Thesis

Challenges, Perceptions, and Coping Strategies of older adults when using digital GP Care

A qualitative research on the perception of older adults' challenges in the use of digital GP care and how they tackle these challenges.

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Preface

Before you lies my master thesis: Challenges, Perceptions and Coping Strategies of older adults when using digital GP Care. I have written this thesis for completing the master Social Inequalities, at Erasmus University in Rotterdam.

This study has as its purpose to find depth into the problems arising from the utilization of digital services, by older adults. With the rise of patients per GP and all the technological improvements, the meaning of care shall be changed over the years. I was eager to learn how these changes will impact older adults when they use digital GP care services. I tried to provide greater insight into the possible challenges, perceptions, and coping strategies during this study.

I would like to thank Joost Oude Groeniger for the great supervision during the process of writing my thesis. The pleasant guidance and advice helped me to complete this thesis. Furthermore, I would like to thank my respondents. Without them, I could not complete this study and could not provide the insights I sought.

Thank you, to all my friends and family for the support during the writing of my thesis.

I have learned a lot about the process of writing during my thesis and experienced the last few months as informative.

Then it only remains for me to wish you pleasure while reading my thesis.

Rotterdam, June 25th 2023.

Romy Pieterson

Abstract

Because the Dutch population is becoming older, there is an increase in the use of healthcare. Technology is implemented to relieve the heavy burden on the primary healthcare sector. These digital services cause challenges for older adults and reduce the accessibility of primary care. This will be worrisome because the GP must be available for everyone.

This study tries to find out if older adults encounter challenges when using digital primary care services, how they perceive them, and, which coping mechanisms they use for it. This is done with the following research question: *"What are the challenges that older adults face when using digital GP care services, and how do they perceive and cope with these challenges?".*

To answer the research question, interviews are conducted with 10 older adults. All older adults had to speak Dutch and were over the age of 65. The interviews revealed that no older adult had a successful experience with the use of digital primary care services. Older adults may encounter digital difficulties and lack the knowledge to adopt digital services by themselves. They don't perceive the services as necessary and are sceptical about the adoption of the technology. In addition to that, the interviewed older adults experience barriers to primary care, due to lack of access and unsuccessful experience. The older adults prefer in-person contact with the GP and don't want to switch to an online platform. However, help from their social network and education and communication by their GP, are coping strategies to tackle possible challenges. This suggests that older adults encounter challenges in using digital services, but perceive this as unnecessary because they prefer to not use the services. Nevertheless, older adults will apply coping strategies to tackle these challenges.

Keywords: *accessibility, coping strategies, challenges, perceptions, qualitative.*

Table of Contents

1. Introduction

The older population is the fastest-growing demographic group worldwide. In recent years, higher life expectancies, lower birth rates, and better healthcare have resulted in more older adults in the Netherlands. With this prolonged life, older adults are at risk to experience health problems due to their age. They can experience more chronic diseases and comorbidities, which are a heavy burden on the Dutch healthcare system (Rijken, Kerkhof, Dekker & Schellevis, 2005). More health-related technology is implemented to compensate for this heavy burden on the healthcare system. Tasks such as scheduling appointments, interpretation of results, and triage are replaced by technology. Eventually, these developments must improve healthcare and increase the quality of care (Omboni, Caserine & Coronetti, 2016). However, these developments are not promising for everyone. Accessing, engaging, and navigating technology is hard for older adults since they can encounter challenges when adapting to new technology. This may include physical impairments or lack of experience to properly use (Peek et al., 2014). The obstacles for older adults when facing healthcare technology begin with the first interaction with the general practitioner (GP). Booking appointments can be done online on healthcare portals, such as mijngezondheids.net or regional GP apps, making older adults dependent on a basic level of digital savviness that they often lack (Drooghmans, 2022).

The GP serves as a gatekeeper in the Netherlands for secondary and specialty care referrals. Everyone is therefore dependent on the GP when in need of special care, requiring them to be accessible at all times. Older adults will be limited in accessibility because of the challenges when using digital services, making challenges for older adults in using digital care services unpleasant and that must be remedied (Godager, Iversen & Ma, 2015). Yet, older adults are dependent on the healthcare system. Therefore, they need clear explanations and assistance when using digital primary care services. Strategies to deal with the encountered challenges must be deployed (Hoefman & Foets, 2009).

1.1 Aim of Research

While the aging population faces challenges regarding digital primary care services, caused by a lack of experience or other impairments, they depend on technology such as eHealth and telemedicine to navigate GP care (Peek et al., 2014). Yet, little research is done on the challenges encountered by the general population of older adults because most research focuses on vulnerable groups (Seifert & Cotton, 2020). Previous studies have shown possible challenges when using digital applications, but limited research is conducted about the personal perception of possible challenges relating to the digital savviness of older adults, particularly for primary care technology. Given the fact that the general practitioner functions as a gatekeeper, it must be accessible to all citizens (Godager, Iversen &

Ma, 2015). Because it is known that older adults encounter challenges when using digital services, but primary care still needs to be accessible, it is important to study challenges by the general population and how they cope with them.

Prior studies have shown that several coping strategies can help to tackle the problems regarding low digital savviness. This includes good education, better communication, and the help of a social network. However, this research is done for older adults with physical disabilities, making it harder to generalize the outcomes (Hoefman & Foets, 2009). Therefore, this research aims to study how older adults in the Netherlands navigate Dutch GP care in the digital world, how they perceive these challenges, and which coping strategies they use to compensate for the lack of experience or low levels of health literacy. This will be done with the following research question: *"What are the challenges that older adults face when using digital GP care services, and how do they perceive and cope with these challenges?".* The present study will research the perceptual experiences of older adults, their subjective responses and attitudes toward digital services, and if they experience inconveniences. Besides that, the study will delve into if and how older adults apply coping strategies to mitigate the challenges.

1.2 Societal Relevance

To keep the Dutch healthcare system accessible and sustainable, many aspects of care are digitalized. This solution is noninclusive for older adults because they are often not able to adopt these technologies. However, older adults will only use more and more primary healthcare, due to the additional health problems when aging. Therefore, it is not fair that this very group is disadvantaged. Older adults must experience the same accessibility, quality, and inclusion of primary care as every other citizen of the Netherlands. This study, therefore, aims to unravel a deeper understanding of the challenges faced by older adults, including their perceptions and attitudes against digital services of them and how they cope with them. This will provide valuable insights into the interaction between keeping the Dutch healthcare system sustainable but also accessible for the Dutch aging population.

1.3 Scientific Relevance

Existing literature highlights the challenges and coping mechanisms of older adults in the utilization of digital primary care services. However, this is limited to the different topics, and the integration of these concepts is hard to find. While previous studies have highlighted the challenges in accessing digital GP care (Peek et al., 2014), there is a lack of knowledge about how the general population of older adults copes with these challenges (Seifert & Cotton, 2020). To cope with possible challenges, older adults can use a social support network, clear communication, or good education to overcome these obstacles (Lee et al., 2009; Kim & Oh, 2020). The majority of research is conducted on

vulnerable populations, which has left a gap in the understanding and perception of the general population of older adults. Therefore, this research is of significant scientific importance because it will eventually expose the challenges among older adults when using digital GP care, how they perceive this, and how they deal with it. It will conduct insights for making primary care accessible and of good quality for every citizen.

2. Theoretical Framework

Before conducting interviews with older adults, this chapter will provide an elaboration on the existing literature available regarding the relevant theoretical topics. Starting with the aging population, followed by how digital primary care is shaped in the Netherlands. Besides that insights are given about the possible challenges in using digital primary care and the adoption of technology in general. Finally, this chapter ends with an elaboration on coping strategies to tackle the challenges.

