

The Future of Online Video Consultations in Primary Care: A Qualitative Study

Maria HÄGGLUND^{a, b, 1}, Nadia DAVOODY^b, Anna KRISTENSSON EKWALL^c and Nasim FARROKHANIA^d

^a Department of Women's and Children's Health, Uppsala University, Sweden

^b Health Informatics Center, Department of Learning, Informatics, Management and Ethics, Karolinska Institutet, Sweden

^c Department of Health Sciences, Lund University, Sweden

^d Department of Clinical Science and Education, Karolinska Institutet, Sweden

ORCID ID: Maria Hägglund <https://orcid.org/0000-0002-6839-3651>

ORCID ID: Nadia Davoody <https://orcid.org/0000-0003-1813-8529>

ORCID ID: Anna Kristensson Ekwall <https://orcid.org/0000-0002-8768-2467>

ORCID ID: Nasim Farrokhnia <https://orcid.org/0000-0002-2064-137X>

Abstract. The COVID-19 pandemic has significantly increased the use of remote services such as video consultations (VCs). In Sweden, private healthcare providers offering VCs have grown substantially since 2016 and have been controversial. Few studies have focused on physicians' experiences of providing care in this context. Our overall aim was to study physicians' experiences of VCs, here focusing on their suggestions for future improvements. Twenty-two semi-structured interviews were performed with physicians working for an online healthcare provider in Sweden, and analyzed through inductive content analysis. Two themes emerged related to desired future improvements of VCs; blended care and technical innovation.

Keywords. Video Consultations, Telemedicine, Primary Care

1. Introduction

In the wake of the COVID-19 pandemic, telemedicine has become a necessity in healthcare [1,2]. OECD defines telemedicine as “the use of ICT to deliver health care (clinical services only) at a distance” [3], with three subgroups;

- (1) telemonitoring, or remote patient monitoring, tele homecare, i.e. use of information and communication technologies (ICTs) to monitor health status at a distance,
- (2) store and forward, i.e. an encounter or consult aided by asynchronous transmission of clinical data, and
- (3) interactive telemedicine, or video consultations (VCs), real-time teleconsultations, virtual visits, i.e. synchronous encounter or consult at a distance using ICTs.

In this paper we focus on the third type of telemedicine and we will use the term video consultations (VCs), which has been used extensively in the literature [2,4,5], to

¹ Corresponding Author: Maria Hägglund, Department of Women's and Children's Health, Uppsala University, Dag Hammarskjölds väg 14B, 1st floor, 752 37 Uppsala, Sweden; maria.hagglund@kbh.uu.se.

distinguish these types of telemedicine solutions from e.g. chat functions [6], and telemonitoring [7].

In 2015, a new type of telemedicine service emerged in Sweden – patient-initiated, first-line VCs with primary care. Private online healthcare providers led the implementation, providing exclusively VCs, and were controversial. They were criticized on several points; draining the tax funded Swedish healthcare system by offering unnecessary care [8], poor quality due to difficulties assessing patients online, and unequal access to care. Limited research has however been performed regarding this novel form of care. Studies focusing on patients' experiences, indicate that patients' appreciate the easy access to care and are overall satisfied with the care they receive [9], similarly to other studies of VCs [10]. Elderly patients in Sweden have however expressed ambivalence towards VCs [11], confirmed by the annual "The Swedes and the Internet" survey which indicate that older age groups fall behind in the adoption of eHealth and VCs [12]. In a UK study, VCs were popular among some patients and staff, but also proved challenging to implement in "a busy and financially stretched acute hospital setting" [13]. In a Norwegian study of general practitioners' experiences of VCs during the Covid-19 pandemic, they expressed that VCs were more useful when they already knew the patient [4]. The context of online healthcare providers is however very different, and few studies have focused on healthcare professionals' experiences of this context. In this study, we interviewed physicians working at a Swedish private digital care provider (KRY AB). The aim of this study is to explore what improvements physicians' who have experiences of providing care through VCs for an online healthcare provider, would like for the future.

