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Factors Affecting Marginalized Older Peoples' Digital Exclusion Evaluated by Gerontological Social Work Professionals

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Abstract. Digitalization is one of today's megatrends, and the increased development and use of various digital services emphasize the importance of sufficient guidance, support, and digital skills. The purpose of this study was to describe factors that can lead to an increased possibility of digital exclusion of marginalized older people evaluated by gerontological social work professionals. The aim was to obtain knowledge for developing age-friendly digital literacy education for older people. The research was qualitative: data was collected from gerontological social work professionals (n = 23) through an open-ended electronic survey and analyzed by using inductive content analysis. Professionals considered that marginalized older people had personal difficulties reaching or adopting digital services with deteriorating cognitive and physical abilities, such as impaired functioning, a lack of motivation or fears, and missing equipment. The possibility of digital exclusion of older people can also be increased by external factors, such as a lack of support and counseling resources, and competence from professionals. Therefore, to be able to utilize digital services, marginalized older people need plenty of support from care workers which should be considered in the service time. In addition, the digitalization of services prevents marginalized older people from managing their own lives unnecessarily early. There is a need to develop facilitating services, and support for acquiring digital skills and advocacy.

Keywords: Digitalization · Digital exclusion · Marginalized older people · Older people · Social work professionals

1 Introduction

Digitalization is one of today's megatrends [1], which challenges and offers opportunities for developers and producers of services and their users. Global societal challenges, such as COVID-19, have further increased the need to rapidly develop digital service

channels, the use of which has also increased during the COVID-19 pandemic [2, 3]. After the pandemic, the use of various digital services has continued to be used, which at the same time emphasizes the importance of developing service guidance and support. For instance, a survey conducted by Kyytsönen et al. (2021) suggests that one in five Finns needs guidance in the use of online social and healthcare services and that there is a significant need for supported use of the internet and digital services in Finland [4]. In addition, 15% of those who responded to the survey felt that digital services were not barrier-free and the ability to use the internet was felt to weaken with higher age groups [4]. According to Pirhonen and his colleagues (2020), digitalization can increase inequality between older people, especially between those with different social, cognitive, and physical resources, and different social and financial standing. Therefore, one of the disadvantages of digitalization can be considered to be that it can increase inequality in the availability of services, especially between older people and generations [5].

The use of digital services requires citizens to have digital skills. In the present research, digital skills are understood, according to the DigComp 2.2 framework created by the European Commission [6], to mean a wide-ranging ability to use, understand, and evaluate digital information; communicate, collaborate, promote health, and safety in digital environments; and produce digital content [7–9]. Advanced digital skills also include the ability to help and guide others with questions related to digital skills [6].

Currently, not everyone has the necessary digital skills, and the concern is particularly accentuated in the older age group. According to Digital and Population Data Services Agency (2023) up to 78 percent of 75–89-year-olds have no digital skills and only half of those aged 65–74 have at least basic digital skills. [10] A lack of digital skills can potentially cause digital exclusion and increasing inequality as a full member of society, which means, in other words, that part of the population still has unequal access and capacity as well as willingness to use digital technologies and media that are necessary for participation in society [11]. However, digital exclusion does not directly mean the exclusion of an individual in other ways as well, but rather focuses specifically on the themes of exclusion from digitalization and services [12], although international literature suggests that it has a strong connection with social exclusion [11, 13, 14]. Yet, the phenomenon also works the other way, because individuals who are in poor health, socially isolated, or in a socioeconomically weaker position are more vulnerable to digital exclusion [13].

Previous studies find that there are mutual and digital exclusion connections between age, education level, the urbanity of the place of residence as well as poor health status and social isolation [12, 15–17]. For example, on average, older age groups are less educated than younger generations, and advanced age is also seen to be significantly related to the risk of digital exclusion compared to younger adults, due to increased functional impairments [5]. However, advanced age alone does not explain digital exclusion or the level of digital skills in general, although differences can be found between older and younger age groups, for example, what digital technologies and media are used and how they are used [18, 19]. Older people in this study refers to the population aged 65 or older who are entitled to an old-age pension according to Finnish law [20]. They form a heterogeneous, large, and growing population group nationally and globally, that are less

experienced users of digital technologies and media compared to younger adults [17, 21]. For instance, older people use social media less than younger generations, although it should still be remembered that older people are a heterogeneous group of people and there are differences within a large group [22].

The purpose of the present study is to describe factors that can lead to an increased possibility of digital exclusion of marginalized older people evaluated by gerontological social work professionals. Marginalized older people in this study are defined as gerontological social work clients in a vulnerable position and having one or more risks related to health, livelihood, social relationships, or living conditions, which, if realized, may lead to a socially weak position. To achieve the set goal, the qualitative research answers the following question: What factors challenge the marginalized older people's digital service adoption and usage?