2.1 Aging Population

The number of older adults is rapidly increasing all over the world, with every country experiencing growth in size or proportion of older adults. It is estimated that by 2050 the number of people from 60 and above, will reach 1.5 billion, which will represent 22% of the world's population (United Nations, 2019). The Netherlands also knows a trend of an aging population. Especially because of a decline in birth rates and a rise in life expectancy. The increase in life expectancy is due to improved treatment and better management of chronic diseases and comorbidities (Garssen, 2011). With the rise in an aging population, countries have to deal with an increased prevalence of comorbidities and chronic diseases. The healthcare system will be heavily burdened with these conditions and other additional care needs (Dall et al., 2013).

2.2 Digital Services in GP Care

The Dutch healthcare system must adapt to the increasing use of healthcare by older adults, which can be facilitated through the digitization of care. The digital revolution has brought a transformation in how patients receive their care. Every care plan has been integrated with technology, so there must be an understanding of technology to use that (Omboni, Caserini & Coronetti, 2016). Technological changes have also been implemented in primary healthcare services. Online platforms are set up to provide a central online place to request repeat prescriptions, schedule appointments, import own measures valuables when chronically ill, and even e-consults are constructed online (Wegter, 2020). GP practices often support the online use of certain aspects of primary care. The assistant refers to the website and appointment confirmations are sent by email (Wegter, 2020). Additionally, transmitting health data electronically to primary healthcare physicians, ensures that older adults can avoid in-person contact with their GP when dealing with chronic illnesses. This approach is particularly crucial for older adults, as it enables remote monitoring of their health conditions from the comfort of their homes (Omboni, Caserini & Coronetti, 2016). Digital services in primary healthcare have significantly contributed to improving patient outcomes and enhancing the overall efficiency of the healthcare system (Oudshoorn, Neven, Stienstra, 2016).

It is expected that primary care will be digitalized even further. Especially because of the challenges in finding a successor as a GP, primary care will become more dependent on digital services. This may include triage via phone, more use of web applications, and other developments. Also, a more comprehensive digital platform is being developed, which will use chatbots and artificial intelligence (AI) to handle some care needs and offers more online consultations (Korteweg, 2020).

2.2.1 Accessibility of Primary Care

The general practitioner functions as a gatekeeper to secondary or tertiary care in the Netherlands. A referral is required, which is not given without the check of a GP. Especially because older adults will encounter more physical impairments and more healthcare complaints, there is a greater chance they need the GP to refer them to specialized physicians. However, a gatekeeping system is associated with delayed diagnosis and adverse health outcomes, due to prolonged treatment periods (Greenfield, Foley & Majeed, 2016). Consequently, it is crucial to establish accessible primary care to mitigate potential delays effectively.

The digitalization of healthcare is seen as an improvement to enhance access to primary care. Online platforms provide greater flexibility in scheduling an appointment or allowing individuals to take a look at their medical records (Wegter, 2020). Nonetheless, the digitalization of the healthcare system may create additional barriers for older adults (Godager, Iversen & Ma, 2015). Access for older adults can be reduced, while healthcare technologies are designed for improving access. This is a result of the lack of experience, age-related disabilities, and, a lack of access to digital devices (Peek et al., 2014). Even though it has been studied that older adults will experience less access due to the challenges, studies confirming this result are limited. Therefore, this research also looks at whether technology will hinder access to primary care.

2.3 Digital Challenges for older adults

The rapid evolution of digital innovation in healthcare may present challenges for older adults. In some cases, the complexity of certain technologies can prove to be a significant barrier to the effective adoption and use of technology by older adults (Oudshoorn, Neven & Stienstra, 2016). Older adults are often less digital savvy than younger generations, which means that they are not as convenient with technology as younger generations. This is due to little access to technology, resulting in limited experiences with technology in general. Besides that, older adults may encounter physical limitations, such as visual or hearing impairments. All these factors result in a feeling of fear of new technologies (Peek et al., 2014). What seems like simple things, such as downloading an app or using a wearable device, can be hard for the aging population. Older adults, therefore, experience digital exclusion in the healthcare system (Peek et al., 2014; Seifert & Cotton, 2020). In addition to

this, older adults have to deal with exclusion in the development of new technologies (Chu et al., 2021; Oudshoorn, Neven & Stienstra, 2016). This suggests that technology may not always be optimally tailored to the needs of older adults. The encountered challenges when utilizing digital services can be mitigated with better adjustments in technology to better suit the needs of older adults.

2.3.1 Adoption of Technology

The adoption of technology by older adults is dependent on their attitude toward technology. The technology acceptance model (TAM) gives a better understanding of what is needed to adopt new technologies and why this can be difficult for the elderly. This TAM model, by Davis (1989), explains that the perceived usefulness and ease of use influence the attitude toward the technology. Following, the attitude and perceived usefulness influence the behavioural intention to use (acceptance). If there is a positive attitude towards the technology, people have a behavioral intention to use it. This results in the actual use of it (Holden & Karsh, 2010). Adapting certain digital services will therefore depend on the attitude against it. It is important to frame and map out the perceived usefulness and perceived ease of use of older adults, to study their attitude towards the adoption and use of technology.

In the figure below the route to accepting technology is displayed.
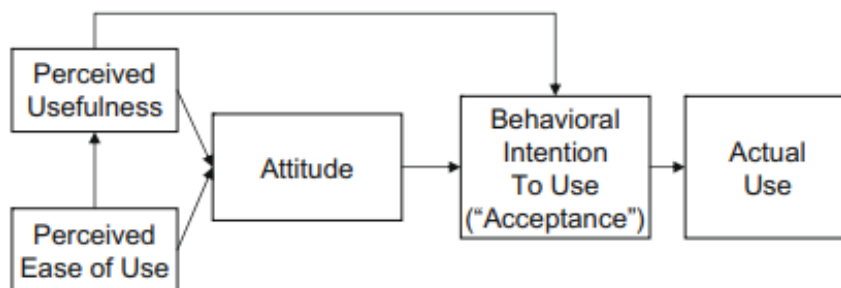
Figure 1: The Technology Acceptance Model. Davis (1989).

The older adults may find a negative attitude towards the behavioral intention to use, due to limited perceived usefulness and ease of use. As stated before, older adults have limited access and experience in the use of technology. But when the older adults perceive these aspects positively, they are more likely to buy or borrow digital devices and start experimenting with them. So even though a lack of experience or access may cause a negative attitude toward the actual use of digital services, the intention is very important for the utilization (Barnard, Bradley, Hodgson & Lloyd, 2013).

2.3.2 Health Literacy

The degree to which individuals can access, understand and use health information and services to make informed decisions about their health, is called health literacy (Berkman, Davis & McCormack, 2010). Older adults with higher levels of health literacy can manage their health effectively and understand health information, maintaining good health and preventing illnesses (Weiss, 2003). However, it is well known that generally older adults experience lower levels of health literacy, resulting in poorer health outcomes, caused by cognitive impairments (Kim & Oh, 2020).

Digital savviness and the use of primary care services are also influenced by an individual's level of health literacy. Individuals with lower levels may find challenges in understanding digital services. Yet, it is especially for older adults, important that they receive the proper care, regardless of their health literacy (Kim & Oh, 2020). To make sure they understand the digital services as well as possible, they need to understand the provided health information and have a certain level of digital savviness (Dunn & Hazzard, 2019).

2.4 Coping Strategies

To tackle challenges in the utilization of digital primary care services, older adults can apply several coping strategies to navigate the digital landscape around primary care. These strategies may help with the adoption of healthcare technologies. The literature distinguishes between three dominant coping strategies that can be used; appealing to a social support system, good communication, and good education about technology (Kim & Oh, 2020; Comino et al., 2012).

First, support from a social network can provide tools to cope with difficulties in the use of digital GP care services. The degree of support varies per person and time and differs between needing support, getting support, and the availability of the support. The last named varies greatly from person to person, requiring support to be adapted to each older adult (Hunsaker et al., 2019). This is much dependent on how broad their social support network truly is. However, social connections value better health outcomes and also help older adults to navigate the digital GP care services (Cohen & Willis, 1985). A social network is expected to play an important role in the education and demonstration of complex digital services. Social networks can enable older adults to use the technology and mitigate the accessibility of the Dutch primary care system. The Dutch healthcare system has shifted to a society where participation and help from and to others become more and more important. Older adults shall become more dependent on their social network, and that social network is likely to provide the right help when facing challenges in the use of digital GP care services (Rijksoverheid, n.d.)

