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THE USE OF MODERN TECHNOLOGIES BY THE ELDERLY

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Purpose: The aim of this study was to assess the use and perception of e-health systems by older people during the COVID-19 pandemic in Poland.
Design/methodology/approach: A survey was conducted with 50 respondents. Descriptive statistics and statistical graphs were used to describe older people's use and perception of e-health systems. This is the pilot study.
Findings: One-way ANOVA and chi-square test were used to analyse the relationship between e-health use and various characteristics of respondents, including information regarding communication technology (ICT) access, age, health status, marital status, and education level. Older people, less educated, and with more medical problems are less likely to use e-health.
Research limitations/implications: Most of the ANOVA assumptions have been met.
Practical implications: The COVID-19 pandemic limited face-to-face treatment, making remote medical care more widespread.
Social implications: The use of electronic health (e-health) systems is now becoming more and more popular as it is believed that it can help improve access to medical care.
Originality/value: This study examined the determinants of e-health use among older people in Poland. The level of use of e-health by respondents varied in terms of socio-demographic and health aspects. We found that age, education, marital status and health status, among others, influence the likelihood that an older person will use ICT tools for healthcare purposes.
Keywords: modern technologies, e-health use, elderly people, Covid-19.
Category of the paper: Research paper.

1. Introduction

Electronic health (e-health) is one of the fastest-growing areas of healthcare in many countries, including Poland. Several factors contribute to this rapid increase, including an ageing population, patients' preference for care provided in their homes, and earlier discharges from intensive care units. Telehealth systems are becoming increasingly popular as

they allow to maximize productivity and efficiency while reducing costs in home healthcare (Chae et al., 2001). The advantage of telehealth is also the improvement in the availability and quality of healthcare between patients and healthcare providers and saving time. Telehealth breaks space-time constraints to deliver remote treatment and optimize the allocation of medical resources (Triantafillou et al., 2020; Ma et al., 2022).

E-health is defined as the provision of any health service or information that involves the use of the Internet or other forms of information and communication technologies (ICT) (Boogerd et al., 2015), including, for example, digital storage and transmission of medical records, consultations and medical training conducted via video conference (Ali et al., 2021).

Additionally, due to COVID-19, telehealth has expanded to more patients to reduce unnecessary exposure and preserve personal protective equipment. Many organizations then began to use the infrastructure to provide teleconsultations, including video teleconsultations, and to encourage patients to use mobile applications to monitor their health. These applications take into account the user's perspective using Human Centered Design (HCD) methodologies and collect data through various devices (e.g. data with high-quality health information collected from various sources) (Park et al., 2022).

The literature emphasizes that the provision of telehealth services can be particularly beneficial for the elderly because they are overburdened with chronic diseases. A rapidly ageing population entails a significant increase in the incidence of chronic diseases and their consequences, and thus, the need for increased care and well-being (Merrell, 2015). Among the telecare services dedicated in particular to the elderly, two main systems are in the lead: systems for remote monitoring of patient's health, including their vital signs such as heart rate, blood pressure, body temperature and glucose levels; support systems via ICT, e.g. teleconsultations, SMS reminders about appointments and prescribed medications, as well as educational text messages (Barlow et al., 2007).

The data clearly show that the use of telehealth systems exceeds office visits for diabetes (Bashshur et al., 2015), hypertension, pain (Levine et al., 2014), congestive heart failure (Lemay, Azad, Struthers, 2013), cancer treatment, stroke rehabilitation (Chumbler et al., 2015) and dementia (Postma-Nilsenová, Postma, Tates, 2015). Therefore, the elderly have become one of the main target groups of telecare technologies. Telecare solutions provide new opportunities for diagnosis, treatment, education and rehabilitation, enabling monitoring of patients with many chronic diseases. They also reduce socio-economic disparities in access to care and equalize the chances of patients from urban and rural areas (Bujnowska-Fedak, Grata-Borkowska, 2015).

