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Health services and eHealth from the perspective of older rural residents of Finnish Lapland

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Health services and eHealth from the perspective of older rural residents of Finnish Lapland

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ABSTRACT

This study explored from a life course perspective what kind of relationship older people taking part in the study had toward health services and eHealth. The study sought to answer the following questions: What kind of challenges, positive experiences, and expectations are related to health care in a remote area, according to the respondents? How do the respondents presently conceive and use eHealth? What kind of memories of past life and health services do the respondents report, and how do these express their distinct identities, history, and culture? The research data consisted of written accounts by older residents of Finnish Lapland. Nearly all the respondents reported challenges related to the availability, quality and costs of health services, although they balanced their accounts with positive experiences of well-functioning health services. The respondents' outlooks on eHealth and health services were diverse and built on their temporal self. In terms of the respondents' use of eHealth, only a few of the respondents reported that they presently used eHealth services. Finally, respondents' memories of past life experiences and health services expressed their distinct identities and culture, as the cultural values of resilience and self-reliance were interpreted from the data.

1. Introduction

The aim of this study is to gain a better understanding of older rural residents' conceptions and experiences concerning eHealth and health services. eHealth is here defined, following the World Health Organization (WHO; 2016, p. 11), as "the cost-effective and secure use of information communication technologies (ICTs) in support of health and health related fields, including health-care services, health surveillance, health literature, and health education, knowledge and research." In the present study, eHealth is understood as an umbrella concept for different technological solutions in health care services and health surveillance. In Finland, the context of the present research, digital solutions are utilized in, for example, accessing personal health records, monitoring and measuring one's own health, accessing services (e.g., booking an appointment), receiving services to support independent living, and communicating and exchanging data between patients, professionals, and peers (Ahmadinia and Eriksson-Backa, 2020; Hyppönen and Aalto, 2019). eHealth services bring care outside hospitals, moving health services into the client's own home through the use of technologies such as video conferencing systems, self-monitoring applications, blood glucose meters, nursing robots, and medication-dispensing robots (e.g.,

Flick et al., 2020; Pruchno, 2019).

The present study responds to the challenges that eHealth presents in both urban and rural settings. According to a global survey on eHealth conducted by the WHO Global Observatory for eHealth, despite the substantial increase in the number and range of global eHealth solutions, "the process of embedding eHealth everywhere still has a long way to go, both in terms of coverage and functionality" (WHO, 2016). The context of the present study, Finnish Lapland, is the most northern and most sparsely populated area of Finland. The number of its residents aged 75 and above is expected to increase 68% before 2040, while the working-age population will decrease (Statistics Finland, 2019). The aging population and the economic situation present many challenges in addressing the increased demand for health care services (Kröger and Bagnato, 2017). Care policy throughout Europe has emphasized de-institutionalization and aging in place (Kröger and Bagnato, 2017), and eHealth services have been claimed and developed as a key solution to secure health care services to people of all ages (WHO, 2016).

In Finland, the development of eHealth services aims to "improve availability, quality and cost-effectiveness of services, enhance disease prevention, early detection and self-care, and improve the continuity of treatment" (Hyppönen and Aalto, 2019, p. 148). As the eastern and

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northern parts of Finland in particular are very sparsely populated, catering to the needs of older residents in these areas is a unique challenge. According to the Finnish Information Strategy for Social and Health Care 2020 (Ministry of Social Affairs and Health and the Association of Finnish Local and Regional Authorities, 2015), with eHealth services, securing equal social and health care services for older people living in sparsely populated areas, such as Lapland in northern Finland, can be possible. However, a recent Finnish survey showed that the majority of the citizens were able to use e-services, but there are still people who are unable to use these services, and it underlined the importance of dealing with the barriers of use to prevent digital exclusion (Vehko et al., 2019). Furthermore, in their study on the use of ICTs by residents aged 17 to 98 in small, rural villages in Finnish Lapland, Kilpeläinen and Seppänen (2014) identified three ways of using the computer and the Internet: (1) routine use, (2) entertainment use, and (3) utility use. Out of these categories, "utility use," which included the use of various e-services, was very uncommon among the respondents. The authors argued that this could be due to the availability of e-services or insufficient knowledge, skills, or motivation. However, as Finnish rural policies encourage the development of services available via the Internet, the authors concluded (p. 7) that "strategies have not yet met reality."

Even though there is no universally accepted definition of "older people," in the developed Nordic countries, a definition referring to people over 65 years of age is common (e.g., Begum, 2019a). However, people over 65 years of age are a diverse and socially differentiated group within the society (Gilleard and Higgs, 2005), and this also applies to older people in rural settings (Keating and Phillips, 2008). Previous research on the use of eHealth services and the Internet by older people living in the context of the present study, Finnish Lapland, has indicated that there is variation in older residents' use, willingness to use, competencies in using, and attitudes toward using the Internet and eHealth (e.g., Rasi and Kilpeläinen, 2015; Hakkarainen, 2012; Airola and Rasi, 2020; Airola et al., 2020; Lantela, 2019).

