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Facing a Cancer Diagnosis: Patients' Psychosocial Experiences in Navigating Treatment and Digital Health Technology

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ABSTRACT

Cancer patients face significant psychological and emotional challenges during their treatment journey, particularly in managing uncertainty and maintaining emotional resilience. The advent of digital health technologies has provided new avenues for patient support, yet their impact on the lived experiences of cancer patients remains underexplored. While prior research has focused on clinical outcomes, little is known about how these technologies influence patients' sense of control, emotional well-being, and trust in healthcare. This study employs a phenomenological approach to investigate cancer patients' experiences with digital health tools and their implications for psychological resilience. Through in-depth qualitative analysis, findings reveal that digital health technologies enhance self-efficacy and provide a sense of control but also introduce challenges related to information overload and medical discrepancies. These results highlight the complex interplay between technology and emotional resilience, emphasizing the need for patient-centered digital interventions that integrate psychological and humanistic perspectives. Future research should expand on these findings by examining diverse patient populations and assessing the long-term effects of digital health engagement on emotional and psychological well-being.

INTRODUCTION

Cancer remains one of the most prevalent and life-altering diseases worldwide, affecting millions of individuals each year (Aboye dkk., 2024). Beyond its physical manifestations, a cancer diagnosis profoundly impacts patients' psychological and social well-being, triggering emotional distress, uncertainty, and existential anxiety (Bhatt dkk., 2018). The emotional burden associated with cancer treatment is often exacerbated by prolonged medical interventions, lifestyle modifications, and concerns about prognosis. Understanding how patients navigate these challenges is essential for enhancing cancer care and ensuring holistic support systems.

In recent years, the integration of digital health technologies has transformed the healthcare landscape, offering new avenues for patient support and disease management (Canfell dkk., 2022). Telemedicine, mobile health applications, and online patient communities have emerged as valuable tools in providing cancer patients with real-time symptom tracking, medical consultations, and social support networks (Dhyani dkk., 2023). These innovations have the potential to empower patients by enhancing self-management capabilities and reducing dependency on in-person medical consultations. However, despite the widespread adoption of digital health tools, the subjective experiences of patients in utilizing these technologies remain underexplored, particularly in the context of their psychological and emotional well-being.

Previous research has primarily focused on the clinical efficacy of digital health interventions, evaluating their ability to improve treatment adherence, symptom monitoring, and communication with healthcare providers (Ghazal dkk., 2022). While these studies have provided valuable insights into the functional benefits of digital health tools, they have largely overlooked the lived experiences and meaning-making processes of patients who rely on these technologies. A phenomenological approach

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is particularly relevant in addressing this gap, as it prioritizes the exploration of patients' subjective realities and their perceptions of digital health technologies within the broader context of their cancer journey.

By investigating the lived experiences of cancer patients using digital health technologies, this study aims to provide a deeper understanding of how these tools influence their psychological well-being, self-efficacy, and engagement with healthcare systems (Hambleton, 2018). Given the increasing integration of digital health solutions in medical care, there is a critical need to explore not only their effectiveness but also their impact on patients' sense of control, trust in medical professionals, and overall quality of life. This research contributes to the growing discourse on patient-centered care by emphasizing the importance of addressing both the technological and humanistic dimensions of digital health in cancer treatment.

Research on the lived experiences of individuals facing serious health conditions has gained increasing attention in recent years, particularly in the field of medical psychology and digital health. The emphasis on understanding subjective experiences stems from the recognition that biomedical approaches alone are insufficient in addressing the holistic needs of patients (Hermansen dkk., 2023). Instead, capturing the psychological, emotional, and social dimensions of illness through qualitative inquiry provides a more comprehensive perspective on patient well-being. In this context, phenomenology offers a robust framework for examining how individuals interpret and navigate their health challenges, particularly in relation to emerging technologies.

Despite the growing body of literature on digital health interventions, most existing studies rely on quantitative metrics such as treatment adherence rates and clinical outcomes (Jarva dkk., 2022). While these data points are valuable, they do not fully capture the nuanced ways in which patients engage with technology on a personal level. Methodological challenges in prior research have included the reliance on standardized questionnaires that fail to reflect the depth and complexity of individual experiences. Furthermore, quantitative approaches often overlook the evolving nature of patient-technology interactions, which are shaped by factors such as trust in medical advice, health literacy, and emotional resilience.