On the other hand, there is a widespread belief that older people cannot use advanced electronics and telecommunications due to their limited computer and technology skills (Merrell, 2015). While older people have much to gain from e-Health, mobility issues and greater vulnerability to infectious diseases such as COVID-19 mean that they also face particularly high barriers to eHealth use. Older people are generally less likely to use digital

technologies (Poli, Kelfve, Motel-Klingebiel, 2019; König, Seifert, Doh, 2018), and this aspect of the digital divide extends to the use of e-health.

Many previous studies have looked at the use and evaluation of telemedicine from the perspective of patients (Merrell, 2015; Isautier et al., 2020; Holtz, 2021; Powell et al., 2017), especially in terms of reliability (Zarate et al., 1997), cost-effectiveness (Doolittle et al., 1998), patient satisfaction (Allen, Hayes, 2009; Mekhjian et al., 1999). However, in Poland, such studies have not been conducted, and there is no detailed report on the use and experience of e-health by older patients. This leads to three research questions:

- What kind of ICT technologies and e-health services were used by the older patients in Poland during COVID-19?
- To what extent did older people use e-health systems during the COVID-19 pandemic?
- How do older people assess the usefulness of remote technologies to monitor the patient's health?

To the best of the authors' knowledge, no attempt has been made to empirically examine the determinants of using e-health among older people. Several studies have looked at predictors of ICT adoption in general (Andrews et al., 2019; Menéndez Álvarez-Dardet, Lorence Lara, Pérez-Padilla, 2020; Jokisch et al., 2020) and e-health use in particular (Andrews et al., 2019; Poli, Kelfve, Motel-Klingebiel, 2019; Knapova, Klocek, Elavsky, 2020). However, while these studies provide information on the challenges facing e-health, they cannot be generalized to the experiences of older people, who are likely to face additional challenges. This leads to the fourth research question:

- What socio-demographic factors predict the use of e-health among the elderly in Poland?

The answers to the above questions are crucial to promoting the long-term deployment of telehealth services in Poland. Therefore, the aim of this study was to analyze the use of e-health by older patients in Poland and the potential socio-economic factors that may influence this use (Nestlerode et al., 2022).

2. Methods

The survey was conducted from September 13 to September 27, 2021, i.e. during the Covid-19 pandemic, when the transition to remote medical care occurred. Fifty patients were randomly selected for the study from among patients registered in the Otwock poviat in Poland. Participants did not receive any incentive to participate in the study. They were informed that they did not need to have extensive knowledge of ICT and e-health systems to participate in the study. The criteria for inclusion in the study were age over 60 and consent to participate in the

study. No upper age limit has been set. The anonymous survey was conducted during personal visits to senior clubs and the University of the Third Age.

The data presented here were collected using a structured, self-administered questionnaire designed specifically for this study. The order of questions and questionnaires was not changed during the research process. The questions have been grouped into two categories of questionnaire items: 1) The use of ICT and e-health systems 2) data on socio-demographic variables and patients' health status.

In the first part of the survey questionnaire, patients were asked to answer survey questions regarding ICT use. The study used information related to ICT, such as access to ICT tools (e.g. computer, smartphone, RMP - remote patient monitoring devices) and the use of e-health services (electronic data exchange, teleconsultations, video advice, RMP). The variables for measuring access to ICT tools were binary variables that indicated whether the respondent used at least one type of ICT tool, including a computer and mobile phone, to access remote health services. Respondents were also asked to indicate specific tools for remote monitoring of the patient's health (RMP) that they used during the Covid-19 pandemic (e.g. thermometer, blood pressure monitor, heart rate monitor, telemedicine wristband, video monitoring, electronic camera, motion detectors, smartwatches, activity band with geolocation, telemedicine life jacket). The level of use of E-Health systems in the era of the coronavirus pandemic was assessed on a five-point Likert scale ("very poor", "poor", "average", "good", "very good").

The second part of the questionnaire contained questions about the patient's health status and key socio-demographic variables. The following explanatory variables were used in the study: age, education, and marital status. Respondents were also asked to self-assess their health on a five-point scale (very good, good, average, unsatisfactory, very unsatisfactory).

