JBACHS
Journal of Basic and Clinical Health Sciences

J Basic Clin Health Sci 2026; 10: 374-379
https://doi.org/10.30621/jbachs.1924079
RESEARCH ARTICLE

EVALUATION OF OLDER ADULTS' ACCESS TO HEALTHCARE SERVICES: IS THERE A DIGITAL DIVIDE?

Demet Yalcin Kehribar[1], Ahmet Faruk Kosar[2], Lale Saka Baraz[3], Enis Akca[4*], Onur Bodur[5], Salim Can Aydogdu[6], Metin Ozgen[7]

[1] Dokuz Eylül University, Faculty of Medicine, Department of Internal Medicine, İzmir, Türkiye
[2] Samsun University, Department of Sociology, Samsun, Türkiye
[3] Manisa City Hospital, Internal Medicine, Manisa, Türkiye
[4] Samsun University, Department of Internal Medicine, Samsun, Türkiye
[5] Yaglidere State Hospital, Giresun, Türkiye
[6] Derecik State Hospital, Hakkari, Türkiye
[7] Izmir Ekonomi University, Medical Point Hospital, Department of Rheumatology, İzmir, Türkiye

ORCID: D.Y.K. 0000-0002-1852-7981; A.F.K. 0000-0002-5052-0739; L.S.B. 0000-0003-4387-6929; E.A. 0009-0001-1969-6912; O.B. 0009-0008-7504-9008; S.C.A. 0000-0003-0216-4239, M.O. 0000-0002-6842-2918

Corresponding author: Enis Akca, **E-mail:** enisakca@hotmail.com
Received: 06.04.2026; **Accepted:** 01.07.2026; **Available Online Date:** 30.09.2026
©Copyright 2021 by Dokuz Eylül University, Institute of Health Sciences - Available online at https://dergipark.org.tr/en/pub/jbachs

Cite this article as: Yalcin Kehribar D, Kosar AF, Saka Baraz L, Akca E, Bodur O, Aydogdu SC, Ozgen M. Evaluation of Older Adults' Access to Healthcare Services: Is There a Digital Divide? J Basic Clin Health Sci 2026; 10: 374-379.

ABSTRACT

Purpose: This study investigates the impact of digital transformation on healthcare accessibility among older adults in Turkey, with a focus on the digital divide.
Methods: A cross-sectional study was conducted with 191 participants, categorized into two groups: older adults aged 65 and above, and younger adults aged 18 to 64. Data were collected through structured questionnaires addressing socioeconomic factors, technological usage, healthcare access, and dependency on caregivers for managing online appointment systems.
Results: The key findings indicated that older adult participants reported lower income levels, limited smartphone and computer usage, and higher dependency on family members for scheduling appointments compared to younger participants. After adjustment for education, income, residence, and chronic disease burden, age ≥65 years remained independently associated with appointment dependency. Additionally, older adults with chronic conditions face compounded challenges in accessing healthcare services due to their increased dependency on caregivers.
Conclusions: To address these challenges, recommendations include implementing digital literacy programs tailored to older adult populations, designing simplified user interfaces for online systems, and adopting hybrid models that integrate traditional and digital healthcare access methods. Policymakers are urged to prioritize digital inclusion initiatives to ensure equitable healthcare access across all age groups.

Keywords: Geriatric health care, access to health services, online systems, digital divide

INTRODUCTION

Although Turkey is considered a country with a relatively young population compared to European nations, it should be noted that the demographic structure of Turkish society is rapidly transforming into that of an aging population (1). However, this transformation is not limited to demographic changes. Over the past two decades, Turkey has undergone a

technological transformation that has permeated every aspect of daily life. Today, information and communication technologies have become integral to the economic, cultural, and social domains, emphasizing their significance while introducing a new type of inequality. These disparities, referred to as digital inequalities, have the potential to affect all aspects of individuals' social processes (2,3).

The adoption of computer and internet systems in global and local institutions through various bureaucratic applications has made it essential to develop competencies in this area. Acquiring, adapting to, and effectively using technological tools can help reduce digital inequalities. However, inequalities in access to technology and the internet, lack of proficiency in their use, and the resulting challenges can vary based on gender, class, age, and region (4–6).