Second, good communication about possible challenges or the older adult's attitude toward technology is important to let older adults deal with challenges. To start, good communication between an older adult and the physician contributes to clarifying concerns about the use of technology. This may include encountered challenges or possible fears in the use. Therefore the GP must create a trust bond, to make sure the patients provide transparent and accurate information about their concerns regarding the of use digital services (Comino et al., 2012). However, older adults indicate preferences to communicate in-person instead of communication through digital devices. So, communication about the digital services should therefore be done with in-person communication (Yuan, Hussain, Hales & Cotten, 2016).

Lastly, education is highly important to improve the digital savviness of older adults. Healthcare providers are obligated to educate older adults about the use and function of digital services, including aspects like contacting the GP and the use of digital services for monitoring diseases (Paterick, Patel, Tajik & Chandrasekaran, 2017). Especially because older adults have more often chronic diseases or comorbidities, online monitoring is important. Also, the online monitoring of self-measured valuables requires good education to tackle possible challenges in its utilization of it. This will improve access to primary care and the digital services it provides (Comino et al., 2012).

Even though research shows that having a social support system and good communication and education is helpful for older adults to improve their digital skills, little research is done on how this is perceived and applied by Dutch older adults themselves.

3. Method

This study is based on a qualitative design, starting with a literature review and using semi-structured interviews to answer the research question. Qualitative research was preferred for this study, because it will give an in-depth understanding of the perception and experiences of older adults, regarding their use of digital services for primary care and their coping strategies for encountered challenges. This design allows for a comprehensive exploration of these concepts and that will bring valuable insights into the aim of the research.

3.1 Selection

The interviewed older adults were recruited from the researcher's local community. Respondents were recruited through the social network of the researcher and a snowball effect, created by the respondents, more older adults were acquired. Despite the potential for sampling bias due to the limited scope of personal social networks, this way of recruiting is chosen anyway, due to ethical considerations. When seeking respondents within the healthcare system, ethical issues would have been encountered, which would have made the research no longer feasible within the given timeframe. All respondents had to be Dutch-speaking and above the retirement age of 65. In addition to that, they all gave informed consent and agreed with the processing of the given data. Although the original aim was to interview older adults with experience in using digital services for primary care, older adults without successful experience were also interviewed. Providing valuable insights into perceptions of digital services by older adults without experience.

3.2 Design and Operationalization

The semi-structured interviews enabled the researcher to probe further and investigate how older adults perceive any encountered challenge but will have good grips to narrow down the concepts that need to be researched. The open-ended and adaptable nature of these interviews has encouraged respondents to share their thoughts and experiences, thereby providing the study with a more comprehensive understanding of their experiences and how they cope with them. The selection of semi-structured interviews, with the help of a topic list, aligns with the inductive approach taken in this study, which seeks to identify concepts that were not initially considered.

The study aimed to collect 12 to 15 hours of interview data to answer the research question. However, a total of 9,5 hours of interview data was obtained from 10 older adults. After the 10 interviews, it became clear that no older adults had experience in utilizing digital GP services and all the other topics were surveyed until no new information was given. At this time it was decided to stop searching for new respondents and focus on the fact that fewer older adults use the digital

services, as there was anticipated. The interviews were predominantly conducted in person, but one was over the phone due to long-distance constraints.

3.3 Data Analysis

After the interviews were conducted, the data analysis has been done. The first step was the researcher's verbatim transcribing of each interview, capturing every spoken word. After the transcribing of every interview, all were thoroughly read to identify repetition in words, sentences, and themes, also known as open coding. Coding has been done manually with the help of Word Office, chosen on previous experiences of the researcher. Labels by color have been used, to highlight every different concept. Each distinct concept had been labelled by a unique code, and every interview was encoded in the same way. The data from the interviews were broken down until only the important concepts from the interviews remained. When coding, open coding was used to follow inductive coding. This is a ground-up approach where codes are derived from the data. Therefore new theories and ideas can be formed easily (Delve, n.d.). At last, selective coding has been used to organize the data into a code tree, which facilitates the inductive approach of this study. This code tree is included in the appendix. During coding, there was a focus to find the following concepts: *the use of GP care, digital services around GP care, acceptance of technology, challenges when using technology, coping strategies, and the understanding of health information.* But the researcher was open to identifying other concepts, outside of these concepts which include: *barriers to using digital care, care for others, transition from non-digital to digital primary care, and in-person contact with GP.*

3.3 Reliability and Validity

3.3.1 Reliability

It is important to take measures to ensure the quality of the study. Reliability is frequently used to measure if the research was conducted properly. Reliability is the degree to which the measurements are independent of chance and if it provides the same results. This requires consistently conducting research, needing every interview conducted the same way (Mortelmans, 2013). Internal reliability will be dependent on the influence of the researcher itself. Thus, in such a situation it is important to make sure that the researcher has as little influence as possible on the coding of the interviews (van Zwieten & Willems, 2004). In conducting the study with interviews, an extensive topic list is used to attempt to structure the interviews. After that the interviews will be transcribed verbatim, to get as much detail as possible during the coding of the data. Unfortunately, it has not been possible to code the transcript with more researchers to enhance the reliability.

External reliability is the reproducibility of a study. Receiving high external reliability is hard in

qualitative research because it is not possible to predict the outcomes of the interviews (Mortelmans, 2013). But to strengthen external reliability in this study, a detailed description of the used methods has been provided. The methods have been described in as specific a way as possible so that a follow-up study can be conducted in the same way. In addition to that, the topic list is made as detailed as possible to try to get comparable answers when repeating the interviews.

3.3.2 Validity

Validity is the degree to which the research also measures what it should measure (Sandelowski, 1993). Internal validity refers to the degree to which the methods and techniques, used in the research, result in the results you want to get to answer the main question (van Zwieten & Willems, 2004). In this study, there has always been a supervisor, who made sure that every step in the research process is done properly. In addition to that, multiple and extensive questions were asked about the several concepts around the main research question. In addition to that, the topic list will is as vast and comprehensive as possible, so deeper questions were asked during the interviews.

External validity involves the degree of generalizability of the results to another setting, such as people, situations, and time. This is less attainable in qualitative research because each respondent would answer differently and each group has different dynamics and interactions. In addition, a certain category of respondents is excluded, which may introduce bias (van Zwieten & Willems, 2004). The exclusion of people who cannot understand and speak Dutch well already limits the number of people who can participate. People who are younger than 65 and don't speak Dutch are excluded, so information on these groups will not be included in the research. Besides that, all interviewed older adults did not have experience with the use of digital primary care services, making it hard to generalize the findings to older adults with experience. This can result in bias and creates missing information (van Zwieten & Willems, 2004).

3.4 Ethical Consideration

This research involves human beings and private information will be shared during the interviews, therefore there must be ethical consideration. In confirmation of conducting the interviews, several measures have been taken. First, a Privacy and Ethics checklist is filled in and included in the appendix. In this checklist, an informed consent form is attached, which will be used before the interviews. This form must be signed by the respondents who agree to the participation in the research and the additional ethical considerations. This also includes that data will be stored privately and the respondents will stay anonymous. Second, the researcher must be aware of their position in this study. Sensitive subjects, such as personal networks or difficulties in the use of technology may be discussed. However, no very personal questions were asked, because that was not necessary to

answer the research question. Hereby it is the job of the researcher to make the interview a safe space, which was achieved by profound listening and ensuring that the respondents only elaborate on things they support. The researcher ensured the respondents that answering the questions was voluntary and emphasized the fact that they don't have to tell other personal things, besides this topic because that information will not be used in this study.

