



Patients' perceived access to healthcare: comparison of in person, phone call, and telehealth appointments

MAIN FINDINGS

- Patients who had managed their last appointment in the past 12 months remotely by phone or via telehealth (video, chat) had more rarely accessed healthcare without undue delay compared to those who had visited in person.
- Patients of private medical clinics and occupational health care had more often accessed healthcare without undue delay compared to patients of health centres. The study analysed experiences of patients who had had an appointment at a health centre, a private medical clinic, in occupational health care, or a hospital outpatient clinic.
- An appointment with a registered nurse seemed to be easier to secure compared to a physician's appointment except for telehealth appointments (e.g., video, chat).
- In rural and semi-urban municipalities patients had accessed healthcare without undue delay more often compared to urban residents. However, rural residents seemed to have trouble securing a phone or telehealth appointment without undue delay.

Access to healthcare is facing challenges all around the world because of limited capacity to provide care. In high-income countries, these challenges are addressed by rationing care, prioritising healthcare needs, and using waiting lists. (Dawkins et al., 2021.) In addition, telehealth has been identified as a key strategy for improving access to primary healthcare services (Kruse et al., 2021), especially in rural areas (Gizaw et al., 2022). However, telehealth appointments seem to more often be used in urban areas compared to rural areas (Khairat et al., 2019; Vehko et al., 2022). One mechanics of telehealth appointments that improves access to healthcare seems to be the reduction in no-show appointments which has also been detected among socially deprived patients and minorities (Sumarsono et al., 2023; Abou Ali et al., 2023). When patients use healthcare professionals' appointments as booked, professionals' time is not wasted on no-show appointments. Another mechanism may be related to telehealth appointments frequently being organised with lower costs compared to healthcare appointments that require the caregiver and the patient to be in the same physical space (Kruse et al., 2017; Hakanen et al., 2023). Organising the services with lower costs can ultimately improve the healthcare system's capacity to provide services for all patients who need them.

The Ministry of Social Affairs and Health intends to promote the primary role of digital services in the Finnish healthcare system according to the government programme of prime minister Petteri Orpo (Saario & Vuokko, 2023). Digital contacts (phone, video, chat) in Finland have been increasing particularly during the first year of Covid-19 epidemic; in 2020 38 % of contacts with a registered nurse and 22 % of contacts with a physician in outpatient health care were digital (Kyytsönen et al., 2021). Since then, the increase of digital contacts has been particularly prominent among physicians (Sotkanen 2020, Avohilmo, 2023a). It is also likely that the increasing supply of telehealth services (video, chat) has reshaped the accustomed clientele of phone call-based services. Subsequently, some of those who used to prefer phone calls may have moved on to telehealth services. In line with this, the allocated professional resources to telehealth services have been reported to currently not match the extent of telehealth service use (Pennanen et al., 2023), which might hinder access to healthcare via telehealth. Another challenge is the general lack of healthcare workforce (Tevameri, 2022). On the other hand, digital work has been recognized as a pulling power in recruiting healthcare professionals (Pennanen et al., 2023). This could be particularly relevant in Finnish primary healthcare where access to services has been a persistent problem (Tynkkynen et al., 2023; Aalto et al., 2022; Aalto et al., 2023).

In Northern Europe, it has been reported that the adoption level of video appointments among physicians remains low (Assing Hvidt et al., 2023). A similar finding was reached in a Finnish study of registered nurses (Kainiemi et al., 2023). Professionals and researchers acquainted with telehealth have identified the lack of integration between video applications and electronic health records as one key obstacle. Additionally, they have suggested that the broader adoption of video appointments requires professionals' reflection of their professional identity and their perceptions of gold standard of care both personally and collectively in telehealth context. (Assing Hvidt et al., 2023) Healthcare professionals need established practices (for physicians, see e.g., Terho & Tikkanen, 2023) on who to care via telehealth and understanding on why to choose a specific telehealth channel instead of a phone call. Furthermore, digitalisation of healthcare requires new skills not only from patients but also from healthcare professionals (Kaihlainen et al. 2023).

Improving access to healthcare requires deep understanding of patients' experiences of access to healthcare without undue delay. Yet research on access to healthcare in high-income countries often focusses on specific sub-groups (Dawkins et al., 2021) and a similar trend can be observed in studies comparing the use of telehealth and in person healthcare

Maiju Kyytsönen

Finnish Institute for Health and Welfare

Anna-Mari Aalto

Finnish Institute for Health and Welfare

Lotta Virtanen

Finnish Institute for Health and Welfare

Emma Kainiemi

Finnish Institute for Health and Welfare

Tuulikki Vehko

Finnish Institute for Health and Welfare

How the research was conducted 1/2:

The Healthy Finland survey covers the health, well-being and service use of adults aged 20 and older living in Finland. The questionnaire can be accessed [online](#). The study was reviewed by the Institutional Review Board of the Finnish Institute for Health and Welfare (THL/72/6.02.01/2022). The randomly selected survey sample was 61,600 and the response rate 46.3 per cent (n=28,154). The survey could be answered by post or online from September 2022 to February 2023. (Koskela et al., 2023.)

All independent variables were included in the first binary logistic regression model and the model selection was done by backward elimination of independent variables that were not statistically relevant according to Wald test p-value ($p \leq 0.05$). Excluded independent variables of model 1 were: gender ($p=0.85$), education group ($p=0.23$), long-term illness and regular care needs ($p=0.14$). Digital skills had a p-value on the border (0.06), but was left in the model to adjust the model properly. The final model 2 (Table 2) did not include disruptive multicollinearity (variance inflation factors: 1.12-2.02). Model 2 was supplemented one-by-one with interaction terms of appointment type and a) care person and b) degree of urbanisation to analyse the possible moderating effect of appointment type.