In recent years, the diversification of technological applications in the healthcare sector has enabled individuals from all generations to access educational, preventive, and protective information through these tools (7,8). Moreover, gaining competencies in the effective and timely use of technological tools for health-related purposes has become increasingly critical. Hospitals, as primary providers of traditional health services, play a pivotal role in this context. Hospitals are environments in which technological devices and equipment are frequently used, ranging from personal and medical care to preservice appointment scheduling (9).

Reading electronic health records, tracking appointments, and engaging with digital healthcare processes have gained importance for all generations in our society. The literature indicates that while internet usage among older adults is lower than that of younger generations, recent studies suggest a rise in the frequency of internet use among older adults compared to the past (10,11). The increasing integration of these technologies into various aspects of daily life has made it essential for older adults to adapt to, learn from, and use information and communication technologies in their social lives.

This study aimed to compare older adults' access to medical consultations with that of younger individuals.

MATERIALS AND METHODS

Study design and ethical considerations

This cross-sectional study was conducted to evaluate the impact of online appointment systems on the healthcare accessibility of older adults and to compare their experiences with those of younger populations. Data were collected from individuals aged 18 and older, with a focus on identifying barriers to accessing healthcare services, levels of technological engagement, and dependence on others for online appointment management. The study was approved by Clinical Research Ethics Committee of Ondokuz Mayıs University (Date: 28.03.2024, Number: OMUKAEK 2024/135). Written informed consent was obtained from all participants before data collection. Participants were assured of the confidentiality of their responses.

Participants

The study included 191 participants divided into two age groups: individuals aged 65 years and older (older adult group, n = 93) and individuals aged 18–64 years (younger group, n = 98). Participants were recruited consecutively from the Rheumatology Outpatient Clinic of a tertiary care university hospital in Türkiye using a convenience sampling method. Eligible patients attending routine outpatient visits between January and June 2024 were invited to participate in the study.

Inclusion criteria were age ≥18 years, residence in Türkiye, having used healthcare services within the previous year, and providing written informed consent. Individuals with severe cognitive impairment, communication difficulties, or inability to complete the interview were excluded from the study.

Data collection tools

A structured questionnaire was used to gather the data. The questionnaire consisted of four main sections:

Demographic and socioeconomic information: Age, gender, education level, income level, and urban or rural residency status.

Technological usage: Ownership and use of devices such as smartphones, personal computers, and social media platforms.

Healthcare access and utilization: Frequency of healthcare appointments, prevalence of chronic diseases, and methods used to schedule appointments.

Dependency levels: Reliance on family members or caregivers for managing online appointment systems.

Table 1. Comparison of the results between individuals under 65 and over 65 years of age.

Variables	Under 65 Years Old (n=98)	Over 65 Years Old (n=93)	p
Income			
Minimum Wage Level	40 (%41)	45(%46)	0.047
2 Times the Minimum Wage	42(%43)	41(%45)	
Above 2 Times the Minimum Wage	16(%16)	5(%6)	
Education			
Illiterate	1(%1)	16(%18)	<0.001
Primary School	44(%45)	60(%68)	
Middle School	10(%10)	4(%4)	
High School	26(%27)	7(%8)	
University	17(%17)	6(%7)	
Residence (Village/City)	79/19	59/34	0.006
Smartphone Ownership (No/Yes)	14/84	45/48	<0.001
Home Computer Usage (No/Yes)	52/46	83/10	<0.001
Social Media Usage (No/Yes)	38/59	81/12	<0.001
Number of Hospital Visits in the Last Year			
1-3	30 (%31)	17(%19)	0.004
4-7	28(%29)	15(%16)	
>8	40(%41)	59(%65)	
Chronic Disease Presence (No/Yes)	47/51	10/83	<0.001
Appointment Management (Self/Relative)	63/35	11/82	<0.001

The questionnaire was designed based on previous studies on digital health disparities and was pretested on a pilot group of 30 participants to ensure clarity and reliability.