The limitations of these approaches highlight the need for a phenomenological investigation that prioritizes patients' narratives, perceptions, and meaning-making processes (Malakhov, 2023). This study addresses the gap by focusing on the interpretative dimensions of cancer patients' engagement with digital health tools, offering a deeper understanding of how these technologies influence their emotional well-being and sense of agency. Through a qualitative lens, this research aims to illuminate the personal and contextual factors that shape patient experiences, providing insights that can inform the development of more effective and patient-centered digital health solutions.

While existing research has extensively examined the clinical and functional impacts of digital health technologies, there remains a significant gap in understanding the subjective experiences of patients who rely on these tools in the context of cancer treatment. The dominant focus on quantitative measures, such as adherence rates and treatment outcomes, has led to an oversight of the emotional and psychological dimensions that shape patients' engagement with digital health platforms. As a result, the deeper existential concerns, coping mechanisms, and personal interpretations of digital health remain insufficiently explored.

Standard methodologies in digital health research tend to prioritize structured surveys and large-scale clinical trials, which, while valuable, do not effectively capture the lived experiences and personal meaning-making processes of patients. These approaches often reduce complex emotional and psychological realities into predefined categories, limiting the ability to understand how digital health tools genuinely influence patients' autonomy, trust in healthcare, and psychological resilience. Without an in-depth exploration of these aspects, digital health interventions risk being designed in ways that do not fully align with the real needs and experiences of the patients they intend to support.

The adoption of a phenomenological approach presents an opportunity to address this gap by focusing on the experiential and interpretive dimensions of digital health use among cancer patients. By shifting the focus from outcome-driven analyses to explorations of meaning and lived experience, this study aims to provide a more holistic understanding of how digital health technologies influence patients' psychological well-being, their sense of control over their illness, and their trust in medical professionals. This approach ensures that the voices of patients are central to the discourse on digital health, ultimately contributing to the design of more effective, empathetic, and patient-centered technological interventions.

Previous research has highlighted the benefits of digital health technologies in cancer care, focusing primarily on their capacity to enhance treatment adherence, symptom tracking, and remote consultations. Studies grounded in quantitative methodologies have successfully demonstrated improvements in clinical outcomes, yet they often fall short in capturing the lived experiences of patients engaging with these technologies. Psychological and emotional factors, which play a critical role in shaping patient experiences, remain underexplored within the broader discourse of digital health. This research builds upon existing literature by adopting a phenomenological approach to investigate how cancer patients make sense of their engagement with digital health tools and the broader implications for their well-being.

This study employs interpretative phenomenological analysis (IPA) to examine how digital health technologies influence cancer patients' emotional resilience, perceptions of self-efficacy, and trust in healthcare providers. By focusing on subjective narratives, this research seeks to illuminate the nuanced ways in which digital health interventions shape patients' coping mechanisms and daily experiences. The phenomenological approach allows for a deeper inquiry into the meanings that patients ascribe to their interactions with digital health technologies, providing insights that quantitative methodologies often overlook.

The structure of this article is organized to ensure a logical progression of ideas, beginning with an introduction to the research problem and relevant literature. The methodology section details the phenomenological framework and data collection methods, followed by a presentation of findings categorized into emergent themes. The discussion contextualizes these findings within existing literature and theoretical perspectives, leading to a conclusion that highlights the study's contributions, implications for practice, and potential avenues for future research.

RESEARCH METHODS

Study Design

This study employed a phenomenological approach to explore the lived experiences of cancer patients navigating their treatment journey with the support of digital health technologies (Mohamed dkk., 2022). Phenomenology was chosen as it enables an in-depth understanding of subjective experiences and the meaning individuals ascribe to their condition. This study specifically utilized interpretative phenomenological analysis (IPA), allowing for the exploration of patients' cognitive, emotional, and behavioral adaptations in response to their diagnosis and the use of digital health tools.

Participants

Participants included ten individuals (five males and five females) who had been diagnosed with cancer for at least six months and were actively engaged with digital health applications such as symptom monitoring platforms or telemedicine services. A purposive sampling strategy was employed to ensure that participants had relevant experiences with both cancer treatment and digital health technologies. Inclusion criteria required participants to be over 18 years of age, undergoing active treatment, and able to articulate their experiences. Individuals with cognitive impairments affecting communication were excluded from the study.