The relationship between e-health use and the studied socio-demographic variables was determined using the chi-square test ($\chi 2$) and ANOVA analysis. Data were calculated and analyzed using Statistica software (version 13.3)

3. Results

Demographic and Socio-economic Characteristics

A total of 50 respondents participated in the survey, of which approximately 68% were women. 52% of the respondents were over 70 years of age. More than half of the respondents (52%) were married, 26% were widows/widowers, and 14% were divorced. There was only one single respondent. Regarding education, 12% of respondents completed only primary school, 22% vocational school, 42% secondary school and 24% higher education. Most of the survey participants came from the city (72%). Nearly half of the respondents (44%) said their health was unsatisfactory or very unsatisfactory, while only 1 respondent reported his/her health

as very good. The socio-demographic characteristics of the respondents are presented in Table 1.

Table 1.
Demographic and socio-economic characteristics

Characteristics	Classification	n	%
Gender	Male	16	32
	Female	34	68
Age	60-64	12	24
	65-69	12	24
	70-74	13	26
	75 or above	13	26
Marital status	Married	26	52
	Single	1	2
	Divorced	7	14
	Widow/Widower	16	33
Education level	Primary	6	12
	Vocational	11	22
	Secondary	21	42
	Tertiary	12	24
Place of residence	City	36	72
	Village	13	26
	No answer	1	2
Health assessment	Very good	1	2
	Good	13	26
	Average	12	24
	Unsatisfactory	9	18
	Very unsatisfactory (chronically ill)	13	26
	No answer	2	4
Using remote medical care	Yes	34	68
	No	16	32

Source: own study.

Use and Personal Experience with ICT Devices and E-health System

In the second part of the study, the respondents were asked to rate the level of use of e-health in medical care on a scale from 1 (very poor) to 5 (very good). The answers to this question are presented in Figure 1.

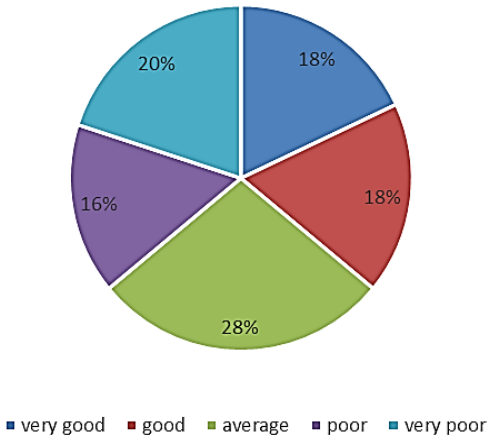

Figure 1. The level of use of e-Health by elderly in Poland during COVID-19.

Source: own study.

The level of e-health use by seniors is average (mean = 2.98). The largest group of seniors (28%) assessed using e-health at an average level. As many as 36% of respondents assess using e-health systems at a poor or very poor level. Conversely, 36% of respondents assess using e-health systems at a good or very good level.

Table 2 presents descriptive statistics on three ICT devices' use and subjective experience. All the surveyed elderly people had access to smartphones in everyday life during the COVID-19 pandemic. Fewer people used computers (46%) and devices for remote medical care (42%).

Table 2.
Descriptive statistics regarding the use and personal experience of ICT devices

		PC n (%)	**Smartphone n (%)**	**RPM n (%)**
Availability	Yes	23 (46)	50 (100)	21 (42)
	No	27 (54)	-	29 (58)
Type of use	Contact tool		50 (**100**)	
	Source of information	27 (**54**)		
	Online patient portal	22 (**44**)		
	Electronic data exchange;		28 (56)	
	Health monitoring	10 (20)	21 (42)	
	Teleconsultations		29 (**58**)	
	Video consultation	10 (20)		
	Thermometer			19 (38)
	Pressure gauge			19 (38)
	Heart rate monitor			18 (36)
	Telemedicine wristband			12 (24)

Source: own study.