Data collection procedure

Data were collected between January and June 2024 through face-to-face interviews conducted by trained research assistants. Participants completed the questionnaires during their clinic visits. For older adults with limited literacy or technological experience, the research assistants provided additional explanations to ensure accurate data collection.

Statistical analysis

The data were analyzed using SPSS version 26.0. Descriptive statistics, including means, standard deviations, and percentages, were calculated for demographic and technological variables. Comparisons between the two age groups were performed using chi-square tests for categorical variables and independent sample t-tests for continuous variables. Statistical significance was set at $p < 0.05$.

RESULTS

The widespread adoption of online appointment systems in Turkish hospitals has significantly influenced healthcare accessibility among older adults. This study explored how digital transformation affects older adults, particularly regarding technology use and dependence on others for healthcare appointment management.

Table 1 presents the comparison between individuals aged 65 years and older and those younger than 65 years with respect to socioeconomic characteristics, technology use, healthcare utilization, and appointment management.

Socioeconomic characteristics

Older adults reported significantly lower income levels compared with younger participants ($p = 0.047$). Educational attainment was also significantly lower among older adults ($p < 0.001$). A greater proportion of older adults had primary school education or less, whereas university education was more common among younger participants.

Residential status and healthcare utilization

Older adults were more likely to reside in rural areas compared with younger participants ($p = 0.006$). They also reported more frequent healthcare utilization, with a significantly greater proportion having more than eight hospital visits during the previous year ($p = 0.004$). Chronic diseases were substantially more prevalent among older adults than among younger individuals ($p < 0.001$).

Table 2. Multivariable logistic regression analysis of factors associated with independent appointment management.

Variable	Odds Ratio (OR)	95% CI	p value
Age ≥65 years	0.13	0.06–0.30	<0.001
Education level	1.69	1.20–2.37	0.003
Income level	1.70	0.95–3.04	0.075
Chronic disease presence	0.48	0.22–1.05	0.075
Urban residence	0.89	0.37–2.15	0.796
Dependent variable: independent appointment management (self-scheduled appointments).			

Technology use

The use of smartphones, home computers, and social media platforms was significantly lower among older adults compared with younger participants (all $p < 0.001$). These findings demonstrate a marked age-related disparity in engagement with digital technologies.

Appointment management

Older adults were significantly more dependent on relatives for scheduling healthcare appointments than younger participants ($p < 0.001$). Independent appointment management was considerably less common among individuals aged 65 years and older, suggesting substantial barriers in navigating digital healthcare systems.

Multivariable analysis of factors associated with independent appointment management

To determine whether the observed differences could be explained by socioeconomic and health-related factors, a multivariable logistic regression analysis was performed. Independent appointment management was used as the dependent variable, while age group, educational level, income level, residential status, and chronic disease presence were included as covariates.

After adjustment for these potential confounders, age ≥65 years remained independently associated with a lower likelihood of managing healthcare appointments independently (OR = 0.13, 95% CI: 0.06–0.30, $p < 0.001$). Educational level was also independently associated with independent appointment management (OR = 1.69, 95% CI: 1.20–2.37, $p = 0.003$). Income level, residential status, and chronic disease presence were not independently associated with appointment management in the adjusted model (Table 2).

These findings indicate that the greater dependence of older adults on others for appointment scheduling cannot be explained solely by differences in education, income, residential status, or chronic disease burden**.**

DISCUSSION

This study determined that older adults are more inclined to reside in rural areas compared to the younger population, have lower incomes, have less access to personal computers and smartphones, and use social media at a lower rate. Additionally, the study found that older adults are more likely to suffer from chronic illnesses and therefore require healthcare services to a greater extent. Consistent with this finding, it was observed that older adults made more frequent hospital visits within the previous year. Furthermore, the study also revealed that older adults are more dependent on others to access healthcare services. This dependency hinders their ability to effectively use healthcare systems and highlights a significant digital divide between older adults and younger populations (12).

The finding that smartphone, computer, and social media usage is lower among older adults is consistent with previous studies (11,13,14). This disparity in technology use appears to be associated with older adults' reduced ability to interact independently with online systems (15,16).