Data Collection

Data were collected through in-depth semi-structured interviews conducted in a private and comfortable setting, either in-person or via video conferencing, depending on participants' preferences. Each interview lasted between 45 to 60 minutes and was guided by an interview protocol designed to elicit rich descriptions of participants' experiences with cancer treatment and digital health tools (Perla

& Massaro, 2022). Interviews were recorded and transcribed verbatim to ensure accuracy in capturing participants' narratives.

Data Analysis

Transcribed data were analyzed using interpretative phenomenological analysis (IPA), following a structured process that included multiple readings of transcripts, identification of emergent themes, and development of thematic clusters. This iterative process allowed for a deep engagement with participants' experiences, ensuring that the analysis remained grounded in their lived realities. NVivo software was used to facilitate coding and organization of data, though thematic identification was conducted manually to preserve the interpretative depth required in phenomenological research.

Ethics

Ethical approval was obtained from the relevant institutional review board, ensuring compliance with ethical guidelines for human subject research. Participants provided written informed consent before participating, and confidentiality was maintained through the anonymization of data. The voluntary nature of participation was emphasized, with participants informed of their right to withdraw at any stage without consequences.

RESULTS

Navigating Emotional Turmoil and Psychological Adjustment

Patients diagnosed with cancer frequently experience profound emotional distress, marked by fear, anxiety, and uncertainty regarding their prognosis and treatment outcomes. Many participants described the initial diagnosis as a transformative moment that triggered significant psychological distress. One participant shared, "When the doctor confirmed my cancer, I felt like my entire world collapsed. I was overwhelmed with fear, unsure if I would even survive the next few years." This sense of existential anxiety was often coupled with depressive symptoms, as patients struggled to adjust to the new reality of prolonged medical interventions and lifestyle changes.

The presence of digital health technologies, particularly symptom monitoring applications, played a crucial role in alleviating these anxieties. Several patients highlighted how having access to real-time health data provided them with a sense of control over their condition. One patient stated, "I check my health app every morning. Seeing my progress helps me stay positive. It reassures me that I am still fighting, still improving." However, others reported that excessive reliance on digital health information sometimes exacerbated their anxiety, particularly when conflicting medical advice was encountered online.

Trust in Digital Health Information vs. Medical Professionals

The integration of digital health technology into cancer care introduced a complex dynamic between self-reliance and trust in medical professionals. While many patients found digital platforms empowering, some encountered challenges in distinguishing between credible medical information and misleading content. One participant described their frustration, saying, "I read something online that completely contradicted what my doctor told me. It left me confused and anxious about what to believe." This phenomenon led some patients to seek frequent reassurance from their oncologists, while others became skeptical about medical advice altogether.

Interestingly, participants who engaged in telemedicine consultations reported a greater sense of trust in their doctors compared to those who solely relied on information obtained through digital platforms. One patient emphasized, "Speaking directly to my doctor through telemedicine helped me understand my treatment plan better. Unlike generic online information, I knew I was getting advice tailored to my specific case." This highlights the need for structured guidance in digital health usage to prevent misinformation and reinforce the doctor-patient relationship.

Digital Health as a Tool for Self-Empowerment and Social Support

Beyond clinical applications, digital health technologies served as a medium for emotional support and social connectedness. Several participants engaged in online cancer support communities, where they found solace in sharing their experiences with others facing similar challenges. "I didn't feel so alone anymore. Talking to people who truly understand what I'm going through made a big difference," one participant revealed.

However, the level of engagement with digital health tools varied significantly among patients. Some expressed frustration with complex user interfaces, reporting difficulty in interpreting their own health data. One participant explained, "I try to use the app, but I don't always understand what the numbers mean. It makes me feel more stressed rather than reassured." Hospitals that provided digital health education were observed to have more confident users, suggesting that proper guidance enhances the effectiveness of these technologies in improving patient outcomes.

The findings illustrate the nuanced role of digital health technologies in cancer treatment, revealing both their potential to enhance psychological well-being and the challenges they pose in terms of information overload and trust dynamics. While many patients reported feeling empowered by real-time health data and digital support networks, others experienced increased stress due to misinformation and technical barriers. These insights emphasize the importance of integrating medical guidance with digital health tools to maximize their benefits in cancer care.

DISCUSSION

The findings of this study reveal that cancer patients experience both empowerment and distress when engaging with digital health technologies (Polat, 2021). Patients reported that these tools provided them with a sense of control over their condition while simultaneously presenting challenges related to information overload and trust in medical advice. These findings align with the research questions posed in the introduction, demonstrating the complex interplay between digital health engagement and emotional resilience.