For all the surveyed respondents, smartphones were a contact tool, and for as many as 19 people (38%), it was the only purpose of using this device. Patients using telephones for remote medical care used them mainly for teleconsultation (58%) and for exchanging medical data (56%). Some respondents (42%) used these devices for remote health monitoring. For all respondents, using computers was a tool for finding information, and for five people (19%), it was the only purpose for using this device. Patients using computers for remote medical care used them mainly for administrative purposes by online patient portal (44%). Some respondents used these devices for remote health monitoring (10%) and video consultation (10%). Among the devices for remote health monitoring of the patient's health, the most frequently mentioned were a thermometer and a blood pressure monitor (38%), a heart rate monitor (36%) and a telemedicine wristband (24%). The assessment of the usefulness of e-health remote technologies by elderly is presented on Figure 2.

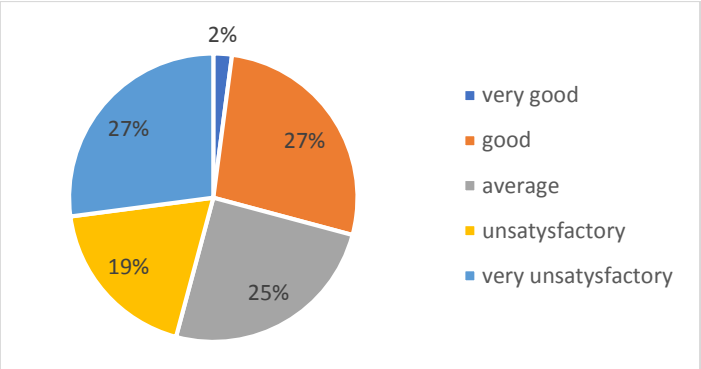

Figure 2. The assessment of the usefulness of e-health remote technologies by elderly.

Source: own study.

The assessment of the usefulness of e-health remote technologies is below average (Mean = 2.58). As many as 46% of respondents assess usefulness of e-health systems at unsatisfactory or very unsatisfactory level. Conversely, 29% of respondents assess usefulness of e-health systems at a good or very good level.

The Relationship between Respondent Characteristics and E-health Use

The statistical study used one-way ANOVA and the $\chi 2$ test. In order to examine the use of e-health systems by seniors, they were asked the following questions:

- Q1 - How do you assess the individual level of use of e-health systems during the coronavirus pandemic? (5 - very good; 4 - good; 3 - average; 2 - poor; 1 - very poor).
- Q2 - Do you use health monitoring devices? (Yes; No).
- Q3 - Do you use teleconsultation? (Yes; No).

The authors checked the existence of a relationship between elements related to e-health systems and a specific feature characterizing seniors in a one-way ANOVA and the $\chi 2$ test by formulating the following hypotheses - null (H0) and alternative (H1):

- H0: The characteristic of seniors has an impact on the variable regarding answers to questions Q1-Q3.
- H1: The characteristic of seniors has no impact on the variable of answers to questions Q1-Q3.

All cases for which H1 was accepted, i.e. cases in which the p-value is less than 0.05, are presented in the tables below (Tables 3 and 4). Based on the mean values (in the case of one-way ANOVA) and percentages (in the case of the $\chi 2$ test), answers to questions Q1-Q3 were determined, which are the least and most important from the point of view of a given feature characterizing seniors.

Table 3.
Relationship between e-Health use level and participant characteristics

Characteristics	**Best rated by**	Mean	SD	**Worst rated by**	Mean	SD	**F**	**p**
Age	60-64	4.25	0.87	75 or above	1.85	1.14	16.08	0.00
Education	Tertiary	4.25	0.75	Primary	1.67	0.82	13.34	0.00
Health assessment	Very Good	5.00	0.00	Very poor	2.00	1.14	3,37	0.01

Source: own study.