2. Methods

Qualitative interviews were performed with 22 physicians working for a Swedish online healthcare provider. The consolidated criteria for reporting qualitative research (COREQ) guideline [14] was used for reporting. The research team consist of 4 PhDs, all women, with experience of qualitative research. NF is also a medical doctor, and was at the time employed by the online healthcare provider from where study participants were included. AKE is a registered nurse, working both clinically and as a researcher.

The online healthcare provider delivers VCs with nurses, physicians, and psychologists available through a web-based and mobile platform in Sweden, making VCs possible via chat or video directly on a smartphone. Physicians have the choice to work from home or from the main office. All physicians working from home are provided with a pre-installed laptop to ensure centrally controlled security and updates. In addition to the VC applications, the physicians have access to a communication tool for collegial support and second opinions, the Swedish National Patient Overview (NPO) giving access to patients' electronic health records from across Sweden [15], and clinical guidelines for online care.

A convenience sample of volunteer participants were included in the study. Recruitment began in January 2019; information about the study was sent out by an administrator via email to all physicians at the healthcare provider, clearly stating that participation was voluntary. Thirty-three physicians expressed an interest; 11 later declined to do so for various reasons, lack of time being the most prominent. Table 1 gives an overview of the study participants' characteristics.

Even gender distribution was achieved with 11 female and 11 male participants. The majority of our study participants worked part-time (4-20 h/week) with VCs, and part time in traditional care. A few worked exclusively with VCs, part or full-time. Of these, a few had retired and now worked online from home. The majority worked in Sweden, but a few worked from abroad. Experience of working with VCs ranged between 5 months and 3 years (median 1 year).

Table 1. Overview of the 22 study participants' characteristics

Characteristic	Number (%)
Age	
30-39	5 (23%)
40-49	5 (23%)
50-59	4 (18%)
60-69	5 (23%)
70-79	3 (13%)
Level of medical training	
Specialist	15 (68%)
Resident	3 (14%)
Not specialist or resident	4 (18%)

A semi-structured interview guide was designed (MH, AKE and NF), tested and refined (MH, AKE and a health informatics master student). Here, we focus on the participants answers to our final questions regarding any improvements they would like to see in the future. Interviews were performed February-April 2019, before the pandemic increased the use of VCs dramatically. Each interview lasted between 30 minutes and 1 hour. Three researchers performed the interviews (MH, AKE and a health informatics masters student). The interviewer introduced themselves at the start of the interview, describing their interest in the topic at hand and experience of clinical work. Only the interviewer and the study participant were present during the interview. All interviews were performed online, recorded and later transcribed.

Data analysis was performed by all four co-authors (MH, AKE, ND and NF), following an inductive content analysis approach according to Graneheim and Lundman [16]. All authors read through all interviews, and then took responsibility for coding a subset of the interviews. Frequent meetings were held where codes were discussed and compared, and categories and themes emerged, until consensus was reached. Ethical approval for the study was granted by the Swedish Ethical Review Authority (Dnr: 2018/2318-31/5).

3. Results

Two themes related to future improvements emerged; blended care, and technical innovation.

In education, the term blended learning refers to education provided both online and on campus, to reap the benefits of both contexts [17]. The respondents in our study also expressed a need for further integration between digital and physical care, i.e. **blended care**.

"I think there needs to be a physical connection, so you do not only offer digital care to patients. It's better for patients if they can handle all their health issues, so if they are unable to get help online, that they can be referred to a physical appointment, but still within the same healthcare provider..." (Interview 22)

In addition to increased integration of online services within the private healthcare providers that dominated the online care market at the time of this study, participants also believed that in the future the regions, or public healthcare providers, would increase their offers of VCs, integrated with their regular services.

“Yes, and I actually think that this is part of the future of healthcare, in public healthcare, that such solutions will be integrated. The private online care providers have progressed fast and it will be integrated into public care safely.” (Interview 22)

Of course, at the time writing this, we know that the Covid-19 pandemic has sped up this process, and VCs have now been implemented throughout Swedish public healthcare, both primary and secondary care.