The concept of "rural health" has been used to refer to "a particular field of academic, clinical, public health, policy and advocacy work revolving around the health experiences and outcomes of people living in rural and remote areas, and the provision of healthcare in these places" (Malatzky and Bourke, 2016, p. 158). However, it has also been argued that the most common discourse around rural health, as well as rural health research, is the discourse of deficits, which, instead of understanding rural health *in its own contexts*, presents rural health as problematic and as what it lacks in practices and outcomes *compared* to its urban counterpart (Malatzky and Bourke, 2016). Previous research indicates that there is a need to improve service delivery in rural places, where older residents are disadvantaged when it comes to the formal provision of care (Kelly and Yarwood, 2018). Based on her studies on challenges facing older people in the Arctic at large and the Nordic Arctic in particular, Begum (2019a) recommends that health care facilities be made more readily available and alternative mechanisms such as telemedicine services need to be developed.

In their review of the literature published on rural aging research from 1999 to 2009, Burholt and Dobbs (2012) identified a low rate of studies on technology and rural aging, with only a few practical application and feasibility studies of telemedicine in, for example, the remote diagnosis of Alzheimer's disease. Researchers have emphasized the need to further explore the expectations, needs, and experiences of eHealth services of older people living in both rural and urban settings (Burholt and Dobbs, 2012; Fischer et al., 2014; Hodge et al., 2017; Lantela, 2019; Yusif et al., 2016).

2. Theoretical framework

The analysis of the research data has been informed by *a life course perspective* and theoretical notions that support it. The perspective aims to connect social change, social structure and individual action in the analysis of human behavior (Giele and Elder, 1998). A life course perspective is a useful framework to explore older people's relationship with digital media, such as the internet and eHealth "as unfolding over time, influenced by accumulating life experiences, changing historical conditions and events, and social institutions and policies" (Cooney and Curl, 2019, p. 530; see also Givskov and Deuze, 2018; Rasi-Heikkinen, 2022). Here, in the context of eHealth, a life course perspective is understood following Naab and Schwartzenegger (2017, p. 94; see also Givskov and Deuze, 2018) according to whom the chronological generations' previous media experiences, practices, and life stages are key to understanding their current media practices:

> The process of ageing and the contexts of growing old are more important for understanding the elderly in a mediatized world than age as a state. Older adults' media use is rather to be analysed in terms of changes in the media biography than based on categories of "age".

Previous studies on internet use and nonuse have also supported a life course perspective as they have shown internet nonuse to reflect *cumulative experiences*, in such that higher socioeconomic status (SES) in childhood increases the probability of being an internet user in older adulthood and that having at least one period of high SES in the life course increases the probability of internet use in older adulthood (Silver, 2014).

The analysis of the research data has been informed by understanding older rural residents' *past life experiences* as important when making interpretations about their conceptions of health services and eHealth. Haddon (2000, p. 404) states that "we can gain some critical understanding from an approach which looks more at how technologies fit into, or alternatively find little room in, the totality of people's everyday lives, including the experiences which they bring with them from their past." In young people's self-narratives, references to *past self and life* have been found to be rare compared to the self-narratives of older people. Dittmann-Kohli and Jopp (2007) argue that older people's *temporal self* is different from that of younger persons: their self-narratives indicate that "their identity is built on a long past with many good and bad life events, and contains the memories of their changing experiences, personality and outlook" (p. 280). In older people's temporal selves, the perceived past and present life are integrated with the expected future.

Older people's past experiences were also evident in a study by Rasi and Kilpeläinen on the digital competences and Internet use of older rural residents in Finnish Lapland (Rasi & Kilpeläinen, 2015; see also Hakkarainen, 2012; Lantela, 2019). In the study, the respondents enthusiastically told numerous stories about their past, as well as their present, in which digital technologies and, accordingly, digital competence had no role. In this way, they positioned digital technologies as newcomers within their *life course* and constructed their significance partly in relation to their past, where competences other than digital ones were more significant and personally meaningful. The authors concluded that to understand the meaning of the Internet and digital competence from the respondent's viewpoint, one has to acknowledge the life course of the respondent.

In line with gerontological research and a life course perspective, the analysis of the present study's research data has been informed by an understanding that older rural residents' experiences of and conceptions about health services and eHealth are *diverse*. As Keating and Phillips (2008, p. 7) underline, "Older people in rural areas are different from each other and from rural people in other environmental contexts." However, even if older rural residents' experiences and conceptions are constructed through *historical, social, cultural, local,* and *economic* relationships (Hakkarainen, 2012; Begum, 2019a; Phillipson and Baars, 2007), those with higher levels of *personal resources* are able to manage better in rural environments with poor resources (Keating and Phillips, 2008). For example, isolation, poor transport services, and the unavailability of services may render many people living in remote areas

partial citizens who are unable to access rights afforded to their urban counterparts (Gilleard and Higgs, 2005; Kelly and Yarwood, 2018). However, older people with good personal resources such as health, income, and access to a private vehicle, either as a driver or a passenger, can travel to services unavailable in their rural communities (Dobbs and Strain, 2008; Keating and Phillips, 2008). In terms of older people's use of eHealth services, a recent Finnish survey on citizens' experiences (Hyppönen and Aalto, 2019) indicated that the most prominent citizens' *barriers* of uptake and use of e-services related to health and welfare were the following: the availability, quality, and accessibility of e-services and the users' trust in and attitudes toward their use.

