Video consultations during Covid-19: repairing the lack of embodied encounters with patients in outpatient clinics

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Abstract. The Covid-19 pandemic has forced hospitals to adapt and rethink how they treat patients to limit the spread of the virus and avoid overloading during spikes of admission. Danish hospitals have implemented video consultations which enable patients and clinicians to see and talk to each other without the patients coming to the hospital. Based on observations of clinicians' video consultations with patients, as well as observations of online hospital meetings regarding virtual outpatient clinics, this paper explores clinicians' experiences with adopting video consultations. The paper unfolds what this new form of consultation repairs, leaves behind, and engenders. Finally, the paper speculates about how the digital transformation might anchor itself in the healthcare sector, also in a post-pandemic future.

Introduction

The Covid-19 pandemic has dramatically changed the world as we know it. Restrictions on movement and gatherings are enforced to limit the spread of the virus. The world's hospitals are under severe pressure, and if the infection count increases uncontrollably, hospitals risk exceeding their capacity. To avoid overloading during spikes of admissions, and to limit the spread of the virus,

hospitals have been forced to adapt and rethink how they treat patients during the pandemic. In Danish hospitals, this entails that non-urgent treatments and surgeries have been postponed or moved to other hospitals (Region Hovedstaden 2021). Many consultations in outpatient clinics are also postponed or are held via telephone instead of physical meetings (Region Hovedstaden n.d.-a). The phone consultation challenges the format of the consultation because the clinicians are not able to see their patients and combine the visual input with the patients' statements in their assessment of the patients' health. As a new option initiated during the pandemic, the hospitals in two Danish regions have implemented video conferencing software that allows patients to have video consultations with the hospital. This enables the patient and clinician to see each other in real-time, which to some degree offers repair to the visual cues that are important during a regular consultation but are completely absent during a phone consultation.

Based on ethnographic fieldwork in a hospital, this paper seeks to unfold what this new form of consultation repairs, leaves behind, and engenders in a time of crisis. The findings suggest that while the video consultations lack some aspects of a bodily encounter, the video conferencing software elevates a phone consultation substantially by allowing clinicians to see the patients and by allowing other materialities to participate in the interaction. The paper ends on a speculative note, discussing how video consultations between hospital and patient might be embedded in the healthcare sector, also in a post-pandemic future.

Digital transformations in the Danish healthcare sector

Danish digitalisation strategies have long promoted how telemedicine technologies have the potential to provide better care at a lower cost since patients can receive care in their own homes (Regeringen et al. 2012). Current strategies specifically outline how video consultations will be included in the array of healthcare services where they are imagined to be used not only as a telemedicine service for selected patient groups, but rather as an integrated part of the future healthcare services (Danske Regioner 2020; Sundheds- og Ældreministeriet et al. 2018).

In 2016 and 2017, two Danish regions, that combined cover almost half of the Danish population, implemented a new electronic patient record (EPR) system, The Health Platform (Sundhedsplatformen in Danish), with an integrated patient portal, MyChart (Min Sundhedsplatform in Danish). MyChart enables patients to, among other things, access their health information, write to the hospital where they receive treatment, answer questionnaires, and enter measurements (Region Hovedstaden n.d.-b). The integration of video conferencing software is one of the newer plugins integrated with the EPR-system, and patients access the video consultation via MyChart which exits both as an app and a website.

By March 2020, when the Covid-19 pandemic broke out in Denmark, video consultations were already being tested in a pilot project involving selected

departments across the two regions. In light of the pandemic, it was decided to release the video solution across all the hospitals in the two regions (Løve et al. 2020). This means that the shift to offering video consultations at the hospitals comprises a digital transformation which was already happening at the hospitals prior to Covid-19, but rather than a gradual implementation across the hospitals after an evaluation of the pilot project, the solution was instead released for broad implementation at all departments that deemed it relevant. The urgency of the pandemic sped up and expanded the implementation of video consultations in ways that were previously unimaginable, and thus jolted a digital transformation that would likely have otherwise taken years. In that sense, during the first wave of the pandemic, the future healthcare system collapsed into the present.

