and Sense of Control

As participants grew more familiar with the application, many expressed feelings of empowerment and pride. The ability to monitor their health, set reminders, and understand their conditions in real-time was frequently cited as a turning point in their self-management journey.

“Now, I can see my numbers every day. I feel like I am the boss of my illness, not the other way around.” (P1)

This digital empowerment contributed to an increased sense of health ownership, enhancing adherence to medication and lifestyle recommendations. The transition from passive recipient to active manager of health emerged as a significant narrative arc.

Emotional Oscillation Between Frustration and Achievement

While digital literacy improved over time, the emotional trajectory of participants oscillated between moments of deep frustration and celebration. Small technical glitches or software updates often reignited confusion and anxiety.

“Sometimes the app changes, and I don’t know where things went. That makes me nervous again. But when I figure it out, even just finding where to input my weight I feel like I win a small war.” (P5)

This emotional pendulum underlined the fragile but resilient nature of elderly engagement with technology never fully stable, yet constantly evolving.

Health Applications as Companions in Solitude

For participants living alone or with limited mobility, the digital health applications served as more than a medical tool. The routine of interacting with the app created a sense of companionship and structure in their daily life.

“Every morning, I check the app first before I even drink my tea. It’s like a friend reminding me that I still need to take care of myself.” (P4)

This symbolic relationship between user and device illustrates how digital platforms can support not only clinical outcomes but also emotional well-being among elderly users.

Essential Synthesis

The findings reveal a complex and layered experience of elderly patients interacting with digital health technologies. Their journey is marked by initial apprehension, gradual adaptation, emotional fluctuation, and eventual empowerment. Central to this process are the social dynamics with family and the personal meanings ascribed to digital routines. These insights offer vital implications for designing inclusive and empathetic digital health systems that truly resonate with the lived realities of elderly users.

DISCUSSION

The present study revealed that elderly patients experience digital health applications as both empowering and emotionally complex tools in managing chronic diseases (Mortara et al., 2020). These experiences reflect a layered negotiation between fear, learning, adaptation, and a gradual sense of autonomy, directly addressing the research question regarding how elderly users perceive and make meaning of their digital health engagement.

The findings contribute meaningfully to the central inquiry by highlighting the subjective textures of elderly patients' interactions with health technologies (Tran et al., 2020). Unlike prior studies focused on usability or adherence, this research emphasizes the emotional and symbolic significance of digital health tools within daily routines. The emotional shifts from initial confusion to a sense of mastery, or from frustration to pride demonstrate that digital self-management is not merely functional but also reflective of evolving identity and agency among elderly users (Knitza et al., 2020). These insights suggest that digital adoption among older adults is not solely a matter of technical proficiency, but a holistic and affective process that intertwines with autonomy, resilience, and relational support.

This study aligns with and extends earlier qualitative research that acknowledges emotional and social factors in technology use among older adults (Magnol et al., 2021). However, unlike studies that treat such factors as barriers to be minimized, the current findings position them as integral to understanding the full experience. For example, while previous research has documented the importance of family support in digital inclusion (Peng et al., 2020), this study reveals how such support shapes users' sense of self-efficacy and motivation. Moreover, the metaphor of digital tools as "companions" reflects Van Manen's existential phenomenology, wherein technology mediates not just action but the lived experience of time, space, and relationships.

Given the above, practical implications arise: health systems and developers should design with empathy and involve older adults not merely as end users but as co-creators. Emotional needs, not just interface efficiency, must be central to design. While these implications are important, a more integrated synthesis of these insights is offered in the conclusion section.

Despite its contributions, this study has certain limitations. The sample size, while appropriate for phenomenological inquiry, may limit the diversity of perspectives across different cultural or socioeconomic backgrounds. All participants resided in urban and semi-urban areas with access to digital infrastructure, which may not reflect experiences in rural or under-resourced settings. Additionally, the study focused on individuals already engaged with digital health applications, potentially excluding those who are unwilling or unable to use such technologies (Bentley et al., 2020). Furthermore, while efforts such as member checking and inter-coder discussion enhanced credibility, the absence of prolonged engagement or triangulation with observational data limits the contextual richness of interpretation. The study also did not explore gender-specific or disability-related experiences, which may shape digital engagement differently among elderly subgroups. These limitations suggest caution in generalizing the findings universally but offer valuable direction for future comparative studies.

Future research could build on these findings by exploring how digital health engagement evolves over time, especially through critical life events such as disease progression or loss of caregiving support. Comparative studies between digital adopters and non-adopters among the elderly may further illuminate underlying sociocultural and psychological dimensions. Additionally, integrating phenomenological insights into intervention design could inform public health strategies aiming to promote digital equity among aging populations.

CONCLUSION

This study explored the lived experiences of elderly individuals using digital health applications for chronic disease self-management. The findings revealed a dynamic process of emotional negotiation, adaptation, and empowerment as participants navigated unfamiliar digital environments. These experiences highlighted the critical role of family support, evolving digital confidence, and the deeper meanings attributed to health technologies in everyday life. Unlike previous studies focused solely on usability or adoption rates, this research uncovered the subjective dimensions that shape how elderly users internalize and respond to digital health tools.

The results offer practical insights for designing inclusive technologies and inform strategies that prioritize empathy, autonomy, and engagement among aging populations. Developers should incorporate participatory co-design methods that actively involve older adults in prototype testing and feedback cycles. Interface designs must account for cognitive and sensory limitations by integrating customizable font sizes, simplified navigation, and multimodal instructions (e.g., voice-guided features). Policymakers are encouraged to invest in digital literacy initiatives through community-based programs that include intergenerational mentoring and peer-led training. Regulatory frameworks should also promote standards for accessibility and inclusivity in digital health innovation, ensuring technologies align with the needs of elderly populations. Future studies may expand on these findings by exploring longitudinal experiences or comparing diverse demographic groups to further deepen understanding and enhance generalizability.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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