Finally, the meanings of eHealth and health services are socially and culturally constructed through *cultural values*. As Zimmerman Umble (1999, p. 192) argues, "The meanings of technologies, old and new, are culturally constructed and negotiated in the service of particular values or needs." For example, studies on Finnish older people (Sarvimäki, 2013; Suopajärvi, 2014; Ylä-Outinen, 2012) have identified an "aging in place" identity where being able to *live independently in one's own home* is deemed an important value. The cultural values of *independence*, *autonomy*, and *self-reliance* have been noted by researchers of homecare in other cultural contexts as well, not limited to rural contexts only (Sims-Gould and Martin-Matthews, 2008). The use of eHealth has been experienced by some older Lappish residents as enabling independent life, for example, in the case of using a medication-dispensing robot in one's home to ensure medication compliance (Airola and Rasi, 2020). The northern, remote location of Finnish Lapland, as well as significant changes in seasonal weather, make some Lappish households *self-reliant* on their own resources and skills (Tennberg et al., 2020). Tennberg et al. (2020) explored the ways in which low-income households tackle economic hardships in Lapland and found that "a sense of dignity and pride at overcoming hardships dominated the household narratives" (p. 100), as the households considered themselves to be *resilient* in terms of coping with economic, social, and related hardships. Finally, *coping* and *resilience* have been identified as major narrative themes in the recollections of older Finnish people who lived their childhoods in Finland after the Second World War, circa 1945–1960 (Hytönen and Malinen, 2018).

The social and cultural construction of the meanings of technologies, in this case eHealth and health services, is also affected by how well they fit into older people's *everyday lives* (Haddon, 2000). While eHealth technologies may be welcomed by older users (Reeder et al., 2013), they can also be incompatible with the daily routines of older-aged users and thus create tensions and unintended negative outcomes in their everyday lives (Lantela, 2019; Urban, 2017). Based on their systematic literature review on digital developments and their consequences for rural areas, Salemink et al., 2017, p. 368) called for a more contextual and comprehensive understanding of digital developments in rural areas:

> For a comprehensive understanding of digital rural development, the largely offline-based economic history and everyday life ought to be part of the research agenda. Digital developments are not something "virtual" that takes place online; these developments are based in real life.

Furthermore, *economic relationships and realities* limit older people's capacities to access and use health services. Rural residents' freedom to use, consume, and choose eHealth and health services is, in this study, considered to be constrained. According to Gilleard and Higgs (2005, p. 133), "it is the 'poor' who are most likely to 'age in place,' whose dependency upon their neighbourhood will bring them mixed benefits." Previous research indicates that some older residents of Finnish Lapland do not have a sufficient level of income from a pension or other sources of support to maintain a sufficient quality of life (Begum, 2019a, 2019b; Begum and Naskali, 2016; see also Tennberg et al., 2020). Furthermore, previous research has rarely focused on people's experience of poverty in Finnish Lapland, but instead on the current state and further development of the regional social welfare and health care service system

from the perspective of service providers rather than clients and recipients (Tennberg et al., 2020).

3. Method

The aim of this study is to explore from a life course perspective what kind of relationship older people taking part in the present study have toward health services and eHealth. The study seeks answers to the following questions:

RQ1. What kinds of challenges, positive experiences, and expectations are related to health care in a remote area, according to the respondents?

RQ2. How do the respondents presently conceive and use eHealth?

RQ3. What kind of memories of past life and health services do the respondents report, and how do these express their distinct identities, history, and culture?

3.1. Context of the research

The context of the present research, Finnish Lapland, is a sparsely populated area, which is here defined, following the European Commission criterion (Dijkstra and Poelman, 2018), as a geographic area with a population density of fewer than 12.5 inhabitants per square kilometer. According to the Commission's urban-rural typology, the site of the present study is a "predominately rural, remote region" with the share of population living in rural areas higher than 50%.

Depopulation of sparsely populated rural areas in Finland has continued for several decades, with some areas having very few residents (Heleniak, 2014; Raugze et al., 2017). Depopulation has affected residents' accessibility of services. Many services are located in population centers, but less than half of the Lappish people can drive to the center of a city of at least 50,000 inhabitants within 45 min (Dijkstra and Poelman, 2018; Kilpeläinen and Seppänen, 2014). In Lapland's villages, public transportation may be very limited, which makes private car use necessary to access services. However, the climate can be demanding for drivers, particularly during the winter months. Despite the demographic change in Finnish Lapland, aged individuals are likely to stay in their birthplace or move back to their home village after retirement (Jauhiainen, 2009). Older people are attracted to Lapland because of its pure nature and the social communality in remote villages (Begum, 2019b;).

3.2. Data collection

The research data was collected in two rounds in 2019. The first round of research data was collected in April and May by advertising for written accounts in newspapers and free sheets (N = 9) published in the region of Lapland. In addition, an advertisement was posted on a Facebook group called Puskaradio Rovaniemi (an online public forum) with 28,000 Facebook members. In the second round, in August, the advertising was repeated in newspapers and free sheets (N = 3) and on the abovementioned Facebook group. The advertisement was targeted particularly to people living in the northernmost part of Lapland, where we had received the least data in the first round. The decision to collect data through advertising for written accounts was encouraged by the first author's previous study, where collecting written accounts from older rural residents through a newspaper advertisement produced a large amount of data (Hakkarainen, 2012).