By addressing the subjective dimensions of digital health engagement, this study contributes to an expanded understanding of how cancer patients navigate their illness within an increasingly digitalized healthcare landscape (Schofield dkk., 2019). Unlike prior research that predominantly emphasizes clinical efficacy, these findings highlight the personal meaning-making processes that shape patient experiences. The results indicate that while digital health tools can enhance self-efficacy, their effectiveness is contingent upon patients' ability to discern and interpret health information in a way that aligns with their emotional and psychological needs.

Implications of the Findings

The findings of this study suggest that digital health technologies offer both opportunities and challenges for cancer patients (Velardo dkk., 2017). The ability to access real-time health data enhances patients' sense of control and engagement with their treatment, reinforcing self-efficacy and emotional resilience. However, the study also highlights concerns related to information overload and discrepancies in medical advice obtained from digital platforms, which can lead to confusion and anxiety (Theis dkk., 2019). These insights are crucial for healthcare providers and policymakers in optimizing the design and implementation of digital health tools to better support cancer patients' psychological and emotional well-being.

Study Limitations

Despite its contributions, this study has certain limitations. The sample size, while sufficient for qualitative research, may not fully capture the diversity of patient experiences across different cultural and socio-economic backgrounds (Woods dkk., 2022). Additionally, the study focused on patients who actively used digital health technologies, potentially excluding perspectives from those who lack access or technological literacy. These factors limit the generalizability of the findings, underscoring the need for further research in diverse healthcare settings.

Prospective Statement for Future Research

Future studies should explore how digital health interventions can be tailored to accommodate the varying needs of cancer patients, particularly those with limited digital literacy. Investigating the role of healthcare professionals in guiding patients' use of digital tools could further inform best practices in patient-centered digital health strategies. Additionally, longitudinal research examining how patients' engagement with digital health evolves over time would provide deeper insights into its long-term psychological and behavioral impacts.

CONCLUSION

This study explored the lived experiences of cancer patients using digital health technologies, emphasizing their psychological and emotional dimensions. The findings revealed that while these tools enhance self-efficacy and provide a sense of control, they also introduce challenges such as information overload and discrepancies in medical advice. By applying a phenomenological approach, this research highlights the complex interplay between digital health engagement and emotional resilience, offering insights beyond traditional outcome-based analyses. These findings contribute to the ongoing discourse on patient-centered digital health interventions, reinforcing the necessity of integrating psychological and humanistic perspectives into technological design. Despite its limitations, this study provides a foundation for further exploration into how digital tools can be tailored to better support patients' individual needs. Future research should expand on these findings by incorporating diverse patient populations and longitudinal analyses to assess the long-term impact of digital health technologies on patient well-being.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

REFERENCES

Aboye, G. T., Simegn, G. L., & Aerts, J.-M. (2024). Assessment of the Barriers and Enablers of the Use of mHealth Systems in Sub-Saharan Africa According to the Perceptions of Patients, Physicians, and Health Care Executives in Ethiopia: Qualitative Study. *Journal of Medical Internet Research*, *26*(1). Scopus. https://doi.org/10.2196/50337

Bhatt, S., Evans, J., & Gupta, S. (2018). Barriers to scale of digital health systems for cancer care and control in last-mile settings. *Journal of Global Oncology*, *2018*(4), 1–3. Scopus. https://doi.org/10.1200/JGO.2016.007179

Canfell, O. J., Kodiyattu, Z., Eakin, E., Burton-Jones, A., Wong, I., Macaulay, C., & Sullivan, C. (2022). Real-world data for precision public health of noncommunicable diseases: A scoping review. *BMC Public Health*, *22*(1). Scopus. https://doi.org/10.1186/s12889-022-14452-7

Dhyani, V. S., Krishnan, J. B., Mathias, E. G., Hossain, M. M., Price, C., Gudi, N., Pattanshetty, S., & Zodpey, S. (2023). Barriers and facilitators for the adoption of telemedicine services in low-income and middle-income countries: A rapid overview of reviews. *BMJ Innovations*, *9*(4), 215–225. Scopus. https://doi.org/10.1136/bmjinnov-2022-001062