We used SPSS Version 29 (descriptive analysis) and R Version 4.2.2 (regression analysis). Statistical population weights based on register data were used in all analyses. The weights have been formed using Inverse Probability Weighting method and they correct non-response in terms of sex, age, language, education, area, and marital status.

services (Acoba et al., 2022; Tilmon et al., 2023). Therefore, a more holistic perspective of access to healthcare requires attention. On the other hand, a holistic perspective poses challenges for interpreting the results in the Finnish healthcare system's context, which incorporates parallel healthcare systems. In Finland, healthcare is provided mainly via three channels 1) public healthcare organized by wellbeing service counties (until 2022 by municipalities and hospital districts), 2) private services organized by private sector, and 3) occupational health care organised by employers. (Tynkkynen et al., 2023.) This system as a whole unintentionally favours those belonging in higher socioeconomic groups through the mechanisms that patients can typically access healthcare faster via occupational health care and private medical clinics (OECD, 2021). Additionally, public and private service providers have different resources for providing care which needs to be acknowledged when creating an overall picture of how patients have been able to access healthcare.

Considering the appointment type patients have used is also meaningful, when assessing access to healthcare, as telehealth services have increased their popularity in all age groups in recent years (Sotkanet, 2017-2022; Kyytsönen et al., 2023). Even though the use of telehealth services is more common among younger age groups, but they are used by people of all ages. For example, in 2022 16 per cent of men and 10 per cent of women aged 75 or older had used telehealth services. (Kyytsönen et al., 2023.)

Use of telehealth services on the internet or in an application requires digital skills (Heponiemi et al., 2022). Moreover, poor digital skills limit the patients' options on contact channels to healthcare, which may hinder timely access to healthcare from the first contact to actually selecting the appointment type. For example, some public healthcare providers offer online symptom assessment services that include in some instances the option of booking an appointment with a healthcare professional after the assessment process.

Our study utilises a large-scale population survey data of adults aged 20 and older in Finland. The study sample is restricted to those who have used healthcare services in the past 12 months and had an appointment with a healthcare professional. The study aims to analyse the associations of characteristics of recent appointment (**type**: telehealth, phone call, in person; **place**: health centre, private medical clinic, occupational health care, hospital outpatient clinic; **care person**: physician, registered nurse, other) with perceived **access to healthcare without undue delay**. The analysis is adjusted for statistically significant socio-demographic factors and factors related to individual health. Since telehealth is particularly anticipated to enhance access to care in remote and sparsely populated regions, which often suffer from shortages of health care personnel, we additionally examine the moderating effect of the appointment type on the associations of access to care with a) care person and b) the municipality's degree of urbanisation. Access to healthcare is also examined by appointment type at wellbeing service counties.

Premises of the study

Majority (87.6%, 95% CI 86.9-88.3, N=19,715) of patients evaluated that they had been able to schedule their most recent appointment (non-urgent or urgent care) with a healthcare professional without undue delay. The study data was restricted to patients who

1. have in the past 12 months used healthcare services,
2. met a healthcare professional at a health centre, a private medical clinic, in occupational health care, or a hospital outpatient clinic, and
3. answered the question: "Were you able to make an appointment without undue delay?" and did not select "cannot say" as an answer.

Characteristics of the patients and the total sample representing Finnish population are presented in Appendix 1. The patients of our study differed from the Finnish population only slightly.

How the research was conducted 2/2:

The outcome variable was based on a question, which was pointed only for those who reported in a previous question having used healthcare services in the past 12 months: 'Were you able to make an appointment without undue delay?'. The question studied experiences on access to treatment concerning the most recent appointment with a healthcare professional (absolutely yes/ to some extent/ not really/ absolutely not/ cannot say). "Absolutely yes" and "to some extent" represented timely access to healthcare. Respondents who answered "cannot say" were excluded from the analysis.

The independent variables include gender, age group (register data), education group, digital skills, long-term illness and regular care needs, self-rated health, degree of urbanisation (register data), appointment place, appointment type, and last care person. Digital skills were asked in a question: "How would you rate your competence to use online services (on a computer or smartphone)?" (no competence/ low competence/ moderate competence/ high competence/ very high competence). Regular care needs were asked as follows: "Does your long-term illness or health problem require regular treatment or monitoring by a health care professional (e.g. a doctor or nurse)?" (yes/ no). The question was combined with the prior question: "Do you have any longstanding illness or longstanding health problem?" (yes/ no). Self-rated health is based on the question: "How would you describe your state of health at present?" (good/ fairly good/ average/ fairly poor/ poor). Answer options good and fairly good as well as fairly poor and poor were combined for analysis. Appointment type was asked as follows: "How did you manage your affairs?" (visiting in person (at the professional's reception)/ remotely by phone/ e-services (via video or chat).

Use of in person, phone call, and telehealth appointments

Patients' use of different appointment types differed by appointment place (Table 1). In person appointments were the most used appointment type. Phone appointments were somewhat more used at health centres and in occupational health care. Telehealth appointments (e.g., video or chat) were more often used in occupational health care.

Table 1. Last appointment type by care place

	Health centre	Private medical clinic	Occupational health care	Hospital outpatient clinic
In person (%)	87.6	90.2	74.1	92.9
Phone call (%)	10.6	5.3	13.8	6.6
Telehealth (%)	1.7	4.6	12.1	0.5
Total (n)	7,006	3,519	5,661	3,182

Data source: Healthy Finland Survey 2022 – 2023

Patients of different age groups used appointment types to a different degree (Table 2). Use of telehealth appointments decreased with age and telehealth appointments were almost inclusively used by those aged 20 to 60 years old. Use of phone appointments was more evenly distributed among different age groups.

Table 2. Last appointment type by age group

	20-40	41-60	61-70	71-80	81-89
In person (%)	80.6	82.9	89.5	93.0	93.8
Phone call (%)	10.6	11.2	9.4	6.6	5.8
Telehealth (%)	8.8	5.9	1.1	0.4	0.4
Total (n)	6,149	6,722	3,338	2,311	847

Data source: Healthy Finland Survey 2022 – 2023

Factors associated with access to healthcare

Characteristics of recent appointment were associated with perceived access to healthcare (Table 3). Patients, who had managed their last appointment remotely by phone or via telehealth, had more rarely accessed healthcare without undue delay compared to those who had visited in person. Patients of private medical clinics had accessed healthcare without undue delay on average 5.4 times and patients of occupational health care on average 3.5 times more often compared to patients of health centres. Those, who had met a physician or some other healthcare professional than a registered nurse at their last visit, had more rarely accessed healthcare without undue delay compared to those who had visited a registered nurse.