The headline of the advertisement was the following: "Are you over 60 years of age and live far away from health services?" In the advertisement, the respondents were asked to write down an account of their lives along the lines of the following questions: How far away do you live from the nearest health service? Does living in a sparsely populated area create challenges for using health services? What kind of challenges? Do you presently use, or would you be willing to use, health services via the Internet? Do you use home care services? Have home care services

provided you with health technologies at your home? What kind of support do you get or would you hope to get for accessing or using health care services? What kind of hopes do you have for health care services in sparsely populated areas? The respondents were told that they could write anonymously and in the way they wanted. In addition, they were told that "the length of the account does not matter."

The research data consists of 17 written accounts and two accounts provided by respondents via telephone. However, one of the written accounts was co-authored by a group of nine respondents, and therefore, the number of respondents in the present study is 27. The length of the written accounts varies between 92 and 1,073 words, with the mean value being 331 words. Altogether, the data from the written accounts was 6,294 words. The lengths of the transcribed telephone accounts were 588 and 4,977 words. In sum, the quantity of the research data was 11,859 words.

3.3. Respondents

The accounts (N = 19) were provided by 10 men and 17 women. The ages of the respondents ranged from 62 to 87 years, with the mean age being 72. In one account, the respondent's age was not mentioned. Nine of the respondents reported that they were retired from working life, and two reported that they were still in working life. Most of the respondents (N = 16) did not clearly mention if they were yet retired or not. The respondents' most common career fields were welfare and health (N = 3), teaching/education (N = 3), natural resources (N = 3), construction industry (N = 2), and government administration (N = 2). Ten of the respondents reported they had completed basic education, four had completed upper-secondary-level vocational qualifications, and three had tertiary-level qualifications. Twelve of 27 respondents did not provide information about their occupation or education level.

All of the respondents lived in Lapland, Finland. In the accounts, all specified their living area; however, some had written the name of a city or village, some a municipality. Respondents' living areas (N = 16) are marked on the map (Fig. 1).

Respondents reported that their distance from home to the nearest health service, usually the primary source of health care, was on average 36 km each way (ranging from 0.4 km to 100 km). In four accounts, the one-way distance to specialized medical care was reported to be from 70 km to 300 km from home. Specialized medical care in Lapland is provided at Lapland Central Hospital in Rovaniemi and at Länsi-Pohja Central Hospital in Kemi. In addition, the distance to a pharmacy from home was reported in two accounts: 80 km and 230 km.

Seventeen of the 27 respondents reported that they do not use home care services (domestic services and home nursing). The main reason was that home care was not (yet) considered necessary. Only one respondent revealed that home care services visit him twice a week and that he wears a wrist alarm that is connected to home care services. The remaining nine respondents did not mention home care services in their accounts. Instead of home care services, support from social networks related to health care or other routine business was reported. One respondent mentioned that after an appointment in the municipality center, she can stay with a friend who lives near the doctor. She had also relied on the help of neighbors when she needed transportation to the central hospital. In two accounts, support from adult children was brought up. It was described as meaningful that children live nearby and can provide support. One respondent stated that some of her children live far away and they seldom have the possibility of helping.

3.4. Data analysis

First, both authors read the accounts (N = 19) several times. In this initial phase, it became clear that half (N = 10) of the accounts included details of the respondents' life histories, their good and bad life events related to health care, and other areas of life. It is noteworthy that the authors did *not* ask the respondents to describe their past in their accounts. The authors decided to treat this information as an important aspect of the data (see Dittmann-Kohli and Jopp, 2007; Haddon, 2000), since it seemed that the respondents were saying that "in order to understand us, you need to know about our past."

The data were then first analyzed deductively by the first author using a qualitative thematic approach. The analysis was guided by the understanding of rural residents' relationship with eHealth and health care as both an individual experience connected to a *temporal self* (Dittmann-Kohli and Jopp, 2007) and one constructed through *social, cultural, local, historical,* and *economic relationships* (Begum, 2019a; Phillipson and Baars, 2007). The analysis was further inspired by previous empirical studies on the *challenges* and *barriers* of eHealth use in urban and rural areas (e.g., Hyppönen and Aalto, 2019). NVivo 12 qualitative data analysis software was used for the coding. To enhance the quality and reliability of the study, the initial codings were validated by the second author, who challenged some of the codings and categories. The categories were then discussed and verified, and additional codings were made to complete the analysis. Respondents' *demographics* were coded according to gender, age, living area, use of home care services, year of birth, distance to nearest health service, and occupation. The following coding categories relating to receiving health care in a sparsely populated area were formed: *Positive Experiences, Challenges,* and *Expectations.* Furthermore, coding categories included the following two: *Use of and Attitudes toward Technologies* and *Life History.* The categories will be described and discussed in the following sections according to the three research questions of the present study.