2   Materials and Methods

The present study was conducted using a qualitative approach. The data was collected through an open-ended electronic survey from gerontological social workers (n = 23), such as special social workers, social workers, social counselors, and home care assistants, from one large city in Finland. The target group of the survey was selected on the basis that they work closely with older people with special needs and their views and experiences were perceived as valuable information. Daily, these gerontological social workers meet marginalized older people because gerontological social work clients need special support, and most of them have a reduced ability to apply services, and often they do not have helpful relatives to support them.

The open-ended electronic survey included a total of six open questions, which focused on the situations of digital service deployment and the support needed from professionals (Table 1). Three social and health professionals tested the open-ended questions and based on the feedback, minor changes were made to the questions and the format, such as harmonizing the terms used and improving the layout of the questions.

The survey was sent through the organization's liaison to the respondents by email and the response time was three weeks. The basic information of the study was given to the respondents before the data collection. The respondents answered voluntarily and by answering, gave informed consent to participate in the study. One reminder of the questionnaire was sent, extending the response time by four days. The data consists of descriptions of 23 respondents to the six open-ended questions.

Using the approach of Elo & Kyngäs (2008), the data were analyzed by qualitative inductive content analysis [23]. When using content analysis, the aim is to describe the phenomenon in a conceptual form. During the preparation phase of the analysis, an analysis unit was decided, which can be a unit of meaning, a sentence, or a word. Here, the unit of meaning was used. The analysis is guided by a research question and was started by reducing the responses to a meaning unit and subdividing similar responses into subcategories. The classification was continued by combining the same content into the upper categories. Eventually, the categories were named according to the unifying factor into the main categories, resulting in five main categories. The main categories were used to describe situations in which professionals became concerned about the increased possibility of digital exclusion of marginalized older people.

Table 1. Open-ended questions.

	Open-ended question
1	Describe briefly how your customers are able to adopt and use the digital services
2	What kind of challenges have you faced that have prevented or made it difficult for your customers to adopt and use digital services?
3	What kind of support do your customers need in order to adopt and use digital services?
4	What is your biggest concern regarding your customers' digital service adoption and usage?
5	Related to the previous question: How do you think your concern should be answered?
6	Is there something else you would like to tell?

3 Results

Based on content analysis of social work professionals' descriptions, the challenging factors which can lead to an increased possibility of digital exclusion of marginalized older people are divided into factors related to marginalized older people themselves and factors related to the competence and resources of social work professionals.

3.1 Factors Related to Marginalized Older People Itself

Factors that can lead to an increased possibility of digital exclusion of marginalized older people based on gerontological social work professionals' descriptions are 1. impaired cognitive or physical functioning, 2. a lack of knowledge, low motivation or fears, and 3. missing or outdated equipment. Professionals evaluated that marginalized older peoples' impaired cognitive and physical functioning prevented and hindered the use of digital services. Impairment of cognitive functioning was manifested as difficulties in learning, understanding the service, adopting the use of the digital service, and following the guidelines. Social work professionals pointed out that the use of digital services requires strong cognitive abilities, and e.g. online banking authentication alone could be very challenging for older people. In addition, the use of complex, changing, and multi-location digital services with impaired cognition further complicates the use of digital services.

"*We practiced using online banking with the client's smartphone at home. The assignments were successful when I was involved in mentoring, but the 65-year-old client was not able to work independently. However, the client has an academic degree and had a career as a special education teacher.*" Professional #12

Professionals evaluated that impaired sensory and fine motor skills also made it more difficult for older people to use digital services, even if they otherwise had the ability to function. Due to poor eyesight, it was difficult to see the small screen clearly, and the clumsiness of the fingers and the trembling of the hands prevented the right keys from being hit.

The gerontological social work professionals pointed out that older people's lack of previous experience with digital solutions and weak digital skills often led to difficulties

in learning how to use digital services. Even if older people had some experience, information technology would have changed since the last time they had used it actively, and older people also have difficulties understanding the vocabulary used.

"If everything, starting with the use of devices and the language used in the digital services, is completely foreign, then there is not much of a basis on which to build a new way of operating in the world." Professional #4

Low motivation and fears against technology were also identified as key issues regarding the adoption and use of digital services by older people. Several professionals highlighted older peoples' fears and prejudices about devices, machines, and their reluctance to use digital services. Moreover, the desire to use traditional, not digitalized services was strong. In addition, the informants described that the fear of being overwhelmed or feeling of unsafety in the digital world limited the activity when it was not understood how the digital service works. The inexperience of older people in digital services also increased the professionals' concerns about the possibility of being abused.