Some sociodemographic characteristics and one health-related factor were associated with timely access to healthcare (Table 3). Patients over 60 years old had accessed healthcare without undue delay more often compared to those aged 20-40-years. Patients, whose self-rated health was average or good, had accessed healthcare without undue delay more often compared to those whose self-rated health was poor. Healthcare was more often accessed without undue delay also by those who lived in semi-urban or rural municipalities compared to those who lived in urban municipalities. Gender, education group, digital skills, and long-term illness and regular care needs did not show statistically significant associations with perceived access to healthcare.

Table 3. Factors associated with perceived access to healthcare without undue delay (binary logistic regression model 2)

	OR (95% CI)	p-value
Age group		0.003
20-40	reference group	
41-60	1.15 (0.94-1.41)	0.164
61-70	1.38 (1.12-1.71)	0.003
71-80	1.29 (1.03-1.60)	0.025
81-89	1.67 (1.27-2.19)	<0.001
Digital skills		0.061
High or very high	reference group	
Moderate or lower	0.85 (0.72-1.01)	
Self-rated health		<0.001
Poor	reference group	
Average	1.46 (1.21-1.77)	<0.001
Good	2.14 (1.78-2.57)	<0.001
Degree of urbanisation		<0.001
Urban municipalities	reference group	
Semi-urban municipalities	1.43 (1.19-1.71)	<0.001
Rural municipalities	1.44 (1.20-1.73)	<0.001
Appointment type		<0.001
In person	reference group	
Phone call	0.61 (0.50-0.75)	<0.001
Telehealth	0.66 (0.44-0.97)	0.035
Appointment place		<0.001
Health centre	reference group	
Private medical clinic	5.36 (4.05-7.09)	<0.001
Occupational health care	3.48 (2.81-4.30)	<0.001
Hospital outpatient clinic	1.03 (0.87-1.23)	0.697
Care person		0.002
Registered nurse*	reference group	
Physician**	0.75 (0.63-0.89)	0.001
Another healthcare professional	0.66 (0.47-0.94)	0.020

* Registered nurse or public health nurse
 ** General practitioner or medical specialist

Data source: Healthy Finland Survey 2022 – 2023

Moderating effect of appointment type

The associations of care person ($p < 0.001$) and degree of urbanisation ($p < 0.001$) with timely access to care were moderated by appointment type. The influence of appointment type on these associations is demonstrated in Fig 1 and Fig 2.

Access to care without undue delay, when visiting in person, was most often reported by those who lived in semi-urban or rural municipalities. When visiting remotely by phone, access to care without undue delay was most often reported by residents of semi-urban municipalities. When visiting via telehealth, access to care without undue delay was distinctly more often reported by residents of urban and semi-urban municipalities. (Fig 1.)

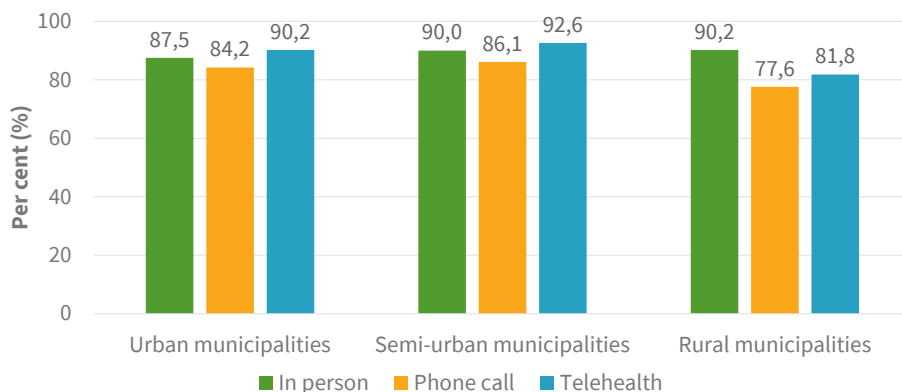


Figure 1. Access to care without undue delay grouped by appointment type and the municipality's degree of urbanisation (n= 19,368).

When visiting in person, access to care without undue delay was most often reported by patients who had met a registered nurse. A physician was most often visited without undue delay via telehealth. (Fig 2.)

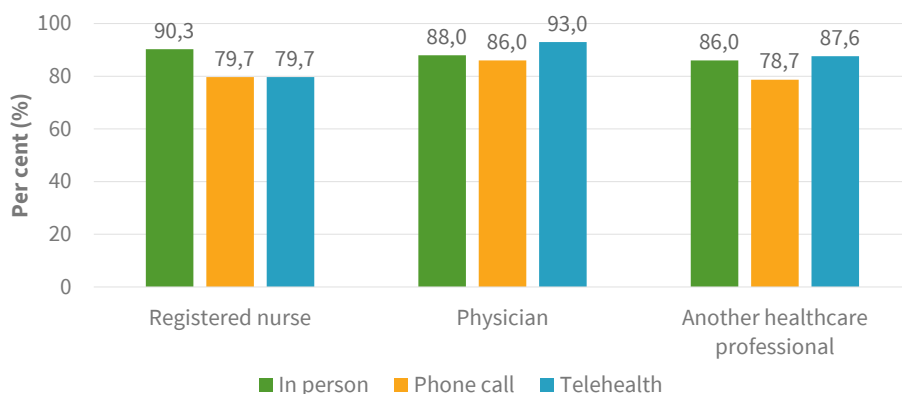


Figure 2. Access to care without undue delay grouped by appointment type and care person (n=18,874).

Access to healthcare at wellbeing service counties

Residents of Central Ostrobothnia, South Savo, and South Ostrobothnia reported timely access to healthcare most often (92-93%) concerning in person appointments. The residents of Pirkanmaa reported timely access to healthcare most often (93%) when visiting remotely by phone. Residents of Päijät-Häme, West Uusimaa, East Uusimaa, North Savo, North Ostrobothnia, and North Karelia reported timely access to healthcare most often (96-98%) when visiting via telehealth. Perceived access to healthcare by appointment type among patients of wellbeing service counties is presented in more detail in appendix 2.