4. Results

4.1. Challenges, positive experiences, and expectations related to health care services in a sparsely populated area

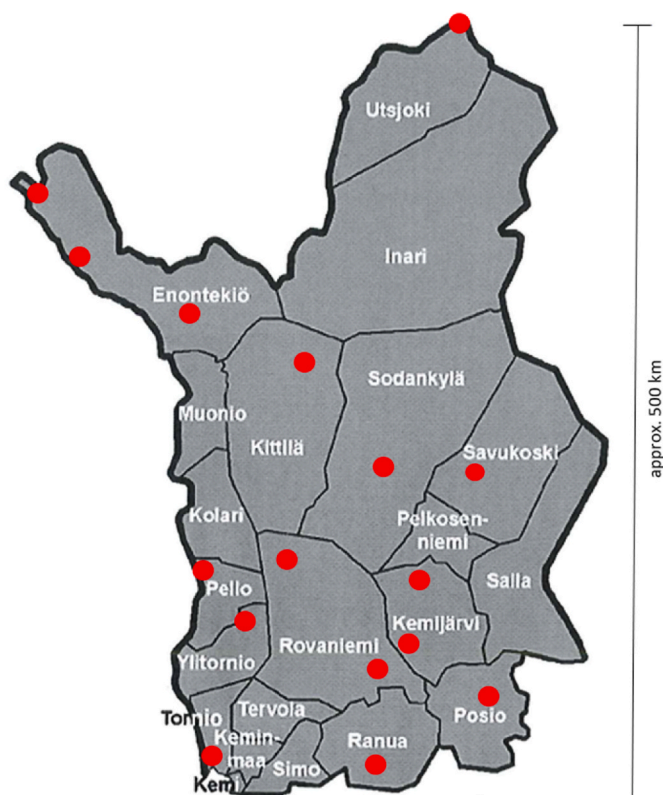Challenges related to health care services in a sparsely populated

Fig. 1. Respondents' living areas in Finnish Lapland. Map template retrieved from sosiaalikollega. fi and research sites added by the authors.

area were coded into five sub-categories (Table 1).

Nearly all (N = 18) of the accounts (N = 19) reported challenges related to the *availability and quality* of health services; to cite one respondent, "everything is slow and far away" (A11). In particular, the respondents referred to the unavailability of specialized medical care and emergency care, for example:

> Well, that's the way life is out here. Should you fall ill in this neck of the woods, it won't be easy. And if you call the health care center, they can't do anything if you're in trouble. (A27)

Insufficient quality could mean "inexperienced" or "recently graduated" doctors or lack of substitutes in situations where personnel were on sick leave or vacation. One respondent wrote about "tired nurses":

> The nurses are so tired, they just couldn't care less. Even their vacation bonuses have been cut somewhere along the line, so, they are simply pissed off at everything. I just don't get it, why is the world changing this way? (A27)

The majority (N = 11) of the accounts (N = 19) discussed the *costs* arising from doctor's appointments, transportation, and medication. The costs could even prevent or postpone access to health care services:

> Kela's [the Social Insurance Institution of Finland] mileage allowance is small, pensions low, drugs expensive. There are those who don't buy medicine because of their low income. (A25)

> The only thing that is hard in life at this age is just a question of money. When you don't have money, you cannot use all healthcare services, either. Because of a measly few tens of euros, you have to postpone your doctor's appointment or visit to the pharmacy till the next pension day somewhere in the distant future! (A3)

Long distances (N = 8) and *transportation* (N = 7) were reported as challenges, which were sometimes extremely difficult to overcome due to winter and spring *weather conditions* (N = 5). As public transportation was lacking or insufficiently scheduled, some of the respondents reported having driven hundreds of kilometers to receive specialized medical care. Driving a car was sometimes not sufficient, as one respondent (A27) reported having used, depending on the weather, a snowmobile, an all-terrain vehicle, or a boat for part of the journey. In overcoming these challenges, help from neighbors and family, as well as using a taxi reimbursed by the Social Insurance Institution of Finland, were reported as crucial. One account noted that veterinary services are also very far away, which may lead to devastating results:

> Our greatest concern has been the vet services for dogs. We lost a dog because we couldn't make it to the vet during the weekend. The emergency service was in [name of a municipality center], which is 160 km away, and the next one would've been in [name of the city], where we promised to take the dog the next morning, but it died already on the way there. (A15)

However, besides reporting challenges, the majority (N = 14) of the accounts (N = 19) included *positive experiences* of well-functioning health services: appointments could be easily made over the phone,

regular invitations to health checkups were received, a nurse and a doctor regularly visited the village, a rollator could be borrowed from the technical aid service, Lapland Central Hospital performed well, home nursing worked "perfectly," waiting times were not long, service at the pharmacy was "fast and flexible," and health care personnel were "easily approachable, friendly, professional, and reliable."

One respondent assessed her experiences from the perspective of past life experiences in the more densely populated south, and thereafter portrayed health care in a sparsely populated area:

> The lesson this remote region has taught me has many sides to it … you don't and you can't simply see a doctor whenever you want … you can only do it when you REALLY need it … Here you learn to listen to your body and disregard puny aches here and there. … Another lesson learned is anticipation; you learn to think and analyze ahead, aware of the fact that you cannot get what you want and were used to in the south; and if you can, you should plan the implementation well in advance! (A11)

Another respondent assessed her experiences from the perspective of her sibling living in the south. From this perspective, too, the health care services in her own living area looked quite positive:

> [My sibling] lives in the metropolitan area. We sometimes chat and compare health care services there and here in the periphery, and often have to note that they are more easily available here, where the population is sparse and transportation lacking. It is by and large a matter of attitude and adaptation. In the urban south, you get downright upset if you miss a bus, although the next one would come in an hour—here the next one might arrive tomorrow, or maybe on Monday! (A3)

Some respondents reported having overcome the challenges of the availability of public health services by using private services farther away. One respondent described positive experiences of using a private health care service in another country and described her living area as "a place for the healthy, or those who need very little health services" (A11). This line of thinking was also visible in the accounts (N = 4) in which a positive experience related to health care services was *being lucky not to need health care services*, as in these two accounts:

> There is a health care center, but no emergency unit. We're lucky not to have needed them services. (A12).

