ORIGINAL RESEARCH

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Internet Use and Digital Technology Needs of Older People Living in Rural Areas-A Sample of Bartın/Türkiye

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Abstract

Objective: Supporting older people emerge as an important problem. Encouraging digital health technologies is seen as one of the effective ways to address this problem. This research aims to examine the current status of internet use by older people, the factors affecting this (including physical, psychological, and social aspects), and the demand of older people for smart services.

Materials and Methods: The type of the study was determined as a descriptive quantitative study with a sample of 85 individuals aged 65 and over living in villages affiliated with the center of Bartın, Türkiye.

Results: While 72.9% of the participants reported that they did not use the internet, 27.1% reported that they used the internet. A significant portion of the participants found the use of smart bracelets and emergency call at home necessary or very necessary. The participants did not find the "telemedicine", "online health", and "online psychosocial counseling" applications necessary. Finally, 83.5% of the participants reported that they find the "older-friendly smartphone" application necessary or very necessary.

Conclusion: It is important to take these suggestions into consideration when making technological plans in old age.

Keywords: Older people, rural area, internet use, digital technology needs

Introduction

According to the data published by Türkiye Statistical Institute (TURKSTAT) in 2021 (1), the population aged 65 and over in Türkiye, which was 6 million 651 thousand 503 in 2016, increased by 24.0% five years later and reached 8 million 245 thousand 124 older people in 2021. Again, according to the same data, the ratio of the older population to the total population was determined as 8.3% in 2016 and 9.7% in 2021. In terms of population projections, the older population ratio is expected to be 11.0% in 2025, 12.9% in 2030, 16.3% in 2040, 22.6% in 2060, and 25.6% in 2080 (1). With the rapid aging of the population, the demand for health and care services for older individuals is undoubtedly increasing. Digital technologies can be seen as a solution to enable older people to continue their lives within their families or independently. Digital technologies can provide benefits increasing the quality of daily life and access to health/care services, as well as facilitating communication and socialization for older individuals. Although older individuals are more unfamiliar with digital technologies than young people may seem like an obstacle, overcoming this obstacle can make significant contributions to their independent lives (2). Health problems that restrict or prevent basic communication, mobility, and personal care activities in older individuals increase with age (2). Despite the increase in the older population, mobile applications are generally designed for young and middle-aged people, and the older population is neglected. However, internet use has become quite widespread in recent years, and the number of users over the age of 60 in digital media has also increased. Studies have begun to focus on developing assistive information and communication technologies that will support independent living for older individuals (3). Internet use among older people is limited. For example, older individuals generally use the internet for

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entertainment (such as music, videos), information access (such as news, health-related information,) and communication with others. Compared to other age groups, it can be said that the older people individuals primarily use the internet for health-related reasons (4). While most older people learn how to use the internet through their children or other young people, some learn on their own (5). The physical and mental conditions of people tend to gradually deteriorate in old age. The socialization process is important for increasing the life satisfaction and quality of older individuals. In this process, the older individual socializes by learning through social interactions they engage in to cope with the physical and mental changes they undergo (6). Rapid changes in technology have increased the need for older individuals to learn from younger family members compared to the past. Older individuals, who are in a new socialization process, are affected by both socialization tools and structural factors when accepting technological innovations in the digital field (6). Previous studies have shown that older individuals with high levels of social support are more willing and inclined to learn about the internet. In this sense, the use of digital technology by older adults can be increased through family support and encouragement (7), and digital technologies contribute to well-being by reducing social isolation in older individuals (8). Using the internet and digital technologies is particularly important for older people who are becoming isolated in rural areas due to the migration of the young population to urban centers. However, previous studies generally include older people living in cities or nursing homes, and the situation of older people living in rural areas is often ignored (9).

This research aims to investigate the current status of internet use among rural older people, their need for digital technologies, and the factors that affect their behavior. The results are important for increasing internet use among older people and creating the necessary infrastructure to meet their health, care, and social needs, improving their quality of life, and ensuring that they benefit from internet and digital services.

Within the scope of the research; the level of internet use among rural older people and how does it diversify, types of the digital technologies that the rural older people use for health and social care areas and the kinds of support and services that the older people need in the field of internet use and digital technology tried to be understood.