4. Results

4.1 Experiences of Digital Primary Care

Through interviews conducted with older adults, new and valuable insights are gained regarding their experiences, perceptions, and challenges in the utilization of digital primary care services. All older adults make regular use of GP care, primarily seeking appointments when health complaints arise. A few older adults have a quarterly check-up. Also referred to as *the APK (General Periodic Inspection)*, which is the Dutch term for the periodic technical examination of vehicles (R5, R6, R8). Consequently, the interviewed older adults relied increasingly on primary care, as also predicted by Dall et al. (2013). Notably, appointment scheduling among older adults mostly involves phone calls, without the utilization of online appointment systems. The appointments for the quarterly check-up are often made after the last appointment (R8). And two women living near their general practitioner practice will even walk by the desk to make an appointment (R4 & R7).

> *"I just call. I think that is the most convenient. They are easy to reach and it always works if I call" (R2).*

It is remarkable that regardless of the quantity, older adults don't use online appointment booking, even though it is seen as quick and easy (Kortweg, 2020). However, some older adults did try to schedule an appointment online, but this didn't work out. None of the interviewed older adults have successfully scheduled an appointment online. Additionally, the older adults don't have any experience with requesting repeat prescriptions or submitting home-measured values when dealing with chronic diseases. The interviewed older adults neither have experience using the general practitioner's app nor the website. Yet, they are highly aware of the available options. They acknowledge that their GP's practice actively raises awareness among patients regarding all available digital options. Informative leaflets can be taken or banners in the waiting room are strategies employed to inform older adults about digital alternatives. Furthermore, the telephone message played for patients includes instructions redirecting patients to the website or app of the GP. It is worth mentioning that although the GP does not directly inform the following patient, the practice does communicate the options:

> *"Yes, in the waiting room, there's a TV and it's always on there. On a screen like that there is all the information. So you can read about it, and there are also leaflets. I took those with me sometimes. And I think it's a matter of just doing it, but I haven't done that yet" (R8).*

4.1.1 Potential Use of Digital GP Care

The respondents provided several reasons for their potential adoption of digital primary care services. These services hold the 'simple' options as scheduling appointments online, but even the advanced options as e-consults, triage through phone or website, and the other developments in digital primary care on an online platform. The main reason will be the absence of other alternatives, expressed by the phrase: *"If it must, it must".* In other words, they would only use digital options when no other alternatives exist. However, the older adults acknowledge the potential convenience of digital services, provided they are user-friendly and well-explained (R7, R8). Furthermore, the patients express a willingness to utilize digital services if it reduces waiting times, which are experienced when contacting the GP's practice by phone. If the services reduce these waiting times, older adults are more often open to the adoption of digital services.

The interviewed older adults also highlighted reasons for not adopting the mentioned digital primary care services. The primary argument is related to concerns about the quality of healthcare provided through an online platform. A significant majority are convinced that GPs are unable to deliver effective healthcare through digital services. Additionally, older adults do not see the necessity for the integration of digital services. They are sceptical regarding the potential of digital services to enhance primary care, as they perceive the existing system to function well.

4.2 Challenges in Using Digital Primary Care

The interviews with older adults were intended to unravel the challenges encountered while using digital GP services. However, none of the spoken older adults have had a successful experience with the use of it. When trying to use the digital services, the interviewed older adults encountered several challenges, or are likely to, when using the digital services. Digital/technical difficulties such as failed app downloads or problems with logging in are the most common reasons for the inability to make an appointment online. So even though some of them tried, none were able to make an appointment online (R1, R4, R9). A fundamental issue for the older adults is the absence of laptops or digital devices, necessary for utilizing digital services (R1, R5 R6, R10). Although some other older adults do have devices and an internet connection, they do experience challenges in their utilization. In addition to that, the interviewed older adults expressed their struggles with technology in general, as they mostly lack overall experience with technology. The older adults elaborated on the fact that they lack the knowledge and skills to effectively navigate new digital services independently. They are overwhelmed with new technologies and experience even fear in using them (R4, R8). This lack of experience and fear of new technologies contribute to the digital exclusion of older adults' technologies (Peek et al., 2014; Seifert & Cotton, 2020). Peek et al. (2014) further suggest that

physical limitations may also be a challenge for older adults in using digital services, resulting in digital exclusion. However, none of the interviewed older adults experience such physical limitations.

4.3 Attitude Toward and Adoption of Technology

The lack of successful experience is mainly because many older adults have problems keeping up with the rapidly changing digital world. Most older adults long for the past and are sceptical about the technological changes (R1, R2, R3, R10). A 76-year-old woman explained the following:

"I just don't think it's all improved. It really hasn't! So much misery has come through as well. You don't have that if you don't have technology too. And I also know it has its advantages, but also a lot of disadvantages I think" (R1).

The overall sceptical view on technology results in a barrier to embracing technological changes, including adopting digital primary care services. Older adults support this with the phrase: "*If it always worked well, why change it?*" (R4), reflecting their resistant attitude towards technology, which influences their adoption of technology. The Technology Acceptance Model (TAM) of Davis (1989) can be applied to the attitude against and use of the primary care services by the older adults (Holden & Karsh, 2010). The perceived usefulness is predominantly negative among older adults, as they highly prefer physical contact with their GP and perceive digital services as lacking improvement. However, the perceived ease of use varies among different older adults, dependent on their familiarity with digital devices. There is a distinction between older adults who have a laptop and arrange more things online (R6, R8, R9) and older adults who don't have a thorough experience with digital devices (R1, R4, R5). Consequently, the attitude toward technology differs among the older adults interviewed. The men and women who have more experience with digital devices are more likely to have the intention to use digital GP services, regardless of their gender. When older adults have more digital experience, they perceive the technology as more useful and think it more easy to use. Therefore, their attitude is more positive against technology, than those without experience. This will predict that there will be a different actual use, depending on their attitude against digital GP services, according to the TAM model of Davis (1989).

4.4 Perception of Digital Primary Care Services

The older adults participating in the study expressed their perceptions and concerns about the digital services, while also providing insights into the preferred arrangements for receiving primary care. As mentioned earlier, they are very sceptical about the usefulness and ease of use of technological changes. Therefore, a majority of the respondents display a lack of enthusiasm toward the digital environment in primary care. Older adults are scared that their connection with their GP will be compromised, particularly if all interactions were conducted online including, booking appointments,

triage, and online consults (R1, R2, R3, R7, R8, R9). They firmly believe that establishing trust between a patient and their GP is more challenging when primary care is conducted online. All older adults emphasize, therefore, the importance of in-person contact. They are convinced that it is crucial for establishing a trust bond between patients and GP. In their eyes, this is important for describing health complaints of serious medical conditions and adherence to any treatment. According to the following 75-year-old woman agrees with the opinion that serious medical conditions should be consulted in person:

" I really think they should just keep the physical contact anyway. I'm sure plenty of people don't have serious problems, [...], and I think these things can be done digitally, saving a lot of time for those general practitioners. But there would be several things, which cannot be done online. For some complaints, it is just not possible [...]. For some things, the GP should be able to see and talk to you, to know what to do next. I just think that's very important" (R1).

Older adults are convinced that their perception is rooted in traditional beliefs. The world, including the digital world, has changed a lot in the past decades. Because the interviewed older adults are above 65, they are very aware of these changes in the past decades. In the interviews, the older adults compare offline contact with the upcoming future digital services, where everything is done online. The interviewed older adults are convinced that technology is not suitable for them, and in their opinion, an online primary care setting would be impersonal (R3), inconvenient (R4), and will isolate people in their use (R9). This will be contrary to the common approach of primary care, where personal contact, or at least communication with a real person over the telephone, is the norm. Especially when lacking successful experience, succeeding in the utilization of digital services becomes a challenge. Some spoken older adults will perceive the digital services as an additional barrier to using primary care because it is hard to obtain the skills to make it work. Therefore, reducing its accessibility (R1, R2, R8, R9). This is objectionable as the GP is the gatekeeper for specialized care and must be accessible at all times (Greenfield et al., 2016). The following 77-year-old women wouldn't use primary care as much as she should without digital services:

"Well, I think so [that I experience a barrier]. I think I would be less likely to make an appointment with the doctor. It will really hinder something. Because I don't like doing that online, so then I'll be more likely to have something like no I won't do it. Because I still want that more personal appointment" (R2).