In addition to the more organizational improvements of integrating physical and online care, our participants also expressed a need for **technical innovation**. Most participants expressed that digital care will be improved by ancillary technologies that can eliminate digital care limitations, and strengthen the entire digital care process.

“I hope for more analyzes that we can rely on. For example, a standard temperature gauge so we know at any time what the temperature is. There are also quick analyzes that can be linked to the mobile as well.” (Interview 10)

4. Discussion

The physicians wanted to see more integration between online and traditional healthcare, to make telemedicine a normalized part of their everyday clinical work. Considering the development during the pandemic, this is now the case. In the USA, telemedicine – the use of phones and video visits – soared from fewer than 2% of primary care visits in 2019 to more than 35% by April 2020 [18]. In Sweden, the private online care providers increased their visits with 60% during the first months of the pandemic, but in parallel 19 (of 21) regions implemented their own telemedicine solutions which have been used extensively. In Region Stockholm, the use of the regions own solution for VCs (Alltid öppet) soared from 3000 visits in January 2020 to 36000 visits in April 2020 [19], and the adoption curve seem to have followed the increase of COVID cases [20].

In this study, we only interviewed physicians who worked fully (few individuals) or partly (the majority) for a private online healthcare provider. The needs for improvements they identified may be different from those of physicians who work with telemedicine or VCs as an integrated part of their work at a traditional primary care center. However, all of the participants had experience of working in traditional, physical and public health care and reflected on the differences between the contexts. Yet, further research is required into the differences between introducing VCs in a traditional healthcare organization and in an exclusively online organization.

5. Conclusion

The pandemic year 2020 has proven, nationally and internationally, to lead to a significant increase in the implementation and integration of VCs, in traditional care systems. Key aspects regarding the future of VCs as highlighted by our participants was the need for more collaboration between digital and physical care, that digital care should be offered by regions (public healthcare providers), and that technical improvements are needed to facilitate online assessments of patients.

Acknowledgement

AFA Insurance provided funding for the analysis (MH, ND) through the research project “ePrIm” (190210).