Missing or outdated equipment was mentioned by gerontological social work professionals as one factor increasing the risk of digital exhaustion. The lack of a computer, a mobile device, digital identification, an internet connection, or outdated equipment was seen as a significant hindering factor for marginalized older people in using digital services. This was usually the result of weak health status as well as a reduced ability to function: due to reduced cognitive and physical functioning, marginalized older people are often unable to acquire equipment. Consequently, professionals pointed out that if older people do not have sufficient devices due to their economic situation there was a high possibility of digital exclusion. Outdated equipment such as traditional phones also made it difficult to receive guidance from customer service.

"When calling client support, it is impossible for the younger generation to realize that an older person has an old-fashioned telephone, for example. Explaining it to them is sometimes even comical when they ask them to enter identification codes or try hard to tell a customer to send a text message or online banking ID to complete authentication." Professional #10

3.2 Factors Related to Competences and Resources of Social Work Professionals

In the present study, social work professionals pointed out that their competencies are also related to their customers' digital exclusion of marginalized older people. These factors are 1. a lack of digital competence of professionals for supporting older people, and 2. insufficient counseling resources and competence of professionals.

First of all, professionals described that a lack of digital competence of professionals can lead to a risk of older people being marginalized: unless professionals have insufficient know-how and digital skills, clients are at risk of being excluded from digital services because they do not receive adequate support. Some professionals felt that in addition to older people, they needed digital support. Indeed, professionals needed information and support on how to use the services and how to deal with problems. They needed information about easy-to-use and age-friendly services. Furthermore, professionals needed information on where to get reliable digital support for themselves and their clients. The perceived experience of telephone digital support had seemed necessary, and the answers suggested the profession of a digital counselor as a solution.

"… for example, a digital counselor who also provides support by phone to professionals." Professional #17

Professionals evaluated that the insufficient resources for the time required to support the use of digital services made it difficult to support the marginalized older peoples' use of digital services and might lead to digital exhaustion. To take up the digital service, the marginalized older people needed a lot of guidance, which also involved a lot of work time. Commonly, the need for guidance was not transient. Instead, older people needed constant guidance and support. In their responses to the research questions, the professionals indicated that the employer should consider the time taken to introduce and support the use of digital services by marginalized older people.

"Guidance is not always enough, but the customer needs constant support in using the services, for example, due to a memory disorder." Professional #7

According to professionals, good counseling skills and resources were the key elements for supporting digital skills and encouraging older people to develop them. Counseling requires the professional's competence to adapt to the needs of older people. Social care professionals mentioned that a letter sent home from a remote service does not encourage seniors to try the service, but instead requires an encouraging conversation with a professional, which in turn takes time. There was a need for both face-to-face and remote counseling. Professionals pointed out that it is important to have room for attendance just when older people need it; this requires practice together and encouragement. Introducing the digital service and the support of the digital skills consists of side-to-side counseling, for example just practicing together how to attend remote meetings. The importance of repetition was emphasized: older people needed counseling and practice many times over in a calm atmosphere. Indeed, older people might be insecure about their skills, and a professional's calm and encouraging guidance would lead to the safer use of digital services.

"The customer has his computer and basic digital skills. Together, we went through the steps of making a digital application of benefits and finally, I wrote the instructions step by step. These instructions will enable the customer to use the digital service." Professional #12

4   Discussion

The results of the present study showed that the factors that can lead to an increased possibility of digital exclusion of marginalized older people evaluated by gerontological social work professionals are related to 1. marginalized older people themselves and 2. social work professionals' competencies and resources. More specifically, the factors include impaired cognitive or physical functioning lack of knowledge, low motivation or fears; missing or outdated equipment; a lack of digital competence of professionals for supporting older people; and insufficient counselling resources and competence of professionals.

Impaired cognitive or physical functioning increases the possibility of using digital services. Older people have difficulties reaching or using digital service tools when their cognitive and physical functioning ability has weakened, which confirmed the results of previous studies [26]. To use digital services, there must be a cognitive and physical

ability to function, basic information technology skills, motivation, guidance, and an internet connection [27]. Moreover, using digital services requires a sufficient cognitive ability including the ability to learn and adopt new things. The use of digital services requires, for example, a moderate ability to see and hear and fine motor skills to hit the right choice on the keyboard. There is therefore a need to develop the accessibility of digital services so that they can be used by adults with poor vision, poor hearing, and clumsy fingers. To achieve the accessibility of digital services, it is important not only to look at the individual's characteristics but also to consider issues at a social level, such as guidelines and regulations on age-friendly design (e.g. size of screens and buttons) and intuitive software [5]. As an example, so far, the market economy has still poorly identified older people alongside the young, and if the situation remains like this, older peoples' needs will not be fully supported, and they will be discriminated against [22].