Besides that, several interviewed older adults are convinced that the quality of primary care will be reduced (R1, R2, R5, R6, R8). They believe a good relationship and face-to-face contact are fundamental to receiving high-quality care. According to them, the GP can't make well-thought

medical decisions when physical complaints are seen online. It will be objectionable when the quality of care decreases due to technological implementations because that is not the premises of the digital services (Oudshoorn, Neven, Stienstra, 2016). Because of this conviction, it is predicted by the interviewed older adults, that it will result in yet another barrier to making use of primary care.

A few older adults have highlighted the importance of privacy regulations regarding digital GP care. There is a clear distinction between older adults who would fear for their privacy (R1, R3, R9) and those who don't care about that. When no hard privacy regulations are set up, the interviewed older adults prefer not to use the digital services, resulting in yet another barrier (R1, R3, R9).

4.4.1 Health Literacy

It is important to mention that none of the older adults have experiences with struggling to understand and process health information, given by the GP. They all ranked themselves with normal to high levels of health literacy (Berkman, Davis & McCormack, 2010). According to them, this does not have consequences for understanding the digital services. Regarding the matter of not understanding health information, older adults have a positive attitude toward seeking help from their GP. They are willing to ask for help without hesitation when experience challenges. This suggests that their level of health literacy, which they self-identify as normal to high, does not hinder their intention to seek clarification to better comprehend the information.

4.5 Education and Communication

The interviews indicated that the interviewed older adults do not actively engage with digital primary care services. Despite their scepticism regarding the utilization of these services, they offer numerous options for mitigating these challenges and they suggest strategies for successfully adopting technology. If a general practitioner practice decides to work with an online platform, all older adults are convinced that the general practitioner is responsible for the transition from non-digital to digital primary care services. According to the older adults, a GP must make the process as smooth as possible (R3, R4, R10). A GP is obligated to help their patient with challenges. According to the older adults, this can be done with more education and good communication regarding the technological changes. According to the older adults, the GP must be transparent in the process and how this will be arranged. This begins with clear education about possible changes in the care process. With more elaboration on the utilization of digital services, many of the spoken older adults are convinced that they will use the services. If they would receive more information and explanation about digital services, many older adults could master the use of digital services (R2, R3, R4, R8). A good way to communicate about upcoming changes will be letters or leaflets with clear explanations of these changes (R4, R8). A well-defined step-by-step plan is deemed essential for informing older adults about the process of digital care services. Furthermore, in cases where additional assistance is

required, the organization of evenings dedicated to demonstrating the use of the online platform was suggested (R8). Nevertheless, the interviewed older adults state that a GP practice must maintain accessibility for patients who are unable to use digital services. This includes patients with no technological devices, people with limited understanding of digital platforms, and people who will take care of others.

4.6 Coping Strategies

Besides education and communication to mitigate the challenges, older adults may keep finding challenges in the actual utilization of the services. The older people must engage with coping strategies to help them. All of the interviewed older adults expressed a willingness to seek help when encountering problems with technology. However, differences exist among older adults regarding their preferred sources of assistance. There is a distinction between older adults who would ask their social network (R1, R2, R5, R6) and the older adults who would directly go back to their GP practice (R3, R4, R7, R8, R9, R10). Those who would seek help from their social network have close relations with their family and friends and would not hesitate to seek assistance, when in need. Besides that, help from a social network also serves as a validation check (R2, R4). For some older adults, the fear of making mistakes is a big concern, but the help of a social network could mitigate these feelings of fear. Nonetheless, other older adults express a preference for seeking assistance from their GP or GP practice. They believe that the GP and their staff are obliged to ensure that there are as less as possible problems regarding the use of digital services, whereas they should be available for. An older woman is convinced that radical changes, such as a fully online primary care platform, will cause distress and panic among patients, therefore the GP practice should stay accessible:

"Help from the GP must be available. Especially also to reassure people, because I think a lot of people will panic, for example, if we have to do everything online. Then it would be great if we just can ask them the questions and that they will help us when we just can't work it out" (R8).

Older adults with these feelings seek assistance and solutions through their GP practice. By offering more detailed explanations and guidance on the process of using digital services, GPs can enhance understanding and increase an individual's embracement of these services (R2, R8). According to the older adults, there always will be a need for in-person, offline contact with the GP. This would be for patients who have given up the process of learning the digital services (R8, R10). There will simply be some patients who can't work the digital options out, and for them, phone calls and physical consults must stay available.

When asked about reasons to not ask for help, the respondents were unable to provide a definitive answer. It was observed that there was no shame or reluctance to ask for help prevalent

among the older adults (R1, R5, R6, R9). The primary reason for directly seeking assistance arises from their immediate needs. Even though no older adults have had a successful online experience, the older adults would ask for help when necessary. Because the necessity for making the online services work isn't that high, the older adults have not yet asked for help. In case the primary care goes fully online, the older adults would ask their social network or GP for help.

5. Discussion

This study has tried to identify encountered challenges by older adults of digital primary care services, their perceptions, and how they apply coping strategies. It became clear that older adults would face challenges, such as practical challenges and difficulties in the actual use of digital primary care services. Therefore, they are sceptical about the services and will only adopt the technology when it is necessary. However, they would ask for help when they face challenges in the utilization of digital GP services.

5.1 Theoretical Discussion

5.1.1 Challenges of Digital Use

At first, this study was intended to reveal challenges that older adults may encounter while making use of digital primary care services. During the interviews, it became apparent that no interviewed older adults has ever successfully used digital primary care. Therefore it became hard to unravel these challenges. Whereas it is assumed that every patient could use the digital services, in reality, it is not used by the interviewed older adults. However, the interviewed older adults provided insights into possible challenges when they imagined using digital services. These challenges correspond with the encountered challenges which were written about in the literature. As stated by Peek et al. (2014) and Seifert and Cotton (2020), the interviewed older adults experienced digital exclusion, mostly because of a lack of technological experience. The interviewed older adults would not have digital devices or the knowledge to successfully utilize digital primary care services. In addition to that, older adults experience digital exclusion because of the difficult utilization of the services. They indicated that if it is more easy to use, they can see the convenience. Therefore, as stated by Oudshoorn, Neven & Stienstra (2016), the digital services must be more adapted and developed on behalf of older patients.

Online primary care could introduce new challenges, including the establishment of privacy regulations. This can become a serious threat to the use of digital services. Besides that, privacy regulations would also play a part when caring for others. Additionally, there will be people who are unable to use digital GP services. For example, poor people with no money for digital devices, or people who can simply not understand it. For these groups, it must be emphasized that it is important to keep channels of communication and care delivery to help individuals who cannot fully engage with digital services. When this is not properly arranged and explained, older adults may reject the use of digital GP care and it will compromise their access to healthcare. Therefore, the vision of a fully online platform (Wegter, 2020; Korteweg, 2020) is hard to achieve in a short matter of time.

5.1.2 Perceptions of Older Adults

The older adults were very sceptical about technology in general, and especially about the digital GP care. As a result, it is more difficult to adopt new technologies, because their attitude towards the technology is mostly negative (Holden & Karsh, 2010). Yet, they elaborate on the fact that they could make their way around the technologies just fine but simply don't want to. They find greater value in in-person contact with a GP, independent of how often they visit their GP. Even though the digital options would make the provision of healthcare easier and more convenient, the interviewed older adults don't want to. For the development and implementation of these digital services, it is important to keep these perceptions in mind. Developers should not assume that every patient could adopt and want to use technology. This should be adapted to certain groups, with their contribution to the development, as Chu et al. (2021) suggested.