Table 4.
Relationship between RPM and teleconsultation use and participant characteristics

Characteristics		RPM use						Teleconsultation use					
		Yes (%)	No (%)	Total (%)	**χ 2**	**DF**	**p**	Yes (%)	No (%)	Total (%)	**χ 2**	**DF**	**p**
Age	60-64	8 (72.7)	3 (27.3)	11 (100)	26,34310	3	0,00001	8 (72.7)	3 (27.3)	11 (100)	12,67558	3	0,00539
	75 or above	1 (12.5)	7 (87.5)	8 (100)				5 (62.5)	3 (37.5)	8 (100)			
Education	Tertiary	5 (71.4)	2 (28.6)	7 (100)	17,92343	3	0,00046	7 (100)	0 (0)	7 (100)	19,59153	3	0,00021
	Primary	0 (0)	11 (100)	11 (100)				4 (36.4)	7 (63.6)	11 (100)			

Source: own study.

Tables 3 and 4 show the relationship between respondent characteristics and the use of e-health systems. Significant differences in the use of e-health systems concern characteristics such as health, age, and education ($P < 0.05$).

The youngest respondents (60-65) declared a higher level of e-health use compared to the oldest group (>75) ($\chi 2 = 33.41$, $p < 0.001$). As age increases, the individual use of e-health systems is lower. 72.7% of respondents from the youngest group use teleconsultations and systems for remote patient health monitoring. In turn, in the oldest group of respondents, using these systems was much less frequent (RMP -12.5%; teleconsultations - 62.5%).

A higher level of e-health use was also shown by respondents who assessed their health condition better. Seniors in very good health used e-health systems more often than seniors with very poor health during the coronavirus pandemic in Poland ($\chi 2 = 36.93$, $p < 0.012$).

Also, seniors with higher education more often than those with lower education levels used e-health systems very well ($\chi 2 = 28.90$, $p < 0.004$). 71.4% of respondents with higher education use systems for remote monitoring of patient's health, and 100% of respondents from this group use teleconsultations. In turn, in the group of respondents with lower education (primary and vocational), these systems were much less frequent. None of them use the RMP system, and 36.4% use teleconsultations.

According to the research, people in the group that used e-Health more often were, therefore, on average, slightly younger, healthier, and better educated compared to those in the group that used less e-Health. Some determinants examined in the questionnaire did not clearly differentiate the level of e-health use (e.g. gender, place of resident). The lack of clear effects is probably due to the nature and size of the sample.

4. Discussion

The Covid-19 pandemic forced a rapid increase in access to e-health in many countries, including Poland. Previous studies conducted in this country have shown high patient satisfaction with teleconsultations, which are the most popular form of e-health in Poland (Kludacz-Alessandri et al., 2021). In this study, we were interested in the use of different e-health systems by older patients. Based on surveys conducted among older people in Poland during the Covid-19 pandemic, this study examined the use and opinions about e-health, and also examined the socio-demographic factors that influence the use of e-health from the perspective of older patients.

The results obtained indicate, similarly to other studies, the diversified use of ICT by older people (Hur, 2016; Menéndez Álvarez-Dardet, Lorence Lara, Pérez-Padilla, 2020). Most respondents use these devices for instrumental and social purposes, especially to seek information (54%) and communicate with other people (100%). The most popular ICT device was smartphone (100%). Other studies have also shown that the majority of older people believe that ICT devices are useful in everyday life and use them, especially the smartphone, the ICT device used most often and considered the most useful and easy to use/control (Broady, Chan, Caputi, 2010; Macedo, 2017).

The study showed that only 46% of respondents use a computer. This is puzzling because: this device is quite accessible and is one of the most widely used for a wider range of purposes (especially email, social media use, filling out documents and searching for information). This result does not coincide with other studies indicating that a computer is one of the ICT devices most often used by older people, both for instrumental and social purposes (Ihm, Hsieh, 2015). Therefore, the use of this ICT device among older people in Poland requires further research.

Due to the high potential risk of contracting the Covid-19 virus (Napitupulu, Yacub, Putra, 2021), patients around the world have become more willing to use online treatment (Kruse et al., 2017). Older patients in Poland also gained the opportunity to use e-health systems during the Covid-19 pandemic. However, the level of use of these systems by older people in Poland can be assessed as average (mean = 2.98), which indicates that the use of telemedicine in Poland may not be effective. As many as 42% of older patients did not use teleconsultations, which were the most popular form of remote medical care in Poland. However, it is worth noting that access to ICT devices is at a high level (smartphone - 100%. computer - 46%) among the respondents. Similar research in Australia showed that although most older participants (around 88%) had access to ICT, few (only around 9%) had used e-health services (Ali et al., 2021). There is therefore a significant digital divide that concerns the use of ICT for healthcare purposes, and this study sheds light on the nature of this divide.