> I'm lucky to still be basically healthy, so I haven't really needed the services of the health care center. (A14).

Finally, in 13 accounts, *expectations* related to health care services in a sparsely populated area were reported. These included hopes for fast, easily accessible, uncomplicated preventive and mobile health care services, as well as better transportation services. For example, one respondent hoped for collaboration between libraries and social services:

> Mental health care services should go on wheels too. The library bus services should be improved. Negotiations with the social sector management would be in order. (A7)

4.2. Conceptions and present use of eHealth

In only a few accounts (N = 5), the present use of eHealth services was described: respondents reported having booked a doctor's appointment online, purchased medicines from an online pharmacy, and used a digital wrist alarm and the online Kanta Services (social welfare and healthcare services, e.g., the prescription service and patient data repository). One respondent described Kanta Services as very helpful:

> The My Kanta health pages are a tremendous asset, because you can renew your prescriptions and read the doctor's statements, albeit with a delay. (A12)

Diverse conceptions of and attitudes toward eHealth and the Internet

Table 1
Coding of the challenges related to receiving health care in a sparsely populated area.

Coding category	Subcategory	Accounts N	References N
Challenges related to receiving health care in a sparsely populated area	Availability and quality	18	34
	Costs	11	25
	Long distances	8	25
	Transportation	7	13
	Weather conditions	5	8

in general could be interpreted from a total of 12 accounts. In seven of these accounts, eHealth and the Internet were conceived positively, and in five of them in a more negative way. In the accounts demonstrating a *positive* outlook, all the respondents reported being ready to use eHealth services in the future, although not everyone knew what these services could be; for example:

> I'm prepared for all possible "web appointments"—it can be done easily, for instance, through Skype. (A12)

> I could use online health care services, I guess. I don't know what they are. (A13)

> I'm ready to use web services; that's why we have acquired a superfast broadband connection. (A5)

One respondent demonstrated a positive, albeit critical, attitude toward surveillance technology:

> A talking flower stand in the future, for instance reminding you to take your medicine or do other things. Requires a well-functioning Internet connection. The role of ethics is obvious, for example, what is monitored and by whom. (A25)

In the accounts manifesting a more *negative* outlook, the respondents reported that they did not use the Internet due to the lack of adequate network service or lack of perceived need, interest, or trust in the digital services. Also, high costs were mentioned in the accounts. The negative outlook is well demonstrated in the following two excerpts:

> … you can't do anything with a computer here … 'cause you get cut off, it doesn't work. There is no service, just one notch. It turns off, then on again, just a waste of time, it doesn't make any sense. And costs a fortune, too. I don't trust this computer stuff, it's pretty much the same as them crooked nurses who understand nothing. (A27)

> I don't want to use the Internet, not even a cell phone. I don't want to learn that trivial nonsense, even expensive at that. … How can they even suggest that teeth can be fixed through the web? Only the Finns are technology freaks. They don't do this nonsense in Central Europe; from occasional visitors we have heard that they have services there. (A4)

In addition, one respondent's conception and attitude were quite negative, but she had, however, been "forced" to start using the Internet through her son and his computer:

> I'm not an Internet user, but now I have to pay my bills and do other things—through my son's computer. He, too, has only had it a few years, still learning. He can withdraw from my account when needed, we've already had this arrangement before. (A8)

4.3. Memories, identities, history, and culture

As argued earlier in this article, half (N = 10) of the accounts included details of the respondents' life histories, both good and bad life events related to health care and other areas of life as well. Therefore, these accounts were coded into the category Life History and its subcategories (Table 2) to answer the third research question: What kind of memories of past life and health services are reported by the respondents, and how do these express their distinct identities and

Table 2
Coding of the life history category.

Coding category	Subcategory	Accounts N	References N
Life history	Resilience and self-reliance	9	24
	Deterioration of services	5	8
	Hardships in health and health care	5	8
	Hardships in life	3	3

culture?

In nine accounts, *resilience* and *self-reliance* were accentuated, as the respondents wrote that despite the hardships and difficult circumstances caused by poverty, sicknesses, hard work at the farm, or the Second World War, they or their acquaintances had overcome the hardships and survived:

> I was hoping to enter secondary school, but they dumped the idea because we couldn't afford transportation. I've gradually striven to get more, occupation by occupation, and always paid my debts. (A12)

> Barely making ends meet on a basic early old-age pension. Husband's dead, partly caused by the war years. Saved Finland, so we're not ruled by others. (A26)

In some accounts, the traditional resources that nature offered for survival were accentuated, as these two excerpts clearly demonstrate:

> I'm from a family of reindeer herders and have next to 20 heads to tend to. The cardiologist said that "it sure is a good thing that you are in shape. If you had stayed lying around in bed," well, that's what the central hospital's doctors also said, "no, it's a good thing that you get exercise." These are tamed animals, so they behave nicely, born here at home and all. Even now, I have four puppies right there, children, fawns. They are so neat, keep your spirits high. (K27)

> No home care for me, I take care of my house and myself, the food comes from the forest. (A4)

In their accounts, the respondents described how during their life histories, health services had deteriorated. Accessing the services of the local health center had become more complicated, as, for example, they no longer could receive medical tests without booking a time. Also, according to one respondent (A1), "Emergency situations have become more complicated, as you don't know where the services originate from." One respondent reported that dental services have been terminated from their living area, whereas two respondents wrote that the services had deteriorated because the respondents had moved to another area. Finally, one respondent had an overtly negative outlook on the deterioration of health services, Finland, and "the world" in general, as the following excerpt demonstrates:

> This is what the world has come to, Finland, people don't care about anything. And, to put it bluntly, driven into … I say, this health care system sure is becoming a bit weird … Surely it is time to start thinking how to treat people, young people. And them politicians just dream about a growing number of children. Who would go for it just like that, the world being what it is? (A27)

In several accounts, the respondents described the *hardships* they had experienced earlier in their life course in health and health services, as well as in other areas of life. The hardships included severe personal health problems, and, for example, two respondents wrote about their near-death experiences:

> At times I was so sick that they taught me to walk again! Away from home for three and a half years. They didn't expect me to make it. I've been given EXTRA TIME. A number of times in intensive care and so on. I've regained the gift of life three times! For instance, at the age of 18 months I was resuscitated after drowning. (A8)

> Then a bit more than ten years ago came this blood disease … when I had that seizure, I couldn't breathe here at home. But as it happens, I made it, 'cause I went to the health care center and they noticed the thickness of my blood. (K27)

One respondent described the health care service that he had experienced 50 years ago. His story points to a harsh service wherein only the most severely injured were treated:

Maybe I should mention the kind of health care service I received from an occupational physician 50 years ago, just for comparison. The garrison doctor was a formidable, big, dark man, [name of the man omitted] … One morning on his way to the office, there were 20 people sitting on the sides of the corridor. He stopped, put on his meanest grin, and yelled, "Goddamn it, all you who are healthy, get out of my sight!" He'd also huff and puff like he always did. Everyone realized the gravity of the situation, and those who fled were loudly instructed that you don't come here unless you've been hit with an ax. (A10)

Reported hardships in other areas of life were hard work on the farm as well as sickness and poverty in the childhood family.

5. Discussion and conclusion

This study focused on the conceptions and experiences of older rural residents of Finnish Lapland concerning eHealth and health services from a life course perspective. The study understood their conceptions and experiences as being constructed through *historical, social, cultural, local,* and *economic* relationships (Hakkarainen, 2012; Begum, 2019a; Phillipson and Baars, 2007) and sought to answer the following questions: What kind of challenges, positive experiences, and expectations are related to health care in a remote area, according to the respondents? How do the respondents presently conceive and use eHealth? What kind of memories of past life and health services do the respondents report, and how do these express their distinct identities, history, and culture?

Nearly all the respondents reported challenges related to the *availability and quality* of health services. Furthermore, the results confirm previous research in that economic realities challenge and limit some older rural residents' capacities to access and use health services (Begum, 2019a, 2019b; Begum and Naskali, 2016; Gilleard and Higgs, 2005), as a majority of the accounts discussed *costs* arising from doctor's appointments, transportation, and medication as a challenge. Therefore, the study brings new information to the scant research on people's experiences of poverty in Finnish Lapland (Tennberg et al., 2020) and older rural residents' expectations of eHealth services (Burholt and Dobbs, 2012; Hodge et al., 2017; Lantela, 2019). In line with previous research in rural settings (Begum, 2019a, 2019b; Chapman and Peace, 2008; Dobbs and Strain, 2008; Keating and Phillips, 2008), *long distances, transportation,* and *difficult weather conditions* proved to be challenges for the respondents. Therefore, the respondents hoped for faster, easily accessible, uncomplicated preventive and mobile health care services, as well as better transportation services.

However, it is noteworthy that even if the authors specifically asked the respondents to focus on the challenges of living in a sparsely populated area, thus for their part strengthening the common discourse of deficits around rural health (Malatzky and Bourke, 2016), the respondents balanced their accounts of challenges with *positive experiences* of well-functioning health services. Some respondents *explicitly* reflected on their experiences of health care in relation to their life course and the totality of their everyday life (Rasi and Kilpeläinen, 2015; Dittmann-Kohli and Jopp, 2007; Haddon, 2000; see also Hakkarainen, 2012; Lantela, 2019) and, assessed from these perspectives, described their experiences as positive. Parts of the positive experiences of health care services were related to the respondents' *personal resources*: their good health and income (Dobbs and Strain, 2008; Keating and Phillips, 2008). They reported being either lucky *not to need health care services* or able to resort to private health services in cases where public services did not meet their needs.

