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DIGIDIA-project: Experiences of video-enabled receptions for prevention of type 2 diabetes

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Abstract

The time of the COVID-19 epidemic emphasized the need for the development and implementation of remote receptions and digital services, as preventive work was reduced, and people decreased their in-person visits in health care due to fear of infections. In 2020, the diagnoses of type 2 diabetes (T2D) decreased, despite the fact that diabetes is known to be increasing. DIGIDIA (Promoting Digital Skills in the Low Labour Market-Driven Diabetes Patients) project aimed to respond to this need. The project focused on developing digital health competence, health literacy, and practices that enable preparation for future unforeseen events.

The project recruited adults from Tampere who were at risk of T2D, had prediabetes, or recently received a diagnosis of type 2 diabetes (n=60). Participants were provided with *a digital learning environment, workshops*, and *video-enabled receptions*. This article presents the use of video reception and user experiences (n=52) in the project.

The participants appreciated all organized activities. All but one participant felt that video-enabled reception suited them well. The majority of participants (87%) expressed a desire for using video reception again in health care settings. However, it was pointed out that this form of telemedicine might not be suitable for everyone, and concerns about data security were also raised.

As a conclusion, citizens were ready to use video-enabled services in healthcare settings. The use of video receptions should be increased in the management of type 2 diabetes (T2D).

Keywords: video reception, telemedicine, type 2 diabetes

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Introduction

In recent years, digital services have become an integral part of society and have also gained a foothold in healthcare services. The time of the COVID-19 epidemic emphasized the need for the further development and implementation of digital services, which can be utilized in unstable and sudden situations like those seen in healthcare services during the pandemic [1].

In Finland, over 20,000 diagnoses of type 2 diabetes (T2D) are made annually, and the number of individuals with T2D has increased 2.5 times between 2000 and 2017 [2]. However, in 2020, diagnoses decreased by 21 percent [3]. The decline in incidence is not likely a result of improved public health but rather a consequence of the restrictions caused by the COVID-19 pandemic. During the pandemic, healthcare resources were redirected from the management of chronic illnesses and preventive work to the treatment of acute respiratory infections. Moreover, some patients at risk hesitated to attend medical appointments due to fear of COVID-19.

Digitalization has led to new digital approaches in the health promotion and care of T2D management such as video-enabled receptions. T2D patients have generally reported satisfaction with video receptions, especially in terms of saving on travel expenses [4], travel time, and reduced waiting times [4,5]. Also, clinical outcomes, such as HbA1c, lipoprotein levels, and blood pressure, remained uncompromised over time when comparing video reception and standard diabetes care [4].

Healthcare professionals have expressed overall satisfaction with telemedicine in general. According to the perspective of healthcare professionals, telemedicine has potential to support (99.5%) or even replace (43%) in-person visits. However, satisfaction with their own telemedicine practice was mostly perceived as only moderately satisfactory, and they also experienced stress (45.5%) due to the additional efforts caused by telemedicine [6].

The limitation of telemedicine has been identified in the difficulty of conducting comprehensive physical examinations [4,5]. Conversely, approximately half of healthcare professionals felt comfortable or strongly comfortable without the ability to conduct a physical interview with the patient, while less than a third indicated discomfort [6]. It is clear that telemedicine may not be the most sensible or feasible option for all cases. However, in scenarios such as T2D, physical presence is not necessary in every visit. Nevertheless, certain conditions, for example, neuropathy in the feet, cannot be effectively examined via video [5].

From the patients' perspective, barriers have included a lack of confidence and skills with technology. Patients would have required assistance with their own technology and devices, and practicing video calls would have been beneficial [7]. However, limited technology skills are not always raised as a barrier. According to a systematic review by Hall et al. (2022), the adoption of technology has been relatively easy [4]. Other concerns have included receiving less attention, lack of eye contact (due to camera angle), barriers to speaking up and asking questions, and difficulty establishing a provider-patient relationship, especially in the absence of a prior relationship [5].

A Two-year project DIGIDIA was launched to support the digital health literacy of sixty residents at risk of T2D, prediabetes or recently diagnosed with T2D. The project was funded through the REACT-EU instrument as part of the measures implemented by the European Union in response to the COVID-19 pandemic. The aim of the project was to develop digital health competence and health literacy of

participating citizens. In this article, we describe patient experiences related to video-enabled healthcare receptions.