Materials and Methods

The type of the research is descriptive quantitative research. The research data were collected with a questionnaire prepared by the researchers to reveal the sociodemographic and internet usage and digital technology needs. The study of Sun et al. (10) was also used in the creation of the questionnaire, which has multiple choice questions. While creating the questionnaire, expert and stakeholder opinions were also consulted, a preliminary study was conducted on a small group and it was revised to determine whether there were any unclear/incomprehensible questions. The researchers obtained consent from the older people for this questionnaire, and the study was approved by the Ethics Committee of Bartın University (protocol number: 2023-SBB-0715, date: 16.11.2023).

The field study was conducted between September and December 2024 with 85 older individuals who agreed to answer the questions. The sample of the research was determined by a single-stage random probability sampling based on the main population rates. According to the last census, there are a total of 137 villages affiliated with the central district of Bartın. Among these villages, those with suitable transportation facilities and population were selected, and the questionnaire was applied face to face on a voluntary basis in villages close to the center. The criteria determined for the older the individuals participating in the research are: being 65 years old and over, having sound mental will, strong verbal skills, and volunteering for the research. The survey was conducted face-to-face with 85 elderly people living in villages close to the center. The researchers who participated in the field research provided information about the digital technologies asked of the participants during the survey, and clarified the unclear questions. In addition, they ensured that the questions were read and answered by those with reading/writing and hearing difficulties.

Statistics

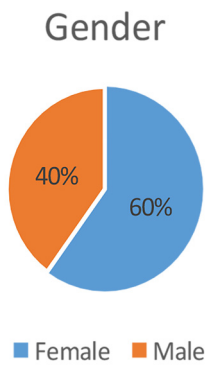
All data that entered the database were verified by the researchers. Continuous variables were given as mean ± standard deviation for normally distributed variables. Data were analyzed using only descriptive analysis. The analysis was carried out with the statistical package SPSS Version 21.0 for Windows.

Results

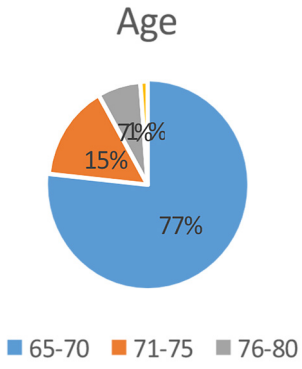
The findings are discussed in two parts: the socio-demographic characteristics of the participants and the participants' internet use and digital technology needs.

Socioeconomic and Demographic Characteristics of Participants

Fifty-one females (60%) and thirty-four males (40%) participated in the study (Graphic 1). The majority of the participants (77%) were between the ages of 65-70, 15% were between 71-75 and 7.1% were between 76-80 (Graphic 2).

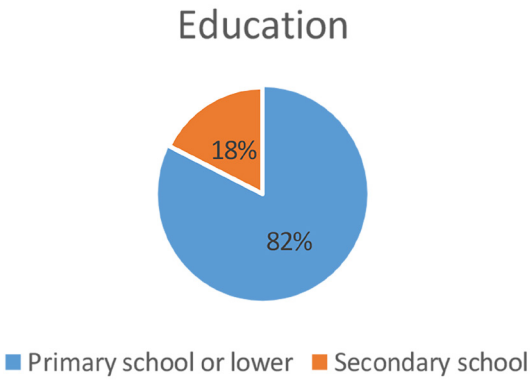


Graphic 1. Gender

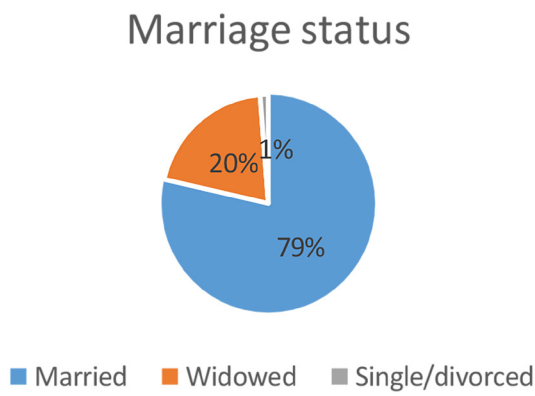


Graphic 2. Age

The majority of the participants in the study had primary school or lower education (82%). The rest had secondary school education (18%) (Graphic 3). While a large number of married participants participated in the study (79%), 20.0% of the participants were widowed. There was one and one divorced participant (1%) (Graphic 4).