Discussion of main results

Majority (85%) of patients had managed their last appointment in person. Phone calls were used by 10 per cent. Only five per cent had managed their last appointment via telehealth (e.g., video, chat). Telehealth appointments were mostly booked by 20-60-year-olds, while phone appointments were used by patients of all ages. Especially since the start of the COVID-19 pandemic, digitalisation of healthcare services has accelerated (Sotkanet, 2017-2022). According to a prior study, use of online services was at a high level in 2022 as third of men and two out of five women had used online social welfare or healthcare services, which was considerably more than in 2020 (Kyytsönen et al., 2023). This change has led to a phase, where setting digital channels as the primary channel to healthcare services has become a burning issue (Saario & Vuokko, 2023).

Those, who had managed their last appointment remotely by phone or via telehealth, had more rarely accessed healthcare without undue delay. In this analysis we did not have information regarding the prior use of services. In case the respondent has failed in attempts to get an in-person appointment in the first place and is therefore forced to get a remote appointment, this may explain his/her dissatisfaction to the process. The results may also indicate that telehealth appointment services may not be resourced well enough to meet the growing demand. On the other hand, it is possible that patients, who prefer to manage their affairs remotely, have higher expectations on the flexibility and pace of telehealth services. Moreover, use of digital appointments requires healthcare professionals to evaluate the patient's eligibility for digital services and to determine whether a physical examination is necessary (National Supervisory Authority for Welfare and Health). Therefore, it can be assumed that patients with complex conditions and comorbidities more often need to rely on one or more in person appointments.

In person visits were the primary appointment type in health centres, private medical clinics, occupational health care, and hospital outpatient clinics. However, the appointment types were not evenly distributed in these places providing care. More than every tenth appointment in occupational health care was managed via telehealth, whereas in private medical clinics every 20th appointment was managed via telehealth. In health centres and hospital outpatient clinics use of telehealth appointments was rare.

Access to healthcare without undue delay was considerably more often reported by patients who had met a healthcare professional at a private medical clinic or in occupational health care compared to health centres. Due to the Finnish healthcare system incorporating parallel healthcare channels, there are socioeconomic differences between patients of different care places (Holster et al., 2022; Koponen & Tynkkynen, 2023). According to a register study, employed individuals mainly use occupational health care, while the unemployed rely on health centres and simultaneously have more care needs compared to employed (Blomgren et al., 2022). Patients of occupational health care also typically have higher incomes (Holster et al., 2022) and they can get referred to public secondary healthcare faster through occupational health care (Holster et al., 2022; Koponen & Tynkkynen, 2023).

An earlier study indicated that the primary channel for most 15–79-year-olds is health centre (46%) or occupational health care (42%), while private medical clinics are the primary channel only for eight per cent (Nurmela, 2021). However, our results suggest that health centres are not able to answer to the healthcare needs of the patients timely enough from the patients' perspective leaving those, who are not entitled to occupational health care or who are unable to pay for private services, in a disadvantaged position. In 2021, more than every third reported having had to depend on a private medical clinic due to accessibility problems of the Finnish public healthcare (Nurmela, 2021). Health centres are especially relied on by people on low incomes and old-age pensioners (Nurmela, 2021), which underlines this disparity.

Access to healthcare without undue delay was more often reported by those who had met a registered nurse compared to a physician or another healthcare professional. The finding is in line with register data which shows that registered nurses and public health nurses (2022–2023: 94%) have managed to attend to patients within 14 days more often than physicians (2022: 68%, 2023: 62%) in primary healthcare (Avohilmo, 2023b). One of the reasons behind these results may be found from the noteworthy disproportion between physicians and nurses that exists in Finnish primary healthcare (OECD, 2018; Syrjä et al., 2020; Huhtakangas et al., 2023). This state of affairs may have encouraged the change in the roles of physicians and registered nurses as Finnish registered nurses have in international comparison taken up advanced roles from physicians in an extensive scale (Maier & Aiken, 2016). For example, in primary healthcare, registered nurses are the professional group mainly responsible for the assessment of the patients' need for treatment and its' urgency, while physicians participate to the decision-making when consulted (Mölläri & Marttila, 2023; Huhtakangas et al., 2023). It is also noteworthy that according to a prior study among health centre patients, four out of five saw that having first been directed to a registered nurse's appointment had not increased the difficulty of securing an appointment with a physician (Nurmela, 2021).

An appointment was easier to get without undue delay for a registered nurse when visiting in person, but when visiting via telehealth, patients had gotten a physician's appointment without undue delay more often compared to a registered nurse's appointment. The result might be related to the generally fast access to a physician's appointment via occupational health care (Koponen & Tynkkynen, 2023) since the proportion of telehealth appointments was bigger in occupational health care compared to other care places. Additionally, patients of occupational health care have been reported to be in better health (Blomgren et al., 2022; Holster et al., 2022), which may also allow to choose a physician's digital (phone, video, chat) appointment instead of having to visit in person, e.g., for a physical examination. On the other hand, according to register data, digital services delivered by physicians have increased substantially from 2019 to 2023 (Avohilmo, 2023a), even though among all professional groups the share of digital contacts of all contacts increased only 1.4 percentage points from 2019 to 2022 (Sotkanet, 2022). Therefore, it is possible that not enough resources have been directed to telehealth appointment services offered by registered nurses. A prior study also concluded that the utilisation of video appointments by registered nurses is rare (Kainiemi et al., 2023). These data support our interpretation that telehealth appointment services have been resourced better among physicians compared to registered nurses.

Discussion of sociodemographic and health related factors among those who have used healthcare services in the past 12 months

We found that patients' age, self-rated health, and residential area were associated with perceived timely access to healthcare among patients who had used healthcare services in the past 12 months and had an appointment with a healthcare professional. These results can only be interpreted in the context of the logistic regression model, which accounts for all included factors simultaneously. This holistic perspective on perceived access to healthcare includes patients of different service providers (health centre, private medical clinic, occupational health care, and hospital outpatient clinic). Hence, the results may be used to assess what kind of patients have perceived their access to healthcare timely in the context of the Finnish healthcare system as a whole, when keeping in mind the reported reliability issues (see paragraph 'The reliability of the results').