It became clear that certain older adults dealt with problems when trying to use the digital services. After that, they gave up on trying to make the digital GP care services work. It seems, therefore, that after a setback it becomes more difficult to make the older adults use the services. This insecurity of older adults does not contribute to making older adults utilize digital GP care. This would also contribute to the attitude against the negative attitude towards technology, making them not utilize the digital care services (Holden & Karsh, 2010).

All interviewed older adults scored their health literacy level as moderate or high. Implicating that they don't have difficulties understanding and applying health information, according to Kim and Oh (2020). Even though it was anticipated that this would play a bigger role in the digital savviness of older adults, the interviewed older adults showed little importance regarding health literacy levels.

5.1.3 Coping Strategies

In the interviews, the older adults explained that they would use coping strategies to tackle challenges in the use of digital services. Following the findings of the theoretical framework, help from a social network, communication, and education are the three main coping strategies, according to Kim and Oh, 2020, Comino et al., 2012, Hunsaker et al., 2019 and Yuan, Hussain, Hales and Cotten, 2016. This stands in line with the results from the interviews with older adults. They acknowledged that they would enlist help when needing it. However, there is a notable division between older adults regarding preference for the sort of assistance. Whereas Cohen and Willis (1985) mostly focus on help from a social network, a group of interviewed older adults preferred help from the GP himself. Even though this is not a direct social network, it must be more included in the approach of offering help. The GPs must be aware that they can be a social network for their patients and that they must provide help to the patients who encounter challenges in the utilization of digital primary

care services.

The role of a GP is therefore very important because the GP could provide help to older adults to cope with the challenges regarding digital services. In the interviews, the older adults highlighted the importance of clear communication and education about the digital services, provided by the GP. With transparent and accurate information (Comino et al., 2012), the older adults can create an environment where the GP get all the information to help them with challenges regarding the digital services. This would not be a problem for the interviewed older adults, but it must be in-person. This is in line with former studies (Yuan, Hussain, Hales & Cotten, 2016).

Education is yet another factor that must be improved according to the interviewed older adults (Paterick, Patel, Tajik & Chandrasekaran, 2017). The GP does make the interviewed older adults aware of the online possibilities but doesn't provide them with the correct education to actually use it. Education through leaflets, gatherings, or a step-by-step plan are ways to integrate education into the provided care by the GP.

However, the help from a GP will result in more burden on the GP. Even though the digital services must provide some relief from the workload, extra tasks like more communication about it and education do not ensure that. So there will be a conflict between providing actual (in-person) care or helping the patients to utilize digital healthcare services. In this regard, the long-term purpose must be guaranteed. Whether it is with in-person care or with providing communication and education about digital services, the burden on GPs must be enlightened.

5.1.4 Accessibility of Primary Care

The digitalization of primary healthcare will change the accessibility of primary care. Even though digital services must improve access to primary care, older adults have other opinions. As stated before, older adults will experience challenges in using digital services and may experience a barrier in using healthcare. There is a chance that patients will contact the GP less rapidly, or even not at all. However, Wegter (2020), stated that digital services must improve access instead of compromising it and digital services should serve as a replacement for current primary care (Wegter, 2020; Korteweg, 2020). This is contrary to the opinions of older adults, where it is elaborated that digital services won't improve access. The older adults perceive a loss in the quality of primary care and some interviewed older adults are convinced that a GP is not able to treat patients fully online. Therefore, older adults perceive the digital primary care services in some way as an extra barrier to using primary care at all. With this barrier, due to the digitalization of healthcare, access to primary care will be endangered, confirmed by Godager, Iversen, and Ma, 2015.

5.2 Methodological Reflection

It has been stated that qualitative research, expressed by interviews, was the most suitable for answering the research question. The interviews contributed to a more detailed prescription of the challenges, perceptions, and coping mechanisms of digital services by older adults. Nevertheless, this study presented some strengths and weaknesses according to the setup of the study.

During the interviews, it became clear that the interviewed older adults did not successfully utilize the digital primary care services, even though the researcher assumed the older adults had experience in use. Therefore, it became hard to conclude which challenges in the use of digital GP services occur among older adults. It would have been more valuable to interview older adults with challenges in the actual use of the digital services. However, the older adults could imagine upcoming challenges and with these perceptions, the research question could still be answered. Considering this difference in outcomes, it was better when the respondents were filtered by experience or not, what has not been done.

The external validity is considered low in this study. The interviewed respondents are not a proper sample of the overall population of older adults. The respondents are all Dutch, even though the Netherlands has a broad multi-diverse population and experience with digital GP services would be different for other ethnical groups. Besides that, all respondents had no successful experience with the utilization of digital GP services, therefore, it is difficult to transfer this outcome to other groups with experience. In addition to that, only 10 older adults were interviewed, which is too little to draw big conclusions from the data they provided. Nevertheless, this topic was researched saturated enough, because new respondents did not provide new data.

All respondents spoke Dutch and the interviews were also held in Dutch. Yet, the study is written in English. Thus, the data and quotes were translated into English, which may result in the loss of meaning of words. However, proper translation from Dutch to English was performed to stay as close as possible to the actual meaning.

Overall, new information is provided to provide greater insights into this topic, because more general older adults were interviewed. This result in additional information to the scientific literature, about how a more general group of older adults perceive possible challenges in the utilization of digital GP care and how to cope with it.

5.3 Recommendations

Further research focuses on revealing and monitoring the outcomes of challenges in digital primary care. More research must be performed to study if digital services actually create barriers to using primary care. In this study, that statement emerged from the perceptions of the interviewed older

adults, making it not a firm conclusion.

Secondly, studies need to be performed on how to make the transition from in-person care to digital primary care more smoothly. This should be done in a more older adult-friendly way when keeping their perceptions of the digital primary care in mind. Currently, there is an assumption that older adults go along with the process of digital primary care, but according to the interviews, this isn't the case. Therefore, research must be done to look into the process of making older adults actually use digital primary care services.

Lastly, the digital services must be adapted to the different age groups within the patient range of a GP. The spoken older adults are sceptical about the usefulness, and it is questionable if they need to oblige to the digital services. The government must perform research foreclose if it is necessary to make the older adults use the digital services or if in-person contact can be maintained for them. The Dutch government is ultimately the institution that redirects the changes in primary care, making them obligated to investigate if some changes are really necessary.

6. Conclusion

This research tried to answer the research question: *"What are the challenges that older adults face when using digital GP care services, and how do they perceive and cope with these challenges?".* However, this study aimed to interview actual challenges in the use of primary care services, no older adults successfully used digital GP care services. The anticipated challenges would mostly exist of a lack of technological experiences or limitations because of digital errors. This results in more difficulties to adopt new technologies, which is dependent on their negative perceived usefulness and they think it is not easy to use, which makes their intention to use not very high. The older adults perceive the digital GP services as something unnecessary and are sceptical about the usefulness of it. The older adults prefer in-person contact with the GP and that will be reduced with an online platform. Additionally, it is quite possible that the quality of care would be reduced, resulting in an extra barrier to using primary care at all. Overall, the interviewed older adults perceive digital healthcare as something for the younger generations and not for themselves. Nevertheless, the older adults would find proper coping mechanisms to deal with possible challenges in the use of digital GP services, which is independent of their health literacy.

This study has brought valuable insights into the perception and coping strategies of the challenges in the use of digital GP services, contributing to the scientific literature on this topic. It can be concluded that it is not feasible to set up a whole online primary care platform in a short matter of time. It is simply too complex and it costs too much effort for the older adults to adopt the technologies. The relationship between GP and patient will change and it is the question to which extent this is desired. However, if it is being implemented, the GP practices should either provide more education and make sure that the older adults can fully engage with it, or the online environment should become something that grows with younger patients over the years. Nevertheless, the digital services will bring more burden on the GP, and in new research, the trade-off must be made on whether the GP will receive more advantages out of the digital GP care services, than disadvantages.

