

Submit 22.01.2026

Revision 14.03.2026

Accept 27.03.2026

Publish 01.03.2026

 Open Access

Original Article

Digital Health Services Use Experience in A Geriatric Individual: A Case Study

Nurgül Gün¹, Derya Tülüce^{2*}

¹ Lecturer, Vocational School of Higher Education, Hasan Kalyoncu University, Gaziantep, Turkey.

²Assoc. Prof., Department of Nursing, Faculty of Health Sciences, Osmaniye Korkut Ata University, Osmaniye, Turkey.

Abstract

Digital health applications play a critical role in improving clinical outcomes and reducing hospitalization rates in geriatric individuals through remote monitoring and management of chronic diseases. These technologies facilitate access to healthcare services for older individuals, enabling them to actively participate in their self-care processes and thus improving their quality of life. The use of digital health tools supports the healthy aging process by strengthening early diagnosis and intervention mechanisms through monitoring cognitive and physical functions. This case study examines the experiences and difficulties encountered by a 66-year-old female patient with diagnoses of Type 2 diabetes, hypertension, and asthma in using digital health services. It was determined that although the patient had a smartphone, she used the device only for communication purposes and had difficulty accessing digital health applications. Interviews revealed that the patient experienced confusion while using digital health systems, was hesitant to make mistakes, and mostly received help from family members. In addition, it was observed that vision and hearing problems negatively affected her use of mobile devices and participation in online consultations. It was stated that the patient's perception of trust in digital health services was low, that they found face-to-face consultations more reliable, and that the lack of physical examination was considered a disadvantage. Exposure to news reports about the prevalence of fraud in digital environments and concerns about data security increased the perception of distrust. In conclusion, to ensure the effective use of digital health services in geriatric individuals, it is necessary to increase digital health literacy, provide user-friendly designs, and adopt trust-building approaches.

Keywords: *Digital health services, Geriatrics, Nursing, Aging*

Citation: Gün N. &Tülüce D. (2026). Digital Health Services Use Experience in A Geriatric Individual: A Case Study. Journal of Digital Health and Technology, (1), 1-.

 This work is licensed under Creative Commons Attribution-NonCommercial 4.0 International License.

Corresponding Author: Derya Tülüce  deryatuluce@osmaniye.edu.tr

1. Introduction

Digital health services are a broad concept referring to the use of information technology and telecommunications to support healthcare services remotely. These services include a wide variety of technology-based solutions such as mobile applications, electronic health record systems, telehealth/telemedicine applications, and remote monitoring systems (Brubaker, 2008; Rosenlund et al., 2023). Digital health has become more frequently used in the delivery of healthcare services, especially after the COVID-19 pandemic (Khanassov et al., 2024). Geriatric individuals with chronic diseases requiring regular and frequent monitoring, and those who experience difficulties accessing healthcare services due to physical limitations such as geographical distance or working conditions, are among the groups that can benefit most from digital health applications (Carrillo de Albornoz et al., 2022; Heinzelmann et al., 2005; Ryan et al., 2003). Furthermore, according to studies in the literature, digital health applications have been found to positively affect the quality of life, functional status, and clinical outcomes of elderly individuals (Carrillo de Albornoz et al., 2022; Heinzelmann et al., 2005).

On the other hand, perceptual, motor, and cognitive reserves decrease with advancing age, and this decrease causes geriatric individuals to experience some difficulties regarding the use of digital health applications (Aliberti et al., 2022). Technology-based problems are related to access to internet connection, effective use of devices, and audio-visual quality. In addition, since telephone conversations are limited to verbal communication, healthcare professionals cannot have sufficient insight into the patient's body language, facial expressions, movements, and environmental conditions. Moreover, the effectiveness of digital health applications may be limited in geriatric individuals who have difficulty verbally expressing their health status, have low literacy levels, or have existing health problems such as impaired vision, hearing, and cognitive function (Carrillo de Albornoz et al., 2022).