Older peoples' lack of knowledge, low motivation, or fears lead to digital exclusion. The results of the research also showed that the digitization of services and the difficulty of using services in other ways displaced adults from managing their own lives unnecessarily early. Not only did the negative experiences cause concern, but the inability to use services pushed the aging adults beyond the control of their lives. Further, the digitalization of social and health services can increase inequality [4], and negative experiences cause concern about losing control of one's life and facing alienation from society [5]. Deficiencies in digital services must not affect the loss of a sense of control over life or a deterioration in the quality of life. There is a risk that the inaccessibility of digital services leads to new forms of disadvantage. Overall, this can be seen as contradicting the equality laws of Finnish society and the assumption that everyone has equal opportunities to use digital services, which is not true [22]. Although previous studies have demonstrated the positive impact of technology, there are still barriers to using it because of psychological issues in motivation, attitudes, privacy, and trust, and social issues involving learning to use the technology [28].

Digital exclusion can result from the lack of social work professional's digital competence for supporting older people. In the present study, the results showed that professionals assessed whether the aging person could use digital services at all or whether they needed encouragement and support. One important division is to evaluate who cannot and those who do not want to use digital technologies in later life, which might also call for different approaches when trying to reach these target groups [16]. To achieve these professionals should have warm and social skills that will help clarify the needs of older people about the use of digital services and technologies through discussion and questions. When necessary, such professionals also know how to create a friendly atmosphere and choose pedagogically appropriate approaches, where the use of digital services and technologies is encouraged and supported, considering the changes brought about by the heterogeneity and age of the target group [27].

Insufficient counseling resources and the competence of professionals prevent older peoples' use of digital technology. The results of the present study highlighted the fact that professionals should have enough time to guide them in using digital services, as social support is important in learning digital skills [27, 29]. In learning digital skills and services, it is especially important to provide long-lasting learning sessions and systematic support where things can be repeated and practiced [27]. Recent research

also shows that learning to use, in particular, eHealth services for older people in the learning and care ecosystem is a long-term process that is not just a one-time experience only when it is initially introduced [29]. In this sense, employees play a significant role in the implementation of services, and they will offer the opportunity and resources to support the customer [30]. Insufficient resources for the time required to support the use of digital services and the tools required for use have hindered and prevented older people from using digital services. Sufficient resources for professionals are particularly important because older people are outside formal education and working life where skills can otherwise be developed [27].

For the broad target groups of the aging population, it is necessary to plan versatile interventions and approaches for different ages. It would be important to take a closer look at this group from an age point of view because in this heterogeneous group digital skills are already various and will become more diverse with age, so it may matter whether we look at 65-year-olds or, for example, over 75-year-olds (Digital and Population Information Agency, 2023). Another important division might lie between those who cannot and those who do not want to use digital technologies in later life, which might also call for different approaches when trying to reach these target groups. This also suggests that gerontology should not only put the non-use of digital technologies on its research agenda, but also technology reluctance, resistance, neglect, or taste, and that policies should take these constructs more closely into account when designing interventions.

5   Conclusions

The results show that marginalized older people had personal difficulties reaching or adopting digital services with deteriorating cognitive and physical abilities, such as impaired functioning, a lack of motivation or fears, and missing equipment. The possibility of digital exclusion of older people can also be increased by external factors, such as a lack of support and counseling resources, and competence from professionals. Therefore, to be able to utilize digital services, marginalized older people need plenty of support from care workers which should be considered in the service time. In conclusion, we can state that the insufficiency of resources supporting the use time of services or systems makes it difficult and prevents older people from using digital services. Thus, sufficient resources are required to identify these obstacles and to support and guide users.

Ethics. This study was held to the principles of research ethics [24, 25] and a research permit was obtained from the city of Helsinki (diary number HEL 2021-002864). The study did not need a prior ethical review, because the respondents were not under-aged or it did not collect sensitive information, such as respondents' identification information. A covering letter attached to the front page of the electronic survey included information about the aim of the study, voluntary participation, anonymity, and confidentiality. By giving a response to the survey, the respondent gave their informed consent to participate in the study and to the processing of the data. The cover letter stated that the respondent has the right to refuse to participate, to interrupt their participation or to withdraw their consent.

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