Ghazal, H., Alshammari, A., Taweel, A., Elbokl, A., Nejjari, C., Alhuwail, D., Al-Thani, D., Al-Jafar, E., Wahba, H., Alrishidi, M., Hamdi, M., Househ, M., El-Hassan, O., Alnafrani, S., Kalhori, S. R. N., Emara, T., Alam, T., El Otmani Dehbi, Z., & Al-Shorbaji, N. (2022). Middle East and North African Health Informatics Association (MENAHIA). *Yearbook of Medical Informatics*, *31*(1), 354–364. Scopus. https://doi.org/10.1055/s-0042-1742495

Hambleton, S. (2018). A glimpse of 21st century care. *Australian journal of general practice*, *47*(10), 670–673. Scopus. https://doi.org/10.31128/AJGP-06-18-4596

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Hermansen, Å., Andersen, M. H., Borge, C. R., Dahl, K. G., Larsen, M. H., Lønning, K., Meyer, K. B., Vidnes, T. K., & Wahl, A. K. (2023). Preliminary validity testing of the eHealth Literacy Questionnaire (eHLQ): A Confirmatory Factor Analysis (CFA) in Norwegian hospitalized patients. *BMC Psychology*, *11*(1). Scopus. https://doi.org/10.1186/s40359-023-01449-z

Jarva, E., Oikarinen, A., Andersson, J., Tuomikoski, A.-M., Kääriäinen, M., Meriläinen, M., & Mikkonen, K. (2022). Healthcare professionals' perceptions of digital health competence: A qualitative descriptive study. *Nursing Open*, *9*(2), 1379–1393. Scopus. https://doi.org/10.1002/nop2.1184

Malakhov, K. S. (2023). Insight into the Digital Health System of Ukraine (eHealth): Trends, Definitions, Standards, and Legislative Revisions. *International Journal of Telerehabilitation*, *15*(2). Scopus. https://doi.org/10.5195/ijt.2023.6599

Mohamed, W., Kutty, S. K., Khedher, A., & Chatterjee, I. (2022). Development of a cognitive-based smartphone application for Malaysian Parkinson's disease patients: Exploring the possibility? *Neuroscience Research Notes*, *5*(1). Scopus. https://doi.org/10.31117/neuroscirn.v5i1.126

Perla, L., & Massaro, S. (2022). *Virtual Patient Education Scenarios: Exploratory Step in the Study of Obesity Prevention Through Telemedicine: Vol. 1542 CCIS* (Casalino G., Cimitile M., Ducange P., Padilla Zea N., Pecori R., Picerno P., & Raviolo P., Ed.; hlm. 264–277). Springer Science and Business Media Deutschland GmbH; Scopus. https://doi.org/10.1007/978-3-030-96060-5_19

Polat, E. O. (2021). Seamlessly Integrable Optoelectronics for Clinical Grade Wearables. *Advanced Materials Technologies*, *6*(3). Scopus. https://doi.org/10.1002/admt.202000853

Schofield, P., Shaw, T., & Pascoe, M. (2019). Toward comprehensive patient-centric care by integrating digital health technology with direct clinical contact in Australia. *Journal of Medical Internet Research*, *21*(6). Scopus. https://doi.org/10.2196/12382

Shah, S. A., Velardo, C., Farmer, A., & Tarassenko, L. (2017). Exacerbations in chronic obstructive pulmonary disease: Identification and prediction using a digital health system. *Journal of Medical Internet Research*, *19*(3). Scopus. https://doi.org/10.2196/jmir.7207

Theis, S., Schäfer, D., Bröhl, C., Schäfer, K., Rasche, P., Wille, M., Brandl, C., Jochems, N., Nitsch, V., & Mertens, A. (2019). Predicting technology usage by health information need of older adults: Implications for eHealth technology. *Work*, *62*(3), 443–457. Scopus. https://doi.org/10.3233/WOR-192878

Velardo, C., Shah, S. A., Gibson, O., Clifford, G., Heneghan, C., Rutter, H., Farmer, A., & Tarassenko, L. (2017). Digital health system for personalised COPD long-term management. *BMC Medical Informatics and Decision Making*, *17*(1). Scopus. https://doi.org/10.1186/s12911-017-0414-8

Woods, L., Eden, R., Duncan, R., Kodiyattu, Z., Macklin, S., & Sullivan, C. (2022). Which one? A suggested approach for evaluating digital health maturity models. *Frontiers in Digital Health*, *4*. Scopus. https://doi.org/10.3389/fdgth.2022.1045685