In terms of the respondents' use of eHealth, only a few of the respondents reported that they presently used eHealth services. This finding corroborates prior research, according to which eHealth is not yet widely used globally (WHO, 2016) as well as in rural areas such as Finnish Lapland (Kilpeläinen and Seppänen, 2014; Vehko et al., 2019). In line with previous studies (Akenine et al., 2020; de Veer et al., 2015;

Fang et al., 2018; Milos Nymberg et al., 2019), the respondents of this study demonstrated *diversity* in their conceptions of and attitudes toward eHealth and the Internet in general: their attitudes ranged from highly positive to highly negative. In addition, some respondents wrote about not knowing what eHealth services are and could be.

The results of this study corroborate the authors' previous research (Hakkarainen, 2012; Airola et al., 2020) in that among older rural residents of Finnish Lapland, there are deliberate *Internet non-users*, whose attitude toward the Internet and services delivered through it is very negative and who are not willing to use the Internet. Among these Internet non-users, the Internet may be conceived as "trivial nonsense," as in the case of the present study. This conception contests the dominant political and scientific discourse, according to which digital technologies and services can play central roles in learning, health, well-being, and the everyday life of individuals throughout their life-span (e.g., Livingstone et al., 2005; Ministry of Social Affairs and Health and the Association of Finnish Local and Regional Authorities, 2015). In Finland, the rhetoric that Finland needs to take "a digital leap" has become popular in public discussion and policy documents related to public services (see, e.g., Saari and Säntti, 2018), and the conceptions of older Internet non-users participating in the present study clearly contest the imperative of the digital leap. In addition, the study also corroborated previous research indicating that even if older people might themselves be non-users, they may make others do things for them online, as one of the respondents reported using the Internet through her son, a phenomenon that in the research literature is referred to as *proxy use* (Reisdorf et al., 2021).

Following a life course perspective, the details of the respondents' *life histories*, both good and bad life events related to health care and also to other areas of life, were, in the present study, treated as a significant aspect of the data (see also Hakkarainen, 2012; Rasi and Kilpeläinen, 2015; Lantela, 2019). Life histories reported by the respondents indicated that their outlook on eHealth and health services in general is built on their *temporal self* (Dittmann-Kohli and Jopp, 2007), which contains experiences of health and health care from a long period of time. The present health care services were sometimes explicitly assessed in comparison to the respondents' past life, as, for example, one respondent (A10) clearly formulated: "Maybe I should mention the kind of health care service I received from an occupational physician 50 years ago, just for comparison." In some accounts, the comparisons were not explicit, but the respondents' accounts seemed to be saying, "I've gone through much harder times than the present."

Furthermore, the fact that the respondents wrote about their life histories that did not include digital technologies such as eHealth (even if the authors did not specifically ask them to) was here interpreted to mean that, by doing this, they signaled that digital technologies were newcomers in their *life course* and, as such, had a very small personal meaning or no meaning at all (see also Hakkarainen, 2012; Rasi and Kilpeläinen, 2015; Lantela, 2019). Finally, respondents' memories of past life experiences and health services expressed their distinct identities and culture, as the cultural values of *resilience* and *self-reliance* were interpreted from the data (Hytönen and Malinen, 2018; Sims-Gould and Martin-Matthews, 2008; Tennberg et al., 2020; see also Sarvimäki, 2013; Suopajärvi, 2014; Ylä-Outinen, 2012). According to the authors' interpretation, the respondents signaled to the authors that during their life course they had survived many hardships, and that the meanings of the present eHealth and health services need to be understood relative to these hardships.

The study has limitations. For a more comprehensive and representative knowledge of health services and eHealth from the perspective of older rural residents of Finnish Lapland, data from a larger number of respondents, as well as complementary data collection methods such as questionnaires, interviews, and participant observation (see also Tennberg et al., 2020), would be needed. However, despite the relatively small size of the data set, the results pointed to *diverse* experiences, conceptions, and expectations related to receiving health care services in

a sparsely populated area. In addition, it would be important to study has the COVID-19 pandemic increased use of eHealth in order to avoid potential infections or increased older people's willingness to use eHealth services. Interestingly, Finnish older people's Internet use and social media use increased during the COVID-19 pandemic (Statistics Finland, 2020).

The results of the present study shed light on how the meanings of eHealth and health services are socially and culturally constructed through cultural values (Zimmerman Umble, 1999)—in the case of the present research, through the values of *resilience* and *self-reliance*. The results of this study are highly culture-specific, though we would expect there to be some similarities in eHealth and health services–related conceptions and experiences in rural areas in developed countries. The data collection instrument of the study was not originally designed to explore the respondents' life courses. Interestingly, however, half of the accounts included details of the respondents' life histories and thus, inspired the authors to apply a life course approach. For gleaning deeper life course perspectives, the instrument should have included questions about the respondents' life histories.

The results corroborate previous research in that there is a need to improve service delivery in rural places (Begum, 2019a; Kelly and Yarwood, 2018) in terms of availability and quality. From this study, it is clear that some older people do not fully understand what is meant by eHealth, and furthermore, that some older people do not welcome eHealth and the Internet and have an overtly negative perception of them. The practical implication of the results is therefore that adequate eHealth-related information, as well as training and support that would address these negative conceptions, should be provided. However, to promote digital inclusion (e.g., Digi arkeen Advisory Board, 2019), older people should also be provided with opportunities to receive public and private health services through alternative service and information provision means besides online services.

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Data availability

The authors do not have permission to share data.

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