The effective use of digital health services requires more than just technological infrastructure; it also requires the individual's ability and willingness to use these technologies. In this context, presenting clinical observations on the telehealth usage process of geriatric individuals can guide healthcare professionals (Khanassov et al., 2024). This case report examines the experiences and challenges faced by a geriatric individual with multiple chronic illnesses in using digital health services.

2. Case Presentation

The patient is a 66-year-old woman, married, a primary school graduate, and a housewife. She lives with her husband and married son, and has a large family. She has been diagnosed with Type 2 diabetes for approximately 18 years, hypertension for 15 years, and asthma for 10 years. Her obstetric history reveals eight vaginal births. She entered menopause at age 45. She regularly attends medical checkups. She has no allergies to any medications or foods. She does not smoke or drink alcohol. She is able to perform daily living activities without assistance. She stated that she underwent knee surgery 9 years ago due to a fall, had a platinum plate inserted, and sometimes has difficulty walking. The patient is being followed up at the Internal Medicine Outpatient Clinic of Gaziantep City Hospital.

Her regularly used medications are: Panto 40 mg tb 1*1, Snnox-Met 2.5 mg/1000 mg tb 2*1, Co-irda 150 mg/12.5 mg tb 1*1, Betanorm MR 60 mg tb 1*1, Ator 40 mg tb 1*1, Deloday 5 mg tb 1*1.

Table 1. Vital Signs

Temperature	Pulse	Blood Pressure	Respiratory rate/ Spo2
36.4	86	150/80	18/ 93%

Table 2. Laboratory Findings

Parameter	Patient Value	Normal Range
Glucose	278 mg/dL	70–110 mg/dL
HbA1c	11.5 %	<5.7 %
AST	36 U/L	8–40 U/L
ALT	32 U/L	7–56 U/L
HDL	42 mg/dL	≥40 mg/dL (Male) / ≥50 mg/dL (Female)
LDL	133 mg/dL	<100 mg/dL
Triglycerides	283 mg/dL	<150 mg/dL
TSH	2.3 µIU/mL	0.4–4.0 µIU/mL
Hb	13.5 g/dL	12–16 g/dL (Female)
Platelets (PLT)	200 x10 ³ /µL	150–400 x10 ³ /µL
Egfr	106 ml/dak.	>90 mL/dk

The patient was informed that, as part of telehealth services, they could schedule follow-up appointments digitally, view appointment dates and make changes if necessary, track the validity periods of medication reports, and access laboratory results online. However, during the interviews, it was observed that the patient experienced various difficulties in using this system. The patient stated that they owned a smartphone but only used it for basic communication. They said they had difficulty initiating telehealth consultations and often received help from family members, such as their son or grandson. The patient expressed that technological applications caused confusion for them and that they were hesitant to make mistakes. Due to these factors, they were reluctant to participate in telehealth consultations. Furthermore, the individual stated that they experienced vision problems, had difficulty reading small print, and that this negatively affected their mobile device use. They also stated that their hearing level was limited, and that they sometimes did not hear incoming calls, which they resolved by putting online consultations on speakerphone. The patient stated that their trust in telehealth services was limited, that they considered face-to-face consultations more reliable, and that they believed a health assessment would be incomplete without a physical examination. This situation may be related to the patient frequently hearing news about fraud in digital environments. Furthermore, the request for personal information, especially sensitive data such as Turkish Republic identity numbers, in telehealth applications created concerns about data security and privacy in the patient, contributing to a decrease in trust in digital health services. Therefore, the patient stated that they preferred face-to-face health services whenever possible.