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Appendices

Appendix I – Ethical and Privacy checklist

ERASMUS UNIVERSITEIT ROTTERDAM

CHECKLIST ETHICAL AND PRIVACY ASPECTS OF RESEARCH

INSTRUCTION

This checklist should be completed for every research study that is conducted at the Department of Public Administration and Sociology (DPAS). This checklist should be completed *before* commencing with data collection or approaching participants. Students can complete this checklist with the help of their supervisor.

This checklist is a mandatory part of the empirical master's thesis and has to be uploaded along with the research proposal.

The guideline for ethical aspects of research of the Dutch Sociological Association (NSV) can be found on their website (http://www.nsv-sociologie.nl/?page_id=17). If you have doubts about ethical or privacy aspects of your research study, discuss and resolve the matter with your EUR supervisor. If needed and if advised to do so by your supervisor, you can also consult Dr. Bonnie French, coordinator of the Sociology Master's Thesis program.

PART I: GENERAL INFORMATION

Project title: Thesis

Name, email of student: Romy Pieterson, 540749rp@eur.nl

Name, email of supervisor: Joost Oude Groeniger, oudegroeniger@essb.eur.nl

Start date and duration: Start date: February 2023, duration 5 months, till the end of June.

Is the research study conducted within DPAS   YES

If 'NO': at or for what institute or organization will the study be conducted?

(e.g. internship organization)

PART II: HUMAN SUBJECTS

1. Does your research involve human participants.   YES

    If 'NO': skip to part V.

    If 'YES': does the study involve medical or physical research?   NO

    Research that falls under the Medical Research Involving Human Subjects Act (WMO) must first be submitted to an accredited medical research ethics committee or the Central Committee on Research Involving Human Subjects (CCMO).

2. Does your research involve field observations without manipulations

    that will not involve identification of participants.   NO

    If 'YES': skip to part IV.

3. Research involving completely anonymous data files (secondary

    data that has been anonymized by someone else).   NO

    If 'YES': skip to part IV.

PART III: PARTICIPANTS

1. Will information about the nature of the study and about what
    participants can expect during the study be withheld from them?   NO

2. Will any of the participants not be asked for verbal or written
    'informed consent,' whereby they agree to participate in the study?   NO

3. Will information about the possibility to discontinue the participation
    at any time be withheld from participants?   NO

4. Will the study involve actively deceiving the participants?   NO
    *Note: almost all research studies involve some kind of deception of participants. Try to
    think about what types of deception are ethical or non-ethical (e.g. purpose of the study
    is not told, coercion is exerted on participants, giving participants the feeling that they
    harm other people by making certain decisions, etc.).*

5. Does the study involve the risk of causing psychological stress or
    negative emotions beyond those normally encountered by
    participants?   `   NO

6. Will information be collected about special categories of data, as
    defined by the GDPR (e.g. racial or ethnic origin, political opinions,
    religious or philosophical beliefs, trade union membership, genetic
    data, biometric data to uniquely identify a person, data concerning
    mental or physical health, data concerning a person's sex life or sexual
    orientation)?   YES

7.
    Will the study involve the participation of minors (<18 years old) or
    other groups that cannot give consent?   NO

8. Is the health and/or safety of participants at risk during the study?   NO

9.   Can participants be identified by the study results or can the
     confidentiality of the participant's identity not be ensured?   NO

10. Are there any other possible ethical issues with regard to this study?   NO

If you have answered 'YES' to any of the previous questions, please indicate below why this issue is unavoidable in this study.

- I want to ask my respondents about their health and the way they navigate the healthcare system. This would be questions about their general health and navigating the healthcare system. Questions will be asked about their opinion and attitude toward technology in the healthcare system and about the understanding of health information. In addition to that, questions will be asked about their social support system. Specific questions about illnesses or other privacy-sensitive subjects will be avoided.

What safeguards are taken to relieve possible adverse consequences of these issues (e.g., informing participants about the study afterward, extra safety regulations, etc.).

- When recruiting respondents I will explicitly tell them about the interview topic of this research, which includes questions about the digital healthcare system and their social support system. When they agree with participating in this research, they must sign an informed consent form (attached in the appendix). In this form, they give permission for recording the interviews and the use of their statements in this research. Besides that, I will give them clear information about the privacy of their interviews, how the data is stored, and how their anonymity is guaranteed.

Are there any unintended circumstances in the study that can cause harm or have negative (emotional) consequences for the participants? Indicate what possible circumstances this could be.

- Some questions can be emotional for respondents. E.g. questions about their health or social support. On the forehand, I will tell the respondents that they have the freedom to say whatever they want to say and that they don't have to tell me certain things if they don't want to. When encountering emotional interviews, I shall inform the respondents about their rights to stop the interview. Afterward, I shall ask them if I still may use their information, even though they signed the informed consent form.

Please attach your informed consent form in Appendix I, if applicable.

Continue to part IV.

PART IV: SAMPLE

Where will you collect or obtain your data?

I will collect my data from interviews with elderly people.

Note: indicate for separate data sources.

What is the (anticipated) size of your sample?

The goal is 12 to 15 hours of interviews. Eventually, 10 older adults are interviewed with a total of 9.5 hours of interviews.

Note: indicate for separate data sources.

What is the size of the population from which you will sample?

10 respondents.

Note: indicate for separate data sources.

Continue to part V.

Part V: Data storage and backup

Where and when will you store your data in the short term, after acquisition?

- I will store my data on the one drive of the Erasmus University. This is done to keep the privacy of the respondents.

Note: indicate for separate data sources, for instance for paper-and pencil test data, and digital data files.

Who is responsible for the immediate day-to-day management, storage and backup of the data arising from your research?

- I am responsible.

How (frequently) will you back up your research data for short-term data security?

- Whenever I change something in the documents I back up my data.

In the case of collecting personal data, how will you anonymize the data?

- When saving the interviews, I won't name the documents with any personal information. It will be Respondent 1.
- I won't save the parts where they introduce themselves.

Note: It is advisable to keep directly identifying personal details separated from the rest of the data. Personal details are then replaced by a key/ code. Only the code is part of the database with data and the list of respondents/research subjects is kept separate.

PART VI: SIGNATURE

Please note that it is your responsibility to follow the ethical guidelines in the conduct of your study. This includes providing information to participants about the study and ensuring confidentiality in storage and use of personal data. Treat participants respectfully, be on time at appointments, call participants when they have signed up for your study and fulfill promises made to participants.

Furthermore, it is your responsibility that data are authentic, of high quality, and properly stored. The principle is always that the supervisor (or strictly speaking the Erasmus University Rotterdam) remains owner of the data, and that the student should therefore hand over all data to the supervisor.

Hereby I declare that the study will be conducted by the ethical guidelines of the Department of Public Administration and Sociology at Erasmus University Rotterdam. I have answered the questions truthfully.

Name student: Romy Pieterson   Name (EUR) supervisor: Joost Oude Groeniger

Date: 23-03-2023   Date: 24-03-2023

TOESTEMMINGSVERKLARING

Door middel van ondertekening van dit formulier geeft u toestemming voor het gebruik van de door u gegeven antwoorden voor wetenschappelijk onderzoek.