Patients over 60-years of age, especially over 80-year-olds, had accessed healthcare without undue delay slightly more often compared to 20-40-year-olds. A previous study indicated that four out of five of the working-age population use healthcare services in low to moderate extent and that belonging to this group is more likely if the person is on higher income, younger in age, does not receive social security benefits and has a stable attachment to work (Blomgren et al., 2023). Older adults may also more often have comorbidities which can evoke the positive association between older age and timely access to healthcare. Comorbidities were not accounted for in our analysis, if not for the variable self-rated health. Previously excessively long waiting times have more often been reported by older adults and those whose education level is low (Aalto et al., 2023); two groups who more typically rely on health centres (Nurmela, 2021). However, our analysis adjusted the effect of appointment place which might explain the discrepancy to some extent. Moreover, our study concentrated on good access instead of poor access.

Patients with good self-rated health had accessed healthcare without undue delay 2.1 times more often than those with poor self-rated health. People on low incomes have poor self-rated health more often compared to those whose income is higher (Karvonen et al., 2018). Therefore, the result might be related to the study population of which almost half had used the services of a private medical clinic or occupational health care. An OECD report stated that the Finnish healthcare system reinforces inequalities as occupational health care and private medical clinics offer faster access to healthcare for patients of higher socioeconomic groups (OECD, 2021).

It is also worth asking, should patients' self-rated health more systematically be considered when assessing the patients' need for treatment. The Finnish Health Care Act (2010) states that when a patient contacts primary healthcare, healthcare professional must conduct an individual assessment of the patient's need for treatment and its' urgency (51 §, 2023). The act does not require the professional to consider the patients' own assessment of their

situation unlike the Social Welfare Act (2014), which requires the social care professional to conduct the assessment of need for services in collaboration with the client and to consider in the assessment the wishes and opinions of the client (36 §, 2023). Then again, the Act on the Status and Rights of Patients (1992) states that the patient has to be cared in mutual understanding (6 §). On the other hand, due to the cross-sectional nature of the current study it is not known, whether those with good self-rated health had a better self-rated health already before receiving care or if the better self-rated health is a consequence of receiving timely care. It is also possible that patients with comorbidities do not receive integrated care, that could at a single appointment answer to all the patient's needs for services. This might result to having to wait for multiple appointments to be able to have all the care needs accounted for. In any case, understanding this association calls for further research.

Patients, who lived in semi-urban or rural municipalities, had accessed healthcare without undue delay more often compared to those who lived in urban municipalities. The discovery is not in line with a prior study reporting that residents of semi-urban and rural municipalities more often experience difficulties accessing healthcare due to care places having difficult opening hours and being hard to reach (Aalto et al., 2022). On top of this, services operated by private providers are more readily available for residents of urban municipalities. Consequently, the finding might be related to differences in the subjective experiences of patients living in municipalities of different degrees of urbanisation concerning what can be considered "without undue delay". Nevertheless, monitoring the level of perceived access to healthcare is necessary. Especially urban net migration municipalities should adequately keep up with the growing demand for services.

Residents of rural municipalities had distinctly more rarely accessed healthcare without undue delay when visiting remotely by phone or via telehealth compared to urban or semi-urban residents. A prior study, utilising population survey data from 2020, reached a similar result indicating that those, who lived in urban areas, used telehealth services more often compared to residents of rural municipalities (Vehko et al., 2022). These results raise questions like: 1) are there fewer digital services available for residents in rural areas? 2) are the residents of rural areas not aware of the digital services? and 3) are the existing digital services resourced well enough in rural areas?

Differences between wellbeing service counties concerning access to healthcare were moderate with the exception of some individual counties, where receiving care without undue delay was distinctly more often or more rarely reported by patients who had managed their appointment in person, remotely by phone or via telehealth.

The reliability of the results

Our study analysed perceived timely access concerning the last healthcare appointment reported by patients who have used healthcare services in the past 12 months. The study has two major limitations. First, it does not include people that have not been able to access healthcare even though they have tried. Secondly, we could not report whether some of the patients that had accessed healthcare during the last 12 months have after their last appointment tried to access healthcare again without success.

Socioeconomic differences in access to care in Finland are considerable in international comparison as a result of the multi-channel healthcare system (Aalto et al., 2022; OECD, 2021; Huhtakangas et al., 2023). Those in working life can access primary healthcare services via occupational health care free of charge (Koponen & Tynkkynen, 2023), while other population groups receive their primary healthcare services mainly from the public sector (Nurmela, 2021), which is burdened by long waiting times (Tynkkynen et al., 2023) and are moreover co-financed by patients (OECD, 2021).

Prior studies representing the Finnish population aged 15 to 79 years old reported that in 2021 only eight per cent and in 2017 11 per cent used private healthcare services as their primary channel to healthcare (Nurmela, 2021). Another population survey (30 and older) reported that in 2017 14 per cent of men and 12 per cent of women viewed private services as their primary channel to healthcare (Aalto & Koponen, 2018). In our study, 18 per cent of the patients had last used a private medical clinic. The discrepancy between these percentages may be related to another result of Nurmela (2021) that more than every third in

Finland reported having had to depend on a private medical clinic due to accessibility problems of public healthcare (Nurmela, 2021).

Implications for healthcare service policy

When evaluated based on the most recent appointment with a healthcare professional at a health centre, a private medical clinic, in occupational health care, or a hospital outpatient clinic, access to healthcare was generally perceived to be satisfactory. However, even among those who had been able to secure an appointment with a healthcare professional and who in general had used healthcare services in the past 12 months, every eight perceived that they had not accessed healthcare without undue delay. Therefore, we suggest implications based on the study findings to improve access to healthcare in the future:

- The allocation of resources for different appointment types (in person, phone call, and telehealth) should be responsive to demand and the demand level should be monitored regularly.
- Measures to improve timely access to healthcare in public health centres are needed to improve equity of care provision in Finland.
- Strategies to enhance timely access to physicians' appointments should be implemented. Registered nurses' role in telehealth appointment services (e.g., video, chat) should be strengthened.
- In general, timely access to healthcare professionals' appointments requires measures in urban municipalities, and timely access to phone and telehealth appointments in rural municipalities.