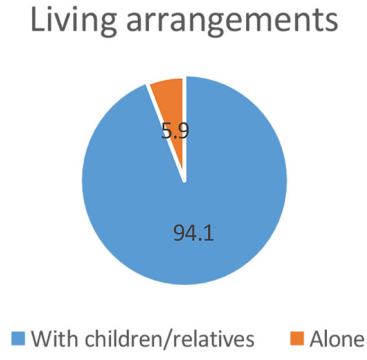


Graphic 3. Education

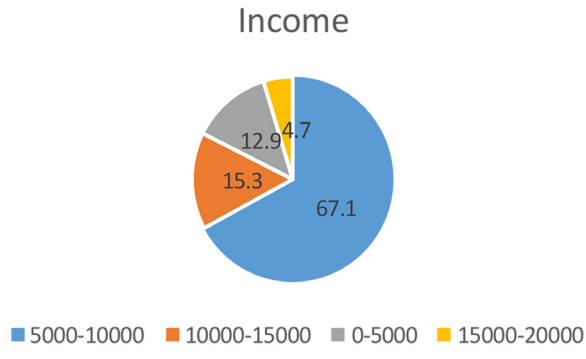


Graphic 4. Marriage status

Almost all of the participants (94.1%) live with their children or relatives. The rate of those living alone is 5.9% (Graphic 5). The income of the majority of the participants in the study (67.1%) was between 5,000 to 10,000 TL; the others were between 10,000 to 15,000 TL (15.3%); 0 to 5,000 TL (12.9%); and 15,000 TL and above 20,000 TL (4.7%), respectively (Graphic 6).

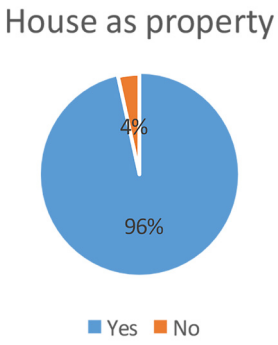


Graphic 5. Living arrangements

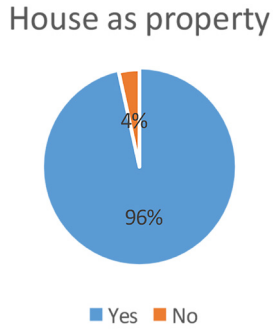


Graphic 6. Income

Almost all of the participants (96%) live in their own home (Graphic 7). While 81% of the participants stated that they did not have any chronic diseases, 19% reported that they had a chronic disease (Graphic 8). Forty percent of the participants have 3 children, 30.6% have 2 children, 14.1% have 4 children and 2.4% have 1 child. 49.4% of the participants had 1-2 friends, 32.9% had 3-5 friends, 15.3% had more than five friends, and 2.4% reported that they had no friends. Most of the participants (97.6%) answered "I never participate" in social activities, while a small portion (2.4%) answered "I sometimes participate".



Graphic 7. House as property

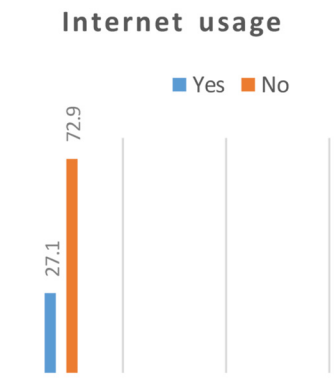


Graphic 8. Chronic diseases

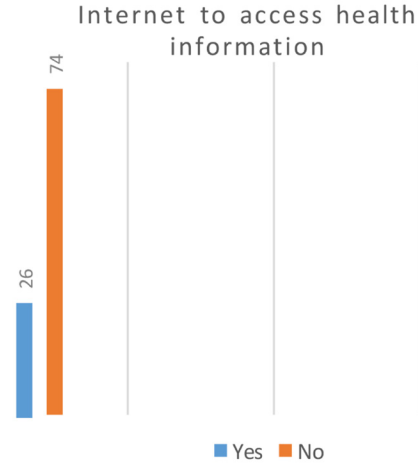
The Participants' Internet Use and Digital Technology Needs

While 72.9% of the participants reported that they did not use the internet, 27.1% reported that they used the internet (Graphic 9). Approximately half of the internet users (43.4%) use the internet less than three days a week and mostly use the internet for online chatting (78.2%) and following the news (73.9%). Some of the participants also use the internet to listen to music and watch videos (39.1%).