Most people in the study showed very negative attitudes towards e-health systems. Our study showed that 46% of older people believed that e-health systems were of little use in the medical care of patients. These results are contrary to those conducted among healthcare workers. For example, studies conducted in China showed relatively positive evaluations and attitudes towards e-health, where only less than 5% of participants believed that telemedicine was not helpful in reducing the medical burden on patients (Ma et al., 2022).

The most popular e-health system available from a computer was access to the online patient portal. On this platform, patients receive prescriptions and referrals for laboratory and imaging tests, access educational information and order services. Previous research has shown that patient portals can improve medication adherence, provide better patient-provider communication, and enable the detection of medical errors (Dendere et al., 2019). This form of access gives patients more control and encourages them to be active members of the healthcare team (Nestlerode et al., 2022).

Our results showed that a higher level of education, lower age and better health are associated with an increased likelihood of using e-health services.

The study showed that age is an important factor influencing the use of telehealth systems, because the oldest respondents (>75) declared a lower level of e-health use compared to younger groups. As age increases, the individual use of e-health systems is lower. This is confirmed by the results of other studies, which showed that older people are less able than younger people to use electronic devices such as telerehabilitation platforms and mobile applications (Cimperman, Makovec Brenčič, Trkman, 2016) and the oldest elderly are particularly digitally impaired (Zambianchi, Rönnlund, Carelli, 2019). In many cases, older people are less likely to take advantage of digital technologies (König, Seifert, Doh, 2018) and therefore risk being disadvantaged by the digital transformation in healthcare. However, it is unclear whether this finding is mainly influenced by life stage, which is associated with greater challenges in implementing new technologies due to chronic diseases or age-related personality changes. Digital impairment may also result from the fact that many e-health systems were introduced after the retirement of the oldest people (Zambianchi, Rönnlund, Carelli, 2019). Therefore, further research is needed to understand the causes of age-related digital impairment. Our findings regarding age are consistent with previous results on the determinants of eHealth use (Ali, Alam, Taylor, 2020; Knapova, Klocek, Elavsky, 2020; Vroman, Arthanat, Lysack, 2015). Therefore, service providers should offer the oldest patients timely online or telephone support, especially in the form of concise user manuals, help and guidance for older users to understand the use of e-health systems (Chan, Tang, Teng, 2023; Lee, Rho, 2013).

According to our results people with higher education use e-health services more often than elderly with primary and vocationally education. This finding is consistent with previous work on the impact of education on e-health use (Alam et al., 2019; Elliot et al., 2014; Ali, Alam, Taylor, 2020; Menéndez Álvarez-Dardet, Lorence Lara, Pérez-Padilla, 2020; Ali et al., 2021).

Higher educational attainment may have provided older adults with general skills or specific ICT knowledge that facilitates the use of e-health (Elliot et al., 2014). However, people with lower levels of education may lack knowledge about e-health tools and therefore have no motivation to use such technologies (Alam et al., 2019; Elliot et al., 2014). The importance of education highlights the need to address the digital disadvantages faced by older people in a cross-cutting manner.

The study showed that health status is an important factor influencing the use of telehealth systems, because the patients with good and very good health declared a higher level of e-health use compared to the patients with poor or very poor health. Interestingly, other studies have found that self-reported health status does not influence e-health use among older adults. Previous studies have shown that people in good health are less likely to use e-health services (Andreassen et al., 2007; Huang, Yang, Chiang, 2020; Wagner et al., 2004). However, this was based on survey data from the general population, not older people in particular. Further research is needed in this area.