References

- Aalto, A-M., Ilmarinen, K., Muuri, A. & Ikonen, J. (2022.) Sosiaali- ja terveystalvveluiden saataavuus ja asiakaskokemukset. In Karvonen, S., Kestilä, L. & Saikkonen, P. (Eds.) Suomalaisten hyvinvointi. Finnish Institute for Health and Welfare. <https://urn.fi/URN:ISBN:978-952-343-996-2>
- Aalto, A-M., Ilmarinen, K. & Sinervo, T. (2023). Sosiaali- ja terveystalvvelujen käyttö ja kokemukset hoidosta: Talvvelujen saataavuus. Finnish Institute for Health and Welfare. Ilmiöraportti, Terve Suomi -työryhmä. <http://thl.fi/tervesuomi/tulokset>
- Abou Ali, A. N., Abdul Malak, O. M., Hafeez, M. S., Habib, S., Cherfan, P., Salem, K. M., Hager, E., Avgerinos, E., & Sridharan, N. (2023). Improved outpatient medical visit compliance with sociodemographic discrepancies in vascular telehealth evaluations. *Journal of vascular surgery*, 77(4), 1238–1244. <https://doi.org/10.1016/j.jvs.2022.11.039>
- Acoba, J. D., Yin, C., Meno, M., Abe, J., Pagano, I., Tamashiro, S., Fujinaga, K., Braun-Inglis, C., & Fukui, J. (2022). Racial Disparities in Patient-Provider Communication During Telehealth Visits Versus Face-to-face Visits Among Asian and Native Hawaiian and Other Pacific Islander Patients With Cancer: Cross-sectional Analysis. *JMIR Cancer*, 8(4), 1–12. <https://doi.org/10.2196/37272>
- Act on the Status and Rights of Patients (785/1992), <https://www.finlex.fi/fi/laki/ajantasa/1992/19920785>
- Assing Hvidt, E., Atherton, H., Keuper, J., Kristiansen, E., Lüchau, E. C., Lønnebakke Norberg, B., Steinhäuser, J., van den Heuvel, J., & van Tuyl, L. (2023). Low Adoption of Video Consultations in Post-COVID-19 General Practice in Northern Europe: Barriers to Use and Potential Action Points. *Journal of Medical Internet Research*, 25, e47173. <https://doi.org/10.2196/47173>
- Avohilmo (2023a). Perusterveydenhuollon hoitopääsyt 14 vuorokauden enimmäisajan toteutuminen. Updated 17th October 2023.

https://sampo.thl.fi/pivot/prod/fi/avohpaasy/pthjono01/fact_ahil_pthjono01?row=palveluntuottaja-26624.&column=odotusaika-25575.&column=aika-87596&column=yhteystapa-484427&column=ammatti-110048#

Avohilmo (2023b). Perusterveydenhuollon hoitopääsyn 14 vuorokauden enimmäisajan toteutuminen. Updated 17th October 2023. https://sampo.thl.fi/pivot/prod/fi/avohpaasy/pthjono01/fact_ahil_pthjono01?row=palveluntuottaja-26624.&row=ammatti-110048.109990.&row=aika-660839.835338.&column=odotusaika-25575#

Blomgren, J., Jäppinen, S. & Lahdensuo, K. (2022). Avosairaanhoidon palveluiden käyttö on vahvasti eriytynyt työmarkkinaaseman mukaan. *Suomen Lääkärilehti* 2022; 77, : e30509 www.laakarilehti.fi/e30509

Blomgren, J., Jäppinen, S., & Perhoniemi, R. (2023). Identifying user profiles of healthcare, social and employment services in a working-age population: A cluster analysis with linked individual-level register data from Finland. *PloS one*, 18(11), e0293622. <https://doi.org/10.1371/journal.pone.0293622>

Dawkins, B., Renwick, C., Ensor, T., Shinkins, B., Jayne, D., & Meads, D. (2021). What factors affect patients' ability to access healthcare? An overview of systematic reviews. *Tropical medicine & international health: TM & IH*, 26(10), 1177–1188.

Gizaw, Z., Astale, T., & Kassie, G. M. (2022). What improves access to primary healthcare services in rural communities? A systematic review. *BMC Primary Care*, 23(1), 1–16. <https://doi.org/10.1186/s12875-022-01919-0>

Hakanen, O., Tolvi, M., & Torkki, P. (2023). Cost analysis of face-to-face visits, virtual visits, and a digital care pathway in the treatment of tonsillitis patients. *American journal of otolaryngology*, 44(4), 103868. <https://doi.org/10.1016/j.amjoto.2023.103868>

Health Care Act (1326/2010), <https://www.finlex.fi/fi/laki/ajantasa/2010/20101326>

Heponiemi, T., Kaihlanen, A.-M., Kouvonen, A., Leemann, L., Taipale, S., & Gluschkoff, K. (2022). The role of age and digital competence on the use of online health and social care services: A cross-sectional population-based survey. *Digital Health*, 8, 20552076221074484. <https://doi.org/10.1177/20552076221074485>

Holster, T., Nguyen, L. & Häkkinen, U. (2021). The role of occupational health care in ambulatory health care in Finland. *Nordic Journal of Health Economics*. <https://doi.org/10.5617/njhe.8561>

Huhtakangas, M., Sinervo, T., Michelutti, P., Vitello, F., Kovacs, E., Chevillard, G. & Brinzac, M-G. (2023). Report of the state of art of desertification in Europe and ways to mitigate desertification. OASES. <https://oasesproject.eu/wp-content/uploads/2023/08/D5.3.-Report-of-the-state-of-art-of-desertification-in-Europe-and-ways-to-mitigate-desertification.pdf>

Kaihlanen, A. M., Laukka, E., Nadav, J., Närvänen, J., Saukkonen, P., Koivisto, J., & Heponiemi, T. (2023). The effects of digitalisation on health and social care work: a qualitative descriptive study of the perceptions of professionals and managers. *BMC health services research*, 23(1), 714. <https://doi.org/10.1186/s12913-023-09730-y>

Kainiemi, E., Kyytsönen, M., Kaihlanen, A.-M., Virtanen, L., Heponiemi, T. & Vehko, T. (2023). Sairaanhoidajat digitaalisen asiakastyön tekijöinä sosiaali- ja terveydenhuollossa. Finnish Institute for Health and Welfare, data brief 56/2023. <https://urn.fi/URN:ISBN:978-952-408-212-9>