Research on telemedicine and remote collaboration

For more than a decade, different telemedicine solutions have been developed, tested, and implemented to permit clinicians to provide 'care at a distance' (Pols 2012), delocalizing care and diagnosis from the hospital (Mort et al. 2003). STS and CSCW studies find that in such new care installations patients' homes are reconfigured (Oudshoorn 2012) and patients are often required to develop diagnostic skills (Andersen 2010; Oudshoorn 2008). They also find that while work is delegated from hospital staff to patients (Oudshoorn 2008), specific tasks, such as monitoring, are delegated between human and nonhuman actors in distributed spaces and rely on collaboration (Langstrup et al. 2013). Studies also report on telemedicine projects being discontinued due to a lack of confidence in the diagnosis at a distance (Mort et al. 2003). Outside of healthcare, it has moreover been pointed out how distance matters for collaborating teams (Olson and Olson 2000), initially affecting cooperation and trust (Bradner and Mark 2002). However, studies also find that video conferencing improves remote collaboration compared to audio only and decreases misunderstandings (Karis et al. 2016; Olson and Olson 2000).

Consistently across the telemedicine studies, the solutions are used in the framework of a project. They are often tested on a specific group of patients, typically with chronic conditions, who receive equipment from the hospital/project (Andersen 2010; Langstrup et al. 2013; Oudshoorn 2008; Pols 2012). In the present case, two Danish Regions have rolled out video conferencing software as an emergency response during the current crisis, which is also seen in the context of social work (Pink et al. 2021). The intention is to offer video consultations with the hospital as an alternative to the in-person consultation - also once the situation returns to 'normal' (Løve et al. 2020). This video consultation solution differs from the aforementioned telemedical solutions because, first, the patient does not require any equipment from the hospital. If the patient has internet access and a smartphone, tablet, or computer with a camera and microphone, they can engage in the virtual encounter with the hospital.

Second, the solution is not limited to a small selection of patients with a certain condition. Instead, video consultations are intended to be available to any patient who finds the option relevant.

A lens of care and repair

This article specifically attends to the *repairment* of the hospital consultation during Covid-19. By turning to video consultations, some of the visual elements lacking in a phone consultation are reinstated, which arguably offers repair of the consultation. In the investigation of the repairment, this article links the notion of repair with that of care (Buser and Boyer 2021; Jackson 2014; Tronto 1993). Fischer and Tronto define care as:

> [A] species activity that includes everything that we do to maintain, continue and repair "our world" so that we can live in it as well as possible. That world includes our bodies, our selves, and our environment, all of which we seek to interweave in a complex, life sustaining web. (Tronto 1993, p. 103)

The definition points to how care is relational (de la Bellacasa 2012). Tronto also states that in this definition, care is not only between humans but can also be directed towards objects and the environment (Tronto 1993, p. 103). Others have furthermore argued how nonhumans partake in care work (Buser and Boyer 2021). Following this perspective, I look at the video consultations and the surrounding work as care and repair, making the consultation 'as well as possible' in a time of crisis. I attend to what is being repaired, as well as the directionality of care.

Methods and empirical setting

The paper is based on ethnographic fieldwork (Crang and Cook 1995; Forsythe 1999) at a hospital in greater Copenhagen in the Capital Region. The hospital started using MyChart in early 2018 and selected departments have partaken in pilot projects testing new features. Access to the hospital was established in December 2017 during previous research (See Laursen and Finken 2020). During the first wave of the pandemic in spring 2020, the hospital initiated using video calls. Rather than being implemented broadly across all departments, it is voluntary for the individual departments and their personnel to use video consultations with patients. Due to the pandemic, the fieldwork has been fragmented and took place on selected days starting May 2020 and is still ongoing. The fieldwork includes in-person observations at outpatient clinics when clinicians held video consultations with patients, and online observations of online staff meetings where interested clinicians, technical staff, and quality workers meet at a bi-weekly online meeting to exchange experiences and to

provide technical support if needed. During both types of observations, I took extensive fieldnotes.