References

- [1] Webster P. Virtual health care in the era of COVID-19, *The Lancet*, vol. 395, no. 10231, pp. 1180–1181, 2020, doi: [https://doi.org/10.1016/S0140-6736\(20\)30818-7](https://doi.org/10.1016/S0140-6736(20)30818-7).
- [2] Greenhalgh T, Wherton J, Shaw S, and Morrison C. Video consultations for covid-19, *BMJ*, vol. 368, 2020, doi: [10.1136/bmj.m998](https://doi.org/10.1136/bmj.m998).
- [3] Hashiguchi T C O. Bringing health care to the patient, *OECD Health Working Papers*, no. 116, 2020, doi: <https://doi.org/10.1787/8e56ede7-en>.
- [4] Johnsen TM, Norberg BL, Kristiansen E, Zanaboni P, Austad B, Krogh FH, Getz L. Suitability of Video Consultations During the COVID-19 Pandemic Lockdown: Cross-sectional Survey Among Norwegian General Practitioners, *J Med Internet Res*, vol. 23, no. 2, p. e26433, 2021, doi: [10.2196/26433](https://doi.org/10.2196/26433).
- [5] James HM, Papoutsis C, Wherton J, Greenhalgh T, Shaw SE. Spread, Scale-up, and Sustainability of Video Consulting in Health Care: Systematic Review and Synthesis Guided by the NASSS Framework., *J Med Internet Res*, vol. 23, no. 1, p. e23775, Jan. 2021,
- [6] Cajander Å, Larusdottir M, Hedström G, The effects of automation of a patient-centric service in primary care on the work engagement and exhaustion of nurses, *Quality and User Experience*, vol. 5, no. 1, p. 9, 2020, doi: [10.1007/s41233-020-00038-x](https://doi.org/10.1007/s41233-020-00038-x).
- [7] Ding H, Chen SH, Edwards I, Jayasena R, Doecke J, Layland J, Yang IA, Maiorana A. Effects of Different Telemonitoring Strategies on Chronic Heart Failure Care: Systematic Review and Subgroup Meta-Analysis. *J Med Internet Res*. 2020 Nov 13;22(11):e20032. doi: [10.2196/20032](https://doi.org/10.2196/20032).
- [8] Ellegård LM, Kjellson G. Nätvårdsanvändare i Skåne kontaktade oftare vårdcentral, *Läkartidningen*, vol. 116, no. november, pp. 1–5, 2019. [In Swedish]
- [9] Gabriellsson-Järhult F, Kjellström S, Josefsson KA. Telemedicine consultations with physicians in Swedish primary care: a mixed methods study of users’ experiences and care patterns, *Scandinavian Journal of Primary Health Care*, vol. 39, no. 2, pp. 204–213, Apr. 2021
- [10] Liddy C, Drosinis P, Keely E. Electronic consultation systems: worldwide prevalence and their impact on patient care—a systematic review, *Family Practice*, vol. 33, no. 3, pp. 274–285, Jun. 2016
- [11] Nymberg VM, Bolmsjö BB, Wolff M, Calling S, Gerward S, Sandberg M. “Having to learn this so late in our lives...” Swedish elderly patients’ beliefs, experiences, attitudes and expectations of e-health in primary health care, *Scandinavian Journal of Primary Health Care*, vol. 37, no. 1, pp. 41–52, Jan. 2019
- [12] Internetstiftelsen, *Svenskarna och internet 2019, 2019*. [In Swedish]
- [13] Greenhalgh T, Shaw S, Wherton J, Vijayaraghavan S, Morris J, Bhattacharya S, Hanson P, Campbell-Richards D, Ramoutar S, Collard A, Hodgkinson I. Real-World Implementation of Video Outpatient Consultations at Macro, Meso, and Micro Levels: Mixed-Method Study. *J Med Internet Res* 2018;20(4):e150, doi: [10.2196/jmir.9897](https://doi.org/10.2196/jmir.9897).
- [14] Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups, *International Journal for Quality in Health Care*, vol. 19, no. 6, pp. 349–357, Dec. 2007, doi: [10.1093/intqhc/mzm042](https://doi.org/10.1093/intqhc/mzm042).
- [15] Inera AB, *Nationell Patientöversikt (NPÖ)*. Accessed: Jan. 01, 2023. [Online]. Available: <https://www.inera.se/tjanster/alla-tjanster-a-o/npö---nationell-patientoversikt/> [In Swedish]
- [16] Graneheim UH, Lundman B, Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness, *Nurse Educ Today*, vol. 24, no. 2, pp. 105–112, Feb. 2004
- [17] Bosch J, Ludwig C, Fluch-Niebuhr J, Stoevesandt D. Empowerment for the Digital Transformation: Results of a Structured Blended-Learning On-the-Job Training for Practicing Physicians in Germany, *Int J Environ Res Public Health*, vol. 19, no. 20, p. 12991, Oct. 2022
- [18] Alexander GC, Tajanlangit M, Heyward J, Mansour O, Qato DM, Stafford RS. Use and Content of Primary Care Office-Based vs Telemedicine Care Visits During the COVID-19 Pandemic in the US, *JAMA Network Open*, vol. 3, no. 10, pp. e2021476–e2021476, 2020
- [19] Cederberg J. Sharp Increase in Digital Care (in Swedish, Kraftig ökning av digital vård), *Läkartidningen*.
- [20] Jäderlund Hagstedt L, Hägglund M, Petersson G, Davoody N, Hvitfeldt H. Impact of the Covid-19 pandemic on use of Video consultations in a Swedish Primary care setting, presented at the 18th Scandinavian Conference on Health Informatics, Aug. 2022, pp. 212–213. doi: [10.3384/ecp187037](https://doi.org/10.3384/ecp187037).