In their research on the digital skills of older adults, Friemel et al. found that their digital competencies were lower than those of younger populations. Additionally, this study identified age, education, income, and social environment as the most significant determinants of the digital divide among older adults (17). The lower level of digital competence among older adults limits their interaction with online systems and their ability to seek solutions online. This finding was demonstrated in a study conducted by Charness et al. (7). Their research determined that internet usage is lower among older adults, and the rates of searching for online health information are lower among older adults.

This study demonstrated that older adults have a limited ability to access healthcare services independently and are largely dependent on family members to navigate online systems. This dependency is particularly significant among older adults with chronic illnesses, as they require more frequent healthcare services but struggle to use digital tools effectively. Yang, Gao, and Jiang (18) found that a lack of digital access among older adults in the United States reduced their utilization of healthcare services, leading to significant health inequities.

According to the results of our study, education reduces the barrier to healthcare access for older adults but does not completely eliminate it. Friemel et al. (17) stated that education is one of the key determinants of digital inequality. Although older adults with higher education levels have better access to online healthcare services than those with lower education levels, they still lag behind the younger population (19,20).

Importantly, the association between older age and appointment dependency remained significant after adjustment for educational level, income, residential status, and chronic disease burden. This finding suggests that age-related barriers to navigating digital healthcare systems cannot be explained solely by socioeconomic differences and may reflect broader challenges related to digital engagement and healthcare system usability among older adults.

In our study, social media use was associated with more independent management of healthcare appointments among older adults. However, given the cross-sectional design and the limited sample size, social media use should not be interpreted as the most important determinant of healthcare access. Rather, it may represent a marker of greater digital engagement and familiarity with technology. Individuals over the age of 65 who used social media showed no differences in healthcare access compared to those under 65 and were found to independently schedule their hospital visits and appointments. In a study by Kessel et al., digital literacy was identified as more critical than traditional literacy in accessing healthcare services (21). In our study, it was determined that individuals who used social media, a marker of digital engagement, were able to organize their hospital appointments independently.

This study has several limitations. First, the sample size is a major limitation. A larger sample size could have increased the value of the data and ensured more reliable subgroup analyses. Therefore, the generalizability of the findings to a broader older adult population may be limited. Second, data on economic status, technology use, and healthcare access were based on self-reports, which may be subject to social desirability bias. Lastly, as the study has a cross-sectional design, causal relationships between digital literacy and healthcare access cannot be definitively established.

An important limitation of this study is that digital health literacy was not assessed using a validated measurement instrument. Instead, smartphone ownership, computer use, and social media use were evaluated as indicators of digital engagement. Although these variables may reflect familiarity with digital technologies, they do not necessarily measure digital health literacy or the ability to effectively obtain, understand, and use digital health information. Therefore, the findings should be interpreted as reflecting technology use patterns rather than direct assessments of digital health literacy. Future studies should incorporate validated digital health literacy scales to better characterize this relationship.

CONCLUSION

This study highlights the significant challenges that older adults face in accessing healthcare services independently, largely due to the digital divide. While technological advancements have improved healthcare accessibility, the findings suggest that older adults, particularly those who do not use social media, remain dependent on family members for scheduling hospital appointments. However, social media use may be a marker of greater digital engagement and familiarity with technology, allowing them to navigate healthcare systems more independently. These results emphasize the need for targeted digital literacy programs and simplified healthcare platforms tailored to older adults. Bridging the digital divide is crucial to ensuring equitable healthcare access and improving health outcomes for older adults.

Acknowledgments: All authors thank who participated in the study.

Author Contributions: Conceptualization, DYK, AK, LSB, EA, OB, SCA, MO; Methodology, DYK, AK, LSB, EA, OB, SCA, MO; Formal Analysis DYK, AK, LSB, EA, OB, SCA, MO; Investigation DYK, AK, LSB, EA, OB, SCA, MO; Writing – Original Draft Preparation DYK, AK, OB, SCA; Writing – Review & Editing DYK, LSB, EA, MO. All authors commented on previous versions of the manuscript. All authors read and approved of the final manuscript.