3. Discussion

This case presentation reveals the experience of a geriatric individual regarding the process of using digital health services. Digital health services have rapidly expanded in scope and application within

health systems in recent years, becoming an important tool for monitoring chronic diseases, tracking medical treatment, and facilitating easy access to healthcare (World Bank, 2023). However, the geriatric group faces certain obstacles in this technological transformation (Aliberti et al., 2022; Kendzerska et al., 2021). When the underlying causes of these obstacles are investigated, it is found that elderly individuals have lower digital literacy in technology use. This significantly affects the frequency of access to and use of digital health applications (Foster & Sethares, 2014). In the present case, although the patient stated that they could use a smartphone, they used it only to a limited extent for basic communication purposes. The difficulties encountered in digital health applications (uncertainty in smart device use, difficulty reading small print, hearing problems, and fear of making mistakes) limit the effective use of digital health services. These findings indicate a close relationship between digital usage skills and motivation to use healthcare services in older individuals.

According to a study in the literature, the most significant obstacle to the use of digital health applications by older individuals is the complex nature of the technology, which significantly limits their willingness to use it (Kruse et al., 2020). In this case, the patient stated that they experienced confusion while using telehealth systems and were hesitant to make mistakes. This indicates a lack of ability to understand and use health information and applications.

The perception of trust in digital health services among older individuals is one of the important psychosocial factors determining their usage decisions (Lustig, 2012). In the present case, the patient associates telehealth applications with the perception that physical examinations will be incomplete. In addition, frequently hearing news about fraud carried out in the digital environment affected their perception of trust. In this context, obstacles such as fraud and inadequate examination processes must also be overcome in order to improve access to and outcomes of digital health services. The low perception of trust in telehealth services is also highlighted in the literature, in parallel with the factors contributing to this perception (Gajawala & Pelkowski, 2021). The low perception of trust in telehealth services is also emphasized in the literature as being related to the lack of physical examination and concerns about security/fraud in digital environments.

Visual and auditory impairments in elderly individuals can significantly hinder interaction with digital platforms (Khanassov et al., 2024). In this case, the patient emphasized difficulty reading small print and pronounced visual problems while using mobile devices. Furthermore, limited hearing led to the use of speakers during telehealth consultations. Such sensory limitations directly impact the accessibility principles of digital health applications. Research shows that elderly users are sensitive to the optimization of accessibility features such as language, visual design, and audio support when using digital platforms (Khanassov et al., 2024). Accordingly, designing digital health applications to suit the characteristics of different age groups can reduce usage difficulties.

In this case, the patient stated that they often received help from their son or grandson during telehealth processes. Social support is a decisive factor in the adoption of digital health services by elderly individuals. Technical assistance provided by family members or caregivers can facilitate participation in technological applications. However, this support may not improve the individual's independent use skills (Van Acker, Maenhout, & Compennolle, 2023). While digital health use is higher in cases where family support is strong, strengthening the individual's self-perception of competence is also necessary. Education-focused interventions can reduce dependence on social support by increasing the technical skills of older individuals.

In this case, the patient has been followed for 18 years with a diagnosis of Type 2 diabetes, 15 years with hypertension, and 10 years with asthma. Long-term management of chronic diseases requires continuous monitoring and ensuring treatment adherence. Studies in the literature have determined that digital health applications have positive effects on self-management skills and self-care behavior in chronic diseases (Kebede & Pischke, 2019; Lee et al., 2021; Kruse, Mileski, & Moreno, 2017). However, in this case, the HbA1c value was determined to be 11.5%, which is higher than the normal value; this indicates that the patient is experiencing difficulty in controlling diabetes management. Even though management processes such as nutrition, physical activity, and medication adherence can be monitored more effectively with digital health applications, these potential benefits are limited because the patient has difficulty fully utilizing digital applications.

4. Conclusion

In this case, the geriatric individual's perception of the complexity of digital health applications, concerns about data security and privacy, and limited digital literacy level were identified as the main factors negatively affecting the usage process. Furthermore, while social support provided by family members facilitates access to and initial use of digital health applications, it does not always adequately develop the individual's independent usage skills. This situation can be limiting in terms of sustainable technology use and trust perception in the long term.