The findings section below is based on a preliminary analysis of the collected material on the hospital's use of video consultations with a focus on repairment during the pandemic. The section centres on two vignettes (Hammersley and Atkinson 2007) from observations with a clinical dietician from the gastroenterology department and a specialist clinical nurse from a neurology department. To protect their privacy, I use fictitious names.

Hospital video consultations during Covid-19

The analysis of my material is guided by the questions of what the video consultation repairs compared to a phone consultation, as well as what is still left behind compared to an in-person consultation, which is presented in the first section. In the second section, I propose what the video consultation engenders.

What is repaired and left behind

When the physical meetings are rescheduled to phone consultations it compromises the consultation in various ways because both visual and tactile elements are lacking. The video consultation repairs some of the visual deficits of the phone consultation; while it can be hard to observe body language through the video call, it allows the clinicians to see the facial expressions of patients. Visual elements of seeing each other; to look each other in the eyes, observe body language, etc. play a part in establishing rapport between patient and clinician. The clinical dietician Patricia explains that seeing the facial expression of her patients via video helps her evaluate whether they have understood the dietary guidelines she is educating them in. This can be tricky to evaluate simply by listening to their verbal responses and tone of voice in a phone call. Olson and Olson (2000) similarly report how video increases understanding between collaborators compared to audio only. Evaluating patients' understanding of the instructions given is a form of care that concerns making sure that patients can perform the necessary self-care until they have the next consultation.

Another benefit of the video consultation compared to the phone consultation is that the camera can be adjusted to show the patients' bodies. Patients can, for instance, show where they have pain and use their hands to gesture and visually demonstrate the symptoms they are explaining to the clinicians. This is highly relevant at the neurology department that attends to patients with conditions such as Parkinson's disease who have shakings, body stiffness, the experience of being unable to control their body properly, etc. The vignette below of a video call that Søren, the clinical nurse specialist in the neurology department, had with a patient with Parkinson illustrates an assessment of the patients' condition:

Søren has a video consultation with a patient living outside of Denmark. The patient has Parkinson's disease and two weeks ago he visited the hospital in Copenhagen to get the settings on his deep brain stimulation device adjusted. The consultation today concerns how his symptoms have been since last. Søren starts the video call on his laptop and the patient appears on the screen. They exchange greetings and talk about the cold winter weather. The patient stands up and walks to the window. He turns the camera and shows the snow-covered landscape with steep cliffs outside his house. (…) To assess the patient's balance, Søren asks the patient to walk back and forth in front of the camera. The wife picks up the phone and turns it towards her husband, so his walk is visible on the screen. He walks into the living room and back to the kitchen. Søren asks whether he can walk backwards and sideways. The patient does both without problems and he even dances a pirouette in the living room, before returning to the kitchen (Observation with clinical nurse specialist).

Søren observes the patient walk back and forth in front of the camera to see their walk and mobility which provides him with some visual cues to aid his assessment of the patient's condition. Søren also explains how he can guide the patients to use their camera to show him the scars from, for instance, operations so he can assess if there are swellings. These are assessments Søren normally does in an in-person consultation. In a phone consultation, patients can narrate such information to the clinician, but with the video call, clinicians can combine the patients' narrations with their own observation of the patients and, thus, it elevates a phone consultation substantially. These visual observations might be easier during a physical meeting, but the video is nonetheless an important repairment. According to the clinicians, generally, video consultations have limitations compared to physical meetings, but they are better than phone consultations. As one clinician expressed in one of the online meetings: *"Video consultations are way better than phone calls but worse than physical meetings"* (Fieldnote from online meeting).

Another repair offered by the video consultation is allowing relatives to join in the conversation. In the fieldnote above, the patient's wife participates in the consultation. The patients' relatives are often important for patients' treatment and for gaining insights into patients' health. Where a phone consultation makes it difficult for relatives to participate in the conversation, the video consultation allows them to participate similarly to accompanying the patient to an in-person consultation because both patient and relative can be visible on screen.