Conflict of Interest: The authors declare no conflict of interest.
Ethical approval: The study was approved by Clinical Research Ethics Committee of Ondokuz Mayıs University (Date: 28.03.2024, Number: OMUKAEK 2024/135).
Funding: This research received no funding.
Peer-review: Externally peer-reviewed.

REFERENCES

1. Arun Ö, Çakıroğlu Çevik A. Quality of life in ageing societies: Italy, Portugal, and Turkey. Educ Gerontol. 2011;37(11):945–66.
2. Özcan Alp G, Baycan T. Digital divide reflections on regional development disparities in Türkiye. Inf Technol Dev. 2024;30(4):608–25.
3. Dal Mas F, Massaro M, Rippa P, Secundo G. The challenges of digital transformation in healthcare: An interdisciplinary literature review, framework, and future research agenda. Technovation. 2023;123:102716.
4. Demirkan H, Delen D. Leveraging the capabilities of service-oriented decision support systems: Putting analytics and big data in cloud. Decis Support Syst. 2013;55(1):412–21.
5. Duplaga M. The association between internet use and health-related outcomes in older adults and the elderly: A cross-sectional study. BMC Med Inform Decis Mak. 2021;21(1):150.
6. Frishammar J, Essén A, Bergström F, Ekman T. Digital health platforms for the elderly? Key adoption and usage barriers and ways to address them. Technol Forecast Soc Change. 2023;189:122319.
7. Charness N, Boot WR. Aging and information technology use: Potential and barriers. Curr Dir Psychol Sci. 2009;18(5):253–8.
8. Tsai HS, Shillair R, Cotten SR. Social support and “playing around”: An examination of how older adults acquire digital literacy with tablet computers. J Appl Gerontol. 2017;36(1):29–55.
9. Seifert A, Cotten SR, Xie B. A double burden of exclusion? Digital and social exclusion of older adults in times of COVID-19. J Gerontol Ser B. 2021;76(3):e99–103.
10. Jung SO, Son YH, Choi E. E-health literacy in older adults: An evolutionary concept analysis. BMC Med Inform Decis Mak. 2022;22(1):28.
11. Oh SS, Kim KA, Kim M, Oh J, Chu SH, Choi J. Measurement of digital literacy among older adults: Systematic review. J Med Internet Res. 2021;23(2):e26145.
12. Papí-Gálvez N, La Parra-Casado D. Age-based digital divide: Uses of the internet in people over 54 years old. Media Commun. 2023;11(3):77–87.
13. Smith A. Older adults and technology use. Pew Research Center [Internet]. [cited 2026 Apr 5]. Available from: https://www.pewresearch.org/internet/2014/04/03/older-adults-and-technology-use/
14. Beneito-Montagut R, Rosales A, Fernández-Ardèvol M. Emerging digital inequalities: A comparative study of older adults’ smartphone use. Soc Media Soc. 2022;8(4):20563051221138756.
15. Leukel J, Schehl B, Sugumaran V. Digital inequality among older adults: Explaining differences in the breadth of internet use. Inf Commun Soc. 2023;26(1):139–54.
16. Ibrahim H, Liu X, Zariffa N, Morris AD, Denniston AK. Health data poverty: An assailable barrier to equitable digital health care. Lancet Digit Health. 2021;3(4):e260–5.
17. Friemel TN. The digital divide has grown old: Determinants of a digital divide among seniors. New Media Soc. 2016;18(2):313–31.
18. Yang R, Gao S, Jiang Y. Digital divide as a determinant of health in the U.S. older adults: Prevalence, trends, and risk factors. BMC Geriatr. 2024;24(1):1027.
19. Gleason K, Suen JJ. Going beyond affordability for digital equity: Closing the “digital divide” through outreach and training programs for older adults. J Am Geriatr Soc. 2022;70(1):75–7.
20. Lopez de Coca T, Moreno L, Alacreu M, Sebastian-Morello M. Bridging the generational digital divide in the healthcare environment. J Pers Med. 2022;12(8):1214.
21. Van Kessel R, Wong BLH, Clemens T, Brand H. Digital health literacy as a super determinant of health: More than simply the sum of its parts. Internet Interv. 2022;27:100500.