In conclusion, technological solutions alone are insufficient to achieve effective and sustainable digital health services for geriatric individuals. The development of user-friendly designs for geriatric users and the adoption of transparent approaches to data security and privacy are necessary. Additionally, healthcare professionals should assess the educational needs of geriatric individuals and plan interventions that increase digital health literacy according to their individual capacities. The scope of educational materials should include: Visual content should be rich, simple and accessible, and should be strengthened with follow-up mechanisms to see its effects in the long term.

Ethical Statement

Informed written consent was obtained from the patient for the use and publication of the data included in this case report.

Acknowledgment

We thank the participants for their involvement in this research. This research was not funded by any grants.

Conflict of Interest

The authors declare no conflicts of interest.

References

- Aliberti, G. M., Bhatia, R., Desrochers, L. B., Gilliam, E. A., & Schonberg, M. A. (2022). Perspectives of primary care clinicians in Massachusetts on use of telemedicine with adults aged 65 and older during the COVID-19 pandemic. *Preventive medicine reports*, 26, 101729.
- Brubaker, J. K. (2008). The birth of a new specialty: geriatrics. *The Journal*.
- Carrillo de Albornoz, S., Sia, K. L., & Harris, A. (2022). The effectiveness of teleconsultations in primary care: systematic review. *Family practice*, 39(1), 168-182.

- Foster, M. V., & Sethares, K. A. (2014). Facilitators and barriers to the adoption of telehealth in older adults: an integrative review. *CIN: Computers, Informatics, Nursing*, 32(11), 523-533.
- Gajarawala, S. N., & Pelkowski, J. N. (2021). Telehealth benefits and barriers. *The Journal for Nurse Practitioners*, 17(2), 218-221.
- Heinzelmann, P. J., Williams, C. M., Lugn, N. E., & Kvedar, J. C. (2005). Clinical outcomes associated with telemedicine/telehealth. *Telemedicine and e-Health*, 11(3), 329-347
- Kebede, M. M., & Pischke, C. R. (2019). Popular diabetes apps and the impact of diabetes app use on self-care behaviour: a survey among the digital community of persons with diabetes on social media. *Frontiers in endocrinology*, 10, 135.
- Kendzerska, T., Zhu, D. T., Gershon, A. S., Edwards, J. D., Peixoto, C., Robillard, R., & Kendall, C. E. (2021). The effects of the health system response to the COVID-19 pandemic on chronic disease management: a narrative review. *Risk management and healthcare policy*, 575-584.
- Khanassov, V., Ilali, M., Ruiz, A. S., Rojas-Rozo, L., & Sourial, R. (2024). Telemedicine in primary care of older adults: a qualitative study. *BMC primary care*, 25(1), 259.
- Kruse CS, Mileski M, Moreno J. Mobile health solutions for the aging population: A systematic narrative analysis. *J Telemed Telecare*. 2017 May;23(4):439-451. doi: 10.1177/1357633X16649790. Epub 2016 Jun 1. PMID: 27255207.
- Lee, J. A., Evangelista, L. S., Moore, A. A., Juth, V., Guo, Y., Gago-Masague, S., ... & Bickmore, T. (2021). mHealth interventions to promote anti-diabetic medication adherence: A systematic review. *JMIR mHealth and uHealth*, 9(2), e22941.
- Lustig, T. A. (2012). The role of telehealth in an evolving health care environment: workshop summary. National Academies Press.
- Rosenlund, M., Kinnunen, U. M., & Saranto, K. (2023). The use of digital health services among patients and citizens living at home: scoping review. *Journal of Medical Internet Research*, 25, e44711.
- Ryan, P., Kobb, R., & Hilsen, P. (2003). Making the right connection: matching patients to technology. *Telemedicine and e-Health*, 9(1), 81-88.
- Van Acker, J., Maenhout, L., & Compennolle, S. (2023). Older adults' user engagement with mobile health: a systematic review of qualitative and mixed-methods studies. *Innovation in Aging*, 7(2), igad007.
- World Bank. (2023). Digital-in-Health: Unlocking the value for everyone. Washington, DC: World Bank. CC BY 4.0. Erişim adresi: <https://openknowledge.worldbank.org/handle/10986/40212>