Ik verklaar dat:

- ik toestemming geef om het interview op te nemen en dat het interview opgeslagen wordt op een beveiligde omgeving.
- ik het doel en onderwerp van het onderzoek begrijp. Ik kon vragen stellen over het onderzoek. Mijn vragen zijn voldoende beantwoord en ik had genoeg tijd om te beslissen of ik mee doe,
- ik weet dat deelname aan dit onderzoek geheel vrijwillig is.
- ik weet dat de uitvoerend onderzoeker mijn persoonsgegevens en de antwoorden op de vragen kunnen inzien en pseudo-geanonimiseerd verwerken zoals in de informatiefolder beschreven is.
- ik toestemming geef dat de door mij gegeven antwoorden op een later moment hergebruikt mogen worden in het kader van onderzoek door de onderzoeksgroep zoals genoemd in de informatiefolder als ook door andere onderzoekcentra na uitdrukkelijke toestemming van de hoofdonderzoeker,
- ik toestemming geef om de door mij gegeven antwoorden maximaal een jaar opgeslagen worden

Naam

Datum ☐☐ - ☐☐ - ☐☐☐☐

Handtekening

Hoofdvraag: *"What are the challenges that older adults face when using digital GP care services, and how do they perceive and cope with these challenges?".*

Kennismaking

- Voorstellen van interviewer
- Voorstellen geïnterviewde
    - Even kort u zelf voorstellen
    - Leeftijd, woonplaats, opleiding en evt. beroep
- Introductie over het onderwerp en waarom deze interviews gehouden worden.
- Daarnaast benomen dat alle informatie die gedeeld wordt, zorgvuldig wordt opgeslagen en alleen voor dit onderzoek gebruikt wordt. Daarna wordt alles uitgewerkt en de opnames worden vernietigd. Data worden anoniem verwerkt.
- Tekenen van informed consent

Topic: Zorggebruik (5min)

- Maakt u wel eens gebruik van huisartsenzorg?
    - Hoe vaak?
- Hoe benaderd u uw huisarts?
- Op welke manier maakt u een afspraak bij de huisarts?

Topic: Digitale zorg (10min)

In de Nederlandse Gezondheidszorg, en dan ook in de huisartsenzorg, wordt er steeds meer digitaal gedaan. Zo kunt u online afspraken maken, herhaalrecepten aangeven en zelfs bepaalde zorgvragen worden online afgehandeld. Daarnaast kunt u ook resultaten online sturen en afspraakbevestigingen worden nu ook per mail gestuurd.

- Heeft u ervaring met de bovengenoemde digitale services?
    - Zoals, mijngezondheids.net? Of een app die de huisarts gebruikt?
- Hoe maakt u gebruik van deze services?
    - Websites, apps?
    - Hoelang maakt u hier al gebruik van?
    - Waarom doet u dit online?
- Is dit veranderd ten opzichte van voorgaande jaren?
    - Is dit positief of negatief?

- Heeft dit uw zorg van de huisarts veranderd?
    - Is dit verbeterd of niet.

Zo niet:

- Waarom maakt u hier geen gebruik van?
- Bent u zich er wel van bewust dat deze opties beschikbaar zijn?
- Is er aan u gevraagd om gebruik te maken van digitale services?
    - Waarom heeft u hier niet voor gekozen?
- Komt u wel eens in aanraking met digitale services of technologie wanneer u een afspraak wilt maken bij de huisarts?
    - Ja?
        - Leg uit op welke manier u dit tegenkomt.
    - Nee?
        - Het is wel aanwezig, wat zou een reden kunnen zijn dat u er toch geen ervaring mee heeft.
        - Ziet u wel een digitale verandering in de huisartsenzorg?
- Wat zullen redenen zijn om wel gebruik te maken van digitale zorgservices?

- Wat is uw mening over het digitaal maken van de huisartsenzorg?
    - Is deze mening veranderd?
    - Waarom?

Het kan ook zo zijn dat u algemene problemen ondervind bij het begrijpen en verwerken van informatie over de zorg en uw gezondheid.

- Ondervind u deze problemen?
    - Op welke manier ondervind u problemen?
    - Wat zijn redenen voor deze problemen?
- Wat voor effecten hebben deze problemen?
    - Negatieve gezondheidsuitkomsten?

Zo ja,

- Hoe belemmert dit u functioneren en gezondheid?
- Waarom heeft u moeite met het begrijpen en verwerken van de informatie?

- Hebben deze problemen te maken met de verandering in de huisartsenzorg door technologie en de digitalisering van services?

Topic: Problemen met digitale zorg (20 min)

Bij gebruik van digitale huisartsenzorg:

- Hoe ervaart u het gebruik van digitale zorg?
- Wat zijn negatieve of positieve kanten van het gebruik van digitale zorg?
    - Waarom?
- Ervaart u problemen met het gebruik van digitale zorg?
- Wat voor problemen ervaart u en hoe uit zich dit?
    - Komt dat door gebrek aan ervaring, fysieke of mentale beperkingen
    - Heeft dit te maken met uw leeftijd?
- Belemmert dit het krijgen van huisartsenzorg?
    - Waarom belemmert u dit?
    - Door welke factoren wordt dit veroorzaakt?
- Wat zijn de uitkomsten van de problemen rondom digitale zorg?
    - Negatieve effecten?
- Zijn deze problemen veranderd over tijd?
    - Waardoor denkt u van wel of niet?

Bij geen gebruik digitale huisartsenzorg:

- Watt zou, volgens u, wel voor problemen kunnen zorgen bij mensen met weinig digitale vaardigheden?
- Wanneer er veel meer online gedaan wordt, rondom huisartsenzorg, zou u dan zelf wel problemen ervaren, op langere termijn?
- Gaat dit het krijgen van zorg belemmeren?
    - Waarom zal dit belemmeren?
    - Door welke factoren wordt dit veroorzaakt?

Topic: Coping strategies (15min)

qweHet is onderzocht dat er bepaalde oplossingen geboden kunnen worden om problemen rondom het gebruik van de digitale zorg op te lossen.

- Wanneer u problemen zal ondervinden met het gebruik van digitale huisartsenzorg, hoe zal u deze problemen proberen op te lossen?
    - Hoe uit zich dit?

- o   Wat voor soort hulp is dit?
- Wat zijn redenen om juist geen hulp te vragen, terwijl u wel problemen ondervindt?
- Waarom kiest u voor deze hulp?
    - o   Waarom is die (niet) hetzelfde als hier boven aangegeven?
- Vind u het krijgen van hulp door familie en/of vrienden hiervoor belangrijk?
    - o   Maakt u hier ook gebruik van?
- Bent u van mening dat de huisarts een rol speelt bij de educatie en uitleg over bepaalde digitale opties rondom de huisartsenzorg?
    - o   Waarom wel/niet
- Wat kan er door, bv de huisarts, gedaan worden om te helpen bij problemen?
    - o   Op welke manier moet dit gedaan worden?
    - o   Hoe kan deze educatie worden opgezet?
- Wie is er verantwoordelijkheid om ondervonden problemen aan te pakken?

Afsluiting

De huisartsenzorg zal steeds meer digitaal worden, i.v.m. tekorten en te veel patiënten per huisarts.

- Zijn er nog anderen dingen over dit onderwerp die u niet verteld heeft, maar wel nog kwijt wilt?

Bedankt voor dit gesprek.

Appendix III – Code tree

Main topic	Theme	Codes	Data
	Use of GP care	Frequency of appointment	Often Regularly Every 3 months
		Appointment scheduling	Phone Walk-in online
	Use of Digital services	Experience	Little to no experience
		Reasons to use	Necessity Convenient Time-saving
		Reasons not to use	No experiences Traditional beliefs
		Awareness	By the GP Present awareness by older adults
		Barriers	Limited access Privacy Quality
Digital primary care services	Coping strategies	GP	Education Communication
		Social network	Family friends Some prefer social network
		Reasons to use	Want to make it work Responsibility by the GP
		Reasons not to use	Shame
	Attitude toward technology	General	Less experience Access to digital devices
		Contact with GP	Preferences for in-person contact
		Past experiences	Traditional beliefs Comparison with past
	Health literacy	Understanding health information	No problems Moderate to high levels of health literacy

Appendix IV- Information about the Respondents

	Age	Gender
Respondent 1	75	Female
Respondent 2	76	Female
Respondent 3	70	Female
Respondent 4	65	Male
Respondent 5	73	Female
Respondent 6	76	Male
Respondent 7	76	Female
Respondent 8	77	Male
Respondent 9	67	Male
Respondent 10	71	Female