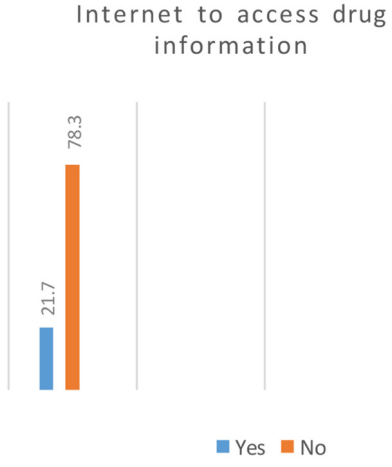
None of the participants uses the internet for gaming, online shopping or health information. Also, none of the participants used the internet for food safety, sports/fitness applications, or diet information. Only 26% of the participants who use the internet reported that they accessed health information via the internet (Graphic 10). A small portion of the participants (21.7%) use the internet to access drug information (Graphic 11).



Graphic 9. Internet usage



Graphic 10. Internet to access health information



Graphic 11. Internet to access drug information

As seen in Table 1, more than half of the participants (64.7%) find the use of "smart bracelets" necessary or very necessary. A significant portion of the participants (76.4%) find the "emergency call" at home necessary or very necessary. The participants mostly do not find the telemedicine application and online health application necessary. While 83.5% of the participants find the online appointment registration system

Table 1. Need for digital technologies (summary table)

	Very necessary n (%)		Necessary n (%)		Undecided n (%)		Not so necessary n (%)		Certainly not necessary n (%)	
Smart bracelet	14	16.5	41	48.2	6	7.1	12	14.1	12	14.1
Emergency call at home	16	18.8	49	57.6	5	5.9	7	8.2	8	9.4
Telemedicine	7	8.2	11	12.9	16	18.8	23	27.1	23	32.9
Online health application	15	3.5	8	9.4	12	14.1	25	29.4	37	43.5
Online appointment registration system	37	43.5	34	40	3	3.5	5	5.9	6	7.1
Online health payment application	5	5.9	6	7.1	3	3.5	19	22.4	52	61.2
Online psychosocial counseling application	5	5.9	10	11.8	5	5.9	23	27.1	42	49.4
Older-friendly smartphone	45	52.9	26	30.6	3	3.5	3	3.5	8	9.4

necessary, 83.6% do not find the online health payment application necessary. The participants generally do not find the online psychosocial counseling application necessary (76.5%). Finally, 83.5% of the participants reported that they find the "older-friendly smartphone" application necessary or very necessary (Table 1).

Discussion

The socio-demographic characteristics of the participants show that the majority of the older individuals included in the study are between the ages of 65-70 and married. Although the gender ratios of the participants are close to each other, the proportion of women is higher than that of men. It is a striking result that almost all of the participants are married and their spouses are alive. It is known that divorce rates are increasing in society. The single-parent family rate in Türkiye, which was 7.6% in 2014, increased to 10.1% in 2021 (1). Older people living in rural areas provide a striking change in divorce rates is observed among older people living in rural areas. Another important result is the educational background of the participants. The majority of the participants in the study had primary school or lower education (82.4%). This result is particularly important in terms of its relation to the use and need for the internet and digital technologies. The fact that almost all of the participants live with their children or relatives suggests that their social support systems are strong and that they need less technological assistance. In fact, the rate of those with chronic diseases is low among rural older people (19%).

Seventy-two point nine per cent of the participants reported that they did not use the internet. Meanwhile, 27.1% reported using the internet This result is consistent with the research results conducted by TURKSTAT (1) in Türkiye. According to the results of the 2020 Household Information Technologies Usage Survey, while the internet usage rate of the 16-74 age group in Türkiye is 77.7%, only 27.1% of this rate is made up of. Approximately half of the internet users (43.4%) use the internet less than three days a week and mostly for online chatting (78.2%) and following the news (73.9%). Recent studies also have shown that older adults can use the internet to communicate with family members and friends, and also allows individuals to enhance their face-to-face interactions with family members and friends (11-13). Therefore, the internet in some way provides communication facilities for older adults, which reduces social isolation. Some of the participants also use the internet to listen to music and watch videos (39.1%). It is significant that the limited number of older individuals using the internet use it less frequently and generally for communication purposes. This result is very similar to the former research findings (13,14). According to the recent research results, the internet has a protective effect on the mental health of older adults. Mental health can be enhanced by reducing alienation. It is necessary to provide more internet opportunities for older people, especially those in rural areas, to increase the accessibility of embodied cultural capital and bridge the digital divide between urban and rural older adults (15).