Our study showed that marital status also influences the use of e-health systems. Widowers use these systems much less often than people with other marital status. In our opinion, this may be due to the worse mental health of people who have lost their life partners. Previous research in the UK has shown that symptoms of poor mental health can impact readiness to use technology, and depression is likely to exacerbate difficulties in using digital technologies (Andrews et al., 2019). Further research would be necessary to more fully understand these relationships, such as examining how much depression or anxiety causes a lack of technology engagement among older adults.

This study makes some key contributions to the literature. First, it focuses specifically on older adults rather than broader age groups (Ali et al., 2021). This is the first study focusing on a group of older people conducted in Poland. The study's strengths include the ability to capture the current perspective of older Polish patients on telehealth systems after the outbreak of the pandemic. Unlike previous studies that have shown broad acceptance of telemedicine among the general patient population, our study focused on older adults and examined various e-health systems, not just telemedicine.

However, the study has several limitations. The pilot study was conducted on a small, non-random sample. This study only examined 50 patients in one region of the country. Therefore, the perspectives may not reflect the perspectives of other populations of older people from other regions of Poland, especially in the largest urban centres. To obtain more generalizable results, it is necessary to study a larger sample of older patients across the country. However, recruiting representative samples of older adults will always be challenging. Reaching some people, such as older and less educated people less familiar with technological advances, is particularly difficult. These people are often excluded and underrepresented in research, even though they are the target of the digitization process that is changing the delivery of healthcare services (Poli, Kelfve, Motel-Klingebiel, 2019). There was no follow-up

assessment of patients post-pandemic in this study. Further research is needed to determine continued e-health use once pandemic restrictions are lifted. Due to the development of telemedicine after COVID-19, a survey regarding healthcare workers should also be added. To improve the quality and effectiveness of telehealth services, a mixed-quantitative design is needed to identify factors influencing e-health evaluation at multiple levels, including not only from the perspective of older patients but also from their physicians, health organizations, and the overall policy environment. The study also did not take into account considerations regarding technological constraints such as lack of affordability, low quality of services, lack of enabling technologies and poor knowledge of these technologies. Digital literacy is a particularly pressing issue for older people, especially the oldest (Hsu, 2019). Future work is needed to consider the impact of these factors on e-health use in general and on older adults in particular.

In practice, the research can have several implications for policy priorities in the field of ICT technologies regarding healthcare. First, our finding that older people have poor access to ICT tools such as computers and RMP systems suggests that further programs to increase their accessibility are important. Second, our findings regarding education suggest that digital literacy is also important. Finally, our findings that the oldest people (over 75) are more disadvantaged than younger groups suggest that attention should be paid to this group, in particular in terms of ensuring access to ICT and digital skills. The generational digital divide can be solved through interventions that promote the use and, above all, the personal experience of perceiving the usefulness of ICT among older people who are less familiar with new technologies (Laganá et al., 2011).

5. Conclusions

Older people should be the most important users of e-health systems. Therefore, older people's use and perception of these systems are particularly important for their sustainable development. However, the use of e-health systems by older patients in Poland is relatively insufficient. Most of these people have generally negative opinions and attitudes towards telemedicine services.

This study examined the determinants of e-health use among older people in Poland. The level of use of e-health by respondents varied in terms of socio-demographic and health aspects. We found that age, education, marital status and health status, among others, influence the likelihood that an older person will use ICT tools for healthcare purposes. Younger and healthier people reported higher levels of eHealth use. On the other hand, younger, better-educated people use more devices for remote monitoring of the patient's health. This is an important issue because older people have the most to gain from e-health services (given

their limited mobility and risk of infection related to the Covid-19 pandemic). The importance of e-health will grow as societies age and technology develops.

Given the challenges of ageing populations and pandemics such as COVID-19, e-Health services can be essential to an effective, inclusive and robust healthcare system. This study shows that there is a significant digital divide among the oldest people with lower education levels and poor health. It suggests that public and private efforts to make ICT infrastructure more accessible to these people could also improve this situation.

In future research, it would be worthwhile to investigate problems in the practical application of telehealth that raise deep concerns among older people. The use of incentives could then be increased, thereby increasing satisfaction with using e-health systems.

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