Karvonen, S., Martelin, T., Kestilä, L. & Junna, L. (2018). Tulotason mukaiset terveyserot. In Kestilä, L. & Karvonen, S. (Eds.) *Suomalaisten hyvinvointi 2018*. Finnish Institute for Health and Welfare, teema 31/2018. <https://urn.fi/URN:ISBN:978-952-343-256-7>

Khairat, S., Haithcoat, T., Liu, S., Zaman, T., Edson, B., Gianforcaro, R., & Shyu, C. R. (2019). Advancing health equity and access using telemedicine: a geospatial assessment. *Journal of the American Medical Informatics Association: JAMIA*, 26(8-9), 796–805. <https://doi.org/10.1093/jamia/ocz108>

Koponen, P & Tynkkynen, L-K. (Eds.) (2023). Työterveyshuollon sairaanhoitopalvelut. Näkökulmia suomalaisen terveydenhuoltojärjestelmän oikeudenmukaisuuteen. Finnish Institute for Health and Welfare, Working paper 8/2023. <https://urn.fi/URN:ISBN:978-952-408-040-8>

Koskela, T., Ikonen, J. & Parikka, S. (2023). The adult population's well-being and health – Healthy Finland survey 2022: Access to a doctor is found increasingly difficult – psychological distress of working-age people has increased. Finnish Institute for Health and Welfare, statistical report: 45/2023. <https://urn.fi/URN:NBN:fi-fe2023062965896>

Kruse, C. S., Krowski, N., Rodriguez, B., Tran, L., Vela, J., & Brooks, M. (2017). Telehealth and patient satisfaction: a systematic review and narrative analysis. *BMJ open*, 7(8), e016242. <https://doi.org/10.1136/bmjopen-2017-016242>

Kruse, C., Williams, K., Bohls, J. & Shamsi, W. (2021). Telemedicine and health policy: A systematic review. *Health Policy and Technology*, 10(1), <https://doi.org/10.1016/j.hlpt.2020.10.006>

Kyytsönen, M., Vehko, T., Jormanainen, V., Aalto, A., & Mölläri, K. (2021). Terveydenhuollon etäasioinnin trendit vuosien 2013–2020 Avohilmon aineistossa. Finnish Institute for Health and Welfare, data brief 13/2021. <http://urn.fi/URN:ISBN:978-952-343-639-8>

Kyytsönen, M., Aalto, A., Sääksjärvi, K. & Vehko, T. (2023). Digitaaliset palvelut ja digitaalinen asiointi. Finnish Institute for Health and Welfare. Ilmiöraportti, Terve Suomi -työryhmä. <http://thl.fi/tervesuomi/tulokset>

Maier, C. B., & Aiken, L. H. (2016). Task shifting from physicians to nurses in primary care in 39 countries: a cross-country comparative study. *European journal of public health*, 26(6), 927–934. <https://doi.org/10.1093/eurpub/ckw098>

Mölläri, K. & Marttila T. (2023). Hoitoonpääsy perusterveydenhuollossa keväällä 2023. Kii-reettömistä lääkärikäynneistä puolet toteutui viikossa. Finnish Institute for Health and Welfare, statistical report 25/2023. <https://urn.fi/URN:NBN:fi-fe2023052347204>

National Supervisory Authority for Welfare and Health. Etäpalvelut sosiaali- ja terveydenhuollossa. Referred to on 29th November 2023. <https://valvira.fi/sosiaali-ja-terveydenhuolto/etapalvelut>

Nurmela, S. (2021). Väestökysely hoitoon pääsystä 2021. Lääkäriliitto & Kantar TNS, raportti. https://www.laakariliitto.fi/site/assets/files/5227/220408258_laakariliitto_vaestokysely_2021_yhteenveto.pdf

OECD (2021). Finland: Country Health Profile 2021: State of Health in the EU. European Observatory on Health Systems and Policies. OECD Publishing, Paris, <https://doi.org/10.1787/2e74e317-en>

Pennanen, P., Jansson, M., Torkki, P., Harjumaa, M., Pajari, I., Laukka, E., Lakoma, S., Härkönen H., Verho, A., Martikainen, S., Kouvonen, A. & Leskelä, R-L. (2023). Digitaalisten palvelujen vaikutukset sosiaali- ja terveydenhuollossa. Valtioneuvoston selvitys- ja tutkimustoiminnan julkaisusarja 52/2023. <http://urn.fi/URN:ISBN:978-952-383-059-2>

Saario, M. & Vuokko, R. (2023). Digitalisaatio tuo joustoa ja turvaa sosiaali- ja terveydenhuollon palvelujen saatavuutta. Ministry of Social Affairs and Health, column. <https://stm.fi/-/digitalisaatio-tuo-joustoa-ja-turvaa-sosiaali-ja-terveydenhuollon-palvelujen-saatavuutta>

Saastamoinen, P. (2023). Terveyskeskusten lääkäritilanne 2022. The Finnish Medical Association, PowerPoint. Published 26th January 2023. https://www.laakariliitto.fi/site/assets/files/5223/2022_terveyskeskusten_laakaritilanne_final3.pdf

Social Welfare Act (1301/2014), <https://www.finlex.fi/fi/laki/ajantasa/2014/20141301>

Sotkanet (2017-2022). Indicators: 1) E-service appointments, % of outpatient appointments in primary health care, 2) Has used digital services in communication with a social welfare or health care professional, (%) of service users. Referred to 1st of November 2023. <https://sotkanet.fi/sotkanet/en/taulukko/?indicator=szbM9bTWtSgHAA==®ion=s07MtDZxBwA=&year=sy5zttY1stY1BgA=&gender=t&abs=f&color=f&buildVersion=3.1.1&buildTimestamp=202309010633>

Sotkanet (2022). E-service appointments, % of outpatient appointments in primary health care. <https://sotkanet.fi/sotkanet/en/taulukko/?indicator=sZMTQYA®ion=s07MtDZxBwA=&year=sy5ztjbW0zUEAA==&gender=t&abs=f&color=f&buildVersion=3.1.1&buildTimestamp=202309010633>

Sumarsono, A., Case, M., Kassa, S., & Moran, B. (2023). Telehealth as a Tool to Improve Access and Reduce No-Show Rates in a Large Safety-Net Population in the USA. *Journal of urban health: bulletin of the New York Academy of Medicine*, 100(2), 398–407. <https://doi.org/10.1007/s11524-023-00721-2>

Syrjä, V., Parviainen, L. & Niemi, A. (2020). Outpatient care arrangements at health centres 2019 : outsourcing, personnel, work inputs and transfers of tasks. Finnish Institute for Health and Welfare, data brief 21/2020. <https://urn.fi/URN:ISBN:978-952-343-532-2>

Terho, H. & Tikkanen, J. (2023). Etävastaanotto. Lääkäriin käsikirja. Published 14th November 2023.

Tevameri, T. (2022). Labour Force and Companies in the Health and Social Services Sector. Ministry of Economic Affairs and Employment of Finland, sector reports 2/2022. <https://urn.fi/URN:ISBN:978-952-327-626-0>

Tilmon, J. C., Farooq, H., Metzger, C. M., Schlecht, S. H., & Klitzman, R. G. (2023). Telehealth in Orthopedic Sports Medicine: A Survey Study on Patient Satisfaction and Experience. *Telemedicine & E-Health*, 29(6), 943–946. <https://doi.org/10.1089/tmj.2022.0193>

Tynkkynen, L-K., Keskimäki, I., Karanikolos, M. & Litvinova, Y. (2023). Finland: Health System Summary 2023. In Section Maresso, A. (Ed.) European Observatory on Health Systems and Policies. <https://iris.who.int/bitstream/handle/10665/366710/9789289059398-eng.pdf?sequence=1>

Vehko, T., Kyytsönen, M., Ikonen, J., Koskela, T., Kainiemi, E., & Parikka, S. (2022). The use of electronic health and social care services in urban and rural areas in Finland. *Finnish Journal of EHealth and EWellfare*, 14(3), 309–325. <https://doi.org/10.23996/fjhw.114017>

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Appendix 1. Characteristics of the study sample and the total sample

	Study sample*		Total sample	
	%	n	%	n
Age group		19,715		28,153
20-40	31.3	6,170	33.0	9,279
41-60	34.5	6,802	30.6	8,617
61-70	17.4	3,436	16.3	4,598
71-80	12.3	2,416	13.5	3,807
81-98	4.5	891	6.6	1,852
Gender		19,277		26,882
Male	46.8	9,028	48.7	13,082
Female	52.8	10,176	50.9	13,672
Other	0.4	73	0.5	128
Education group		19,436		27,518
Low	40.0	7,770	42.2	11,611
Middle	31.1	6,041	30.4	8,367
High	28.9	5,624	27.4	7,540
Digital skills		19,356		26,903
High or very high	64.4	12,461	61.0	16,422
Moderate or lower	35.6	6,895	39.0	10,481
Degree of urbanisation		19,715		28,153
Urban municipalities	73.2	14,422	72.8	20,496
Semi-urban municipalities	11.8	2,334	14.9	4,195
Rural municipalities	15.0	2,960	12.3	3,462
Long-term illness and regular care needs		19,405		27,160
No long-term illness	39.9	7,743	43.0	11,679
Long term illness without regular care needs	21.7	4,218	21.3	5,785
Long term illness with regular care needs	38.4	7,444	35.7	9,696
Self-rated health		19,613		27,584
Poor	10.5	2,065	10.2	2,809
Average	26.5	5,207	26.6	7,351
Good	62.9	12,342	63.2	17,425
Appointment type		19,368		
Visit in person	85.0	16,461		
Phone call	9.9	1,921		
Telehealth	5.1	986		
Appointment place		19,715		
Health centre	36.5	7,193		
Private medical clinic	18.1	3,560		
Occupational health care	29.1	5,734		

Hospital outpatient clinic	16.4	3,228
Care person		19,104
Registered nurse**	21.8	4,174
Physician***	73.8	14,103
Another healthcare professional	4.3	828

* The study sample refers to those who 1) have used healthcare services in the past 12 months, 2) met a healthcare professional at a health centre, a private medical clinic, in occupational health care, or a hospital outpatient clinic, and 3) answered the question: "Were you able to make an appointment without undue delay?" and did not select "cannot say" as an answer.

** Registered nurse or public health nurse

*** General practitioner or medical specialist

Data source: Healthy Finland Survey 2022 – 2023

Appendix 2. Good perceived access to healthcare by appointment type among patients of wellbeing service counties*

	Visit in person		Phone call		Telehealth	
	%	n	%	n	%**	n
All wellbeing service counties	88.2	16,319	83.3	1,927	89.9	935
Central Ostrobothnia	92.5	713	84.5	70		24
South Savo	92.3	723	84.1	83		29
South Ostrobothnia	92.3	719	86.5	45		29
North Savo	91.1	823	84.7	94	95.7	32
Kanta-Häme	90.2	796	89.1	102	93.3	31
North Ostrobothnia	89.7	791	88.2	65	96.0	38
Lapland	89.2	699	85.5	68	86.0	41
Satakunta	89.0	788	81.3	61	82.2	33
Pirkanmaa	89.0	846	93.0	86	91.6	56
Central Finland	88.4	794	80.8	75	83.5	50
Southwest Finland	87.8	797	81.8	89	84.7	43
Vantaa and Kerava	87.7	684	77.6	90	86.3	79
Ostrobothnia	87.5	646	77.5	62		17
City of Helsinki	87.1	829	86.7	116	86.3	69
Päijät-Häme	87.0	731	81.9	85	97.7	53
Central Uusimaa	86.6	655	71.1	147	90.6	85
West Uusimaa	86.5	780	80.1	110	97.7	32
Kymenlaakso	86.2	714	87.7	62		22
North Karelia	85.2	659	83.3	116	96.0	51
South Karelia	85.1	802	85.3	90	94.6	41
East Uusimaa	84.8	736	88.3	93	96.5	41
Kainuu	83.4	592	83.4	120	67.7	39

*Data analysed with sample weights designed for wellbeing service counties

**value hidden if n<30

Data source: Healthy Finland Survey 2022 – 2023