While touching, smelling, and listening to the patients' bodies are still absent in the video consultation, the visual deficits of a phone call are repaired by turning to video consultations. Furthermore, as will be explored below, the video consultation invites new materialities into the conversation between clinician and patient and opens up new possibilities.

Beyond repair: What the video consultation invites

Visual materialities. During a video consultation, the focus of the conversation becomes centred on the screen where the clinician and patient can see each other.

As such, the video consultation is constituted through what is visible on the screen. During a video consultation both clinicians and patients may introduce other materialities than their own bodies into the consultation by including them in the view of the screen, as the vignette below exemplifies:

> The clinical dietician Patricia has a follow-up conversation with a patient with lactose intolerance. She initiates the consultation by summarizing the advice she gave last time and then invites the patient to narrate how he has been doing. They talk about vitamin supplements and the patient stands up and collects a bottle of vitamin D that he shows to the camera, allowing Patricia to see the type and amount. (…) Patricia asks the patient what he drinks instead of milk and the patient walks to his fridge and pulls out a juice bottle which he holds up in front of the camera. (…) The patient explains about different types of foods that give him pain besides products with lactose. They discuss this for a while and Patricia also recommends him talking with his doctor about this issue. She suggests some modifications he can try, for instance, cutting down on the use of onions and garlic, and instead using the green part of spring onions. The patient is unsure what spring onions are. Patricia quickly turns to Google and finds an image that she shows him via the screen-sharing function (Observation with clinical dietician).

The inclusion of image sets the video consultation apart from a phone consultation, and several patients and clinicians take advantage of the possibility to show things on the screen. By being at home and having the hospital consultation via video, patients are enabled, or even compelled to show the clinician items in their home, such as vitamins and food, which they most likely would not have brought to a regular consultation. Patients also show things that are seemingly irrelevant to the medical aspect of the consultation, for instance, their view out the window. Previous research has argued that when care moves into the home it is necessary to consider the role of the space in this new encounter (Langstrup et al. 2013; Oudshoorn 2012) as the technologies may be considered intrusive (Pols 2012).

The video conferencing software also allows clinicians to show information to patients. Patricia uses screen share to show patients food and vitamins, so they know how they look. An important aspect of care in the consultations with the dietician seems to be ensuring that patients understand the information provided. In her video consultations, Patricia uses the option in the video conferencing software to combine verbal information with visual information; she has created PowerPoint presentations about the illnesses she provides dietary consultations for, which she shows patients in their initial meeting. She might also show them a video about digestion. The video consultation's emphasis on visuals engenders an invitation for new forms of materiality to participate in the consultation.

Limited mobility and flexibility. The distributed location of clinician and patient during a video consultation is another element that opens up new possibilities. The neurological department at the hospital sees patients from all of Denmark, as well as patients from Greenland and the Faroe Islands. The clinical nurse

specialist explains that for patients that live far away or have movement difficulties, video consultations make an obvious choice for the consultations that do not necessitate in-person meetings. In these cases, care is arguably directed towards aspects that surround a consultation, such as patients' transport. While the care 'situation' in outpatient clinics might be considered the consultation, offering flexibility can also be seen as an act of care. For patients, video consultations may provide more flexibility compared to regular consultations. In my observations, one patient reported that they accessed the video consultation from work, another that they used the waiting time to vacuum-clean.

The examples illustrate how video consultations can offer an alternative for patients who live far away or have difficulties coming to the hospital, or patients who seek greater flexibility in their contact with the hospital, for whom the video consultation can easier be fitted into their daily activities and save them the time and effort of coming to the hospital. Currently, during Covid-19, video consultations offer the benefit of conducting consultations without being in the same room and thus minimizing the risk of spreading the virus. However, the other benefits of non-co-located consultations may deem the video consultations desirable also in a post-pandemic future.

Discussion and conclusion: Video consultations in a post-pandemic future

In contrast with previous literature on telemedicine