Methods and project activities

The DIGIDIA project involved 60 adults living in Tampere, with an elevated risk of T2D, those with prediabetes, or those who had recently received a diagnosis of T2D. Project participants' median age was 55 years (range 24-64), with 68.3% being women, 30% men, and 1.7% identified as other. Participants were recruited through preventive diabetes counseling and adult counseling services of primary care. Project provided *a digital learning environment, workshops,* and *video-enabled reception* to achieve the aim of enhancing participants' digital competence and health literacy. Participants were facilitated to take part in workshops where they received guidance and practiced skills. During workshops, they had the opportunity to engage in simulated video reception with a public health nurse.

Additionally, after the project workshops, participants received their individual genomic test result, the Polygenic Risk Score (PRS), indicating the risk level of T2D based on their genome. The results of the genomic test were given at a video reception. A 45-minute time slot was reserved for each video reception, but the sessions varied between 30-40 minutes. Initially, the session involved a physician and a patient, with the physician delivering the PRS result. Following the physician's consultation, a familiar public health nurse joined the session to provide counselling on healthy lifestyle habits according to individual needs. At the end of the session, the nurse inquired about the patient's experience of the video reception. Altogether 52 participants provided feedback about the video reception. Using three questions (*"How do you feel about this video reception being suitable for you*?", *"Would you like to use this type of healthcare video reception again?",* and *"Would you like to say anything else about video receptions?"),* the attending nurse asked for opinions verbally at the end of the video sessions. Demographics information was not collected. The data was analyzed by using inductive content analysis by extracting themes relevant to the research questions.

Results

Everyone except one respondent expressed satisfaction with this virtual interaction. Using a Finnish school grade scale from 4 to 10, 86% assigned a grade of 9 or 10, indicating an excellent rating. Eight percent gave a grade of 8, indicating a good rating. Only two respondents gave a grade 7, satisfactory. One respondent was not satisfied and rated a grade 5. The majority of participants (87%) expressed a desire to use video-enabled receptions again in the context of healthcare. Respondents described that video receptions would save time and money. They mentioned advances like attending from home or even from a summer cottage.

> *"A brilliant invention. It saves everyone's time."*

> *"I felt more relaxed when I was at home."*

Video reception was considered as a good service, and it operated very well. Respondents encountered no technical issues. The link provided in the email was clear and easy to open. Both sound and image functions worked well. Video reception was perceived as a smooth and functional practice.

> *"I was positively surprised."*

> *"In such cases [without measurements] this is appropriate."*

Respondents expressed a desire for increased implementation of video receptions, hoping for more extensive utilization. They believed that individuals would become accustomed to the service. Digital opportunities would enable extended operating hours. They hoped that both physicians and nurses would have more video reception slots.

> *"This is good progress in services."*

> *"I just thought it would be a good idea to have more of these remote options to get things moving faster."*

Respondents perceived video reception as surprisingly interactive and natural. The benefit was that the physician and nurse were visible on the screen, creating a sense of closeness.

> *"You feel like you're being taken care of when you see the face."*

However, some believed that video reception is not suitable for everyone; it is not the same as an in-person visit. Concerns were also expressed about data security and technical challenges.

> *"Can not replace face-to-face reception."*

Discussion

The patient satisfaction was high in DIGIDIA video reception. Same result has been described in many studies as Hall et al.'s (2022) systematic review stated [4]. The video reception was described in DIGIDIA as surprisingly easy, time-saving, interactive, and viewed as a promising development in healthcare. The sense of closeness was also emphasized. Same kind of results have been in previous studies where patients' preferences for telemedicine have been, among other things, the personal relationship with the physician, and saving time [8,9]. Sometimes, the lack of digital competence is presented as an obstacle to the use of digital services [7]. However, within the DIGIDIA project, it is observed that the majority of patients are ready and capable of adopting a new video reception service quite easily. The video reception should be available as one option, while in-person receptions are still necessary in various situations, such as when a physical examination is required. It is important for patients to have the ability to choose the service format themselves [10].

A one proposal is to implement video receptions into already existing patient and care relationships. When patient-provider relationship is reliable and communication works well, healthcare professional can, through a proactive and practical approach, assist patients with new services. The other proposal could be suitable for acute situations. In Finland, a patient receives, if necessary, a physician appointment after triage conducted by a nurse. A part of appointments could be reserved for video receptions. Nevertheless, the well-being of healthcare professionals needs to be especially carefully considered as digital services become more and more prevalent, as healthcare professionals have raised concerns about the increasing workload with digital services [11].

Positive experiences from DIGIDIA project encourage the increased adoption of video receptions in primary healthcare for the management and prevention of T2D.

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Conflict of interest statement

The authors have no conflicts of interest.

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