None of the participants use the internet for gaming, online shopping or health information. Also, none of the participants used the internet for food safety, sports/fitness applications, or diet information. Only 26% of the participants who used the internet reported that they accessed health information via the internet. A small portion of the participants (21.7%) used the internet to access drug information. Older individuals stated that they received help from their children or relatives for important health applications and other needed information, and that they could not use these applications on their own. These findings are consistent with the results of another study that showed that internet usage differs for older people living in rural and urban areas. According to the results of the former research, older adults living in rural areas, compared to those in urban areas, showed lower levels of all sub-types of technology use (communication, financial, health, and media technology). Additionally, non-users in rural areas exhibited more unfavorable perceptions of technology than urban residents, which means that substantial segments of older adults in rural areas are still behind in accessing and adopting digital technology (16).

More than half of the participants (64.7%) find the use of "smart bracelets" necessary or very necessary. The participants living in rural areas stated that they spend time in fields, gardens, markets, etc., and that they are sometimes alone in these areas. They are positive about the idea of smart bracelets for reaching health services quickly in case of a possible accident. A significant portion of the participants (76.4%) finds the "emergency call" at home necessary or very necessary as well. The participants mostly do not find the "telemedicine" application and "online health application" necessary. The participants do not view favorably on the concept of telemedicine or online health assistance because they think that the doctor cannot reach a full diagnosis without seeing the patient. They prefer to go to the hospital. While 83.5% of the participants find the "online appointment registration system" necessary, 83.6% do not find the online "health payment application" necessary.

The participants use the appointment system to avoid waiting in line at the hospital and their children usually make this appointment. The participants think that online payment is not necessary. Study participants stated limited trust in internet platforms, citing the high incidence of online fraud in current digital contexts as a primary concern. The participants mostly do not find the online psychosocial counseling application necessary (76.5%). Participants think that face-to-face conversations will be better for the person and that the person will express himself or herself more comfortably. For this reason, they do not look favorably on the online psychosocial counseling application. According to the findings of a survey conducted in the rural areas of China, although older adults use smart services and devices (e.g., smartphones) in their lives, they don't understand the concept of "smart aging". The main channels for information are: the village committee and friends and relatives, followed by television and radio, which shows the importance of geographic and blood relations in rural older services. Also, the lack of understanding of the concept of "smart aging" does not affect the use of products (e.g., smartphones) in real life (17).

Finally, 83.5% of the participants reported that they find the "older-friendly smartphone" application necessary or very necessary. As a result of eye problems that occur as they age, older people find it useful to make the phones they use more visible for older people to use more understandable symbols, and they see the development of such a technology as necessary.

These results show that rural older people, who live in villages close to the center in rural areas, provide their own production and mostly live with their families and relatives. They use the internet and digital technologies to a limited extent, and when necessary, they use them by getting help from their children or relatives. It would be more accurate to read this result in two ways. First of all, the strong social ties, their organic diet and active lifestyles of rural older people reduce their need for the internet or digital technologies, which is a positive and desirable situation. On the other hand, technological developments make online and digital services almost mandatory, in which case older individuals who cannot use them effectively become dependent on others.

Study Limitations

There are some limitations in our study. The participants were selected from the villages near the city center. This may give rise to selection bias. The results could not be generalized.

Conclusion

With the results of this study, it is considered important to develop internet and digital technologies as older-friendly, starting from the ones that rural older people need the most. Ensuring their distribution with the support of central and local authorities and providing appropriate guidance and training to older people are crucial. More importantly, it is essential to diversify the smartphones that almost everyone uses.

Ethics

Ethics Committee Approval: The study was approved by the Ethics Committee of Bartın University (protocol number: 2023-SBB-0715, date: 16.11.2023).

Informed Consent: All participants provided written informed consent.

Footnotes

Authorship Contributions

Concept: Ö.Ö., Design: Ö.Ö., Data Collection or Processing: Ö.Ö., Ş.N.T., Y.S., H.G., Analysis or Interpretation: Ö.Ö., Ş.N.T., Y.S., H.G., Literature Search: Ö.Ö., Ş.N.T., Y.S., H.G., Writing: Ö.Ö.

Conflict of Interest: No conflict of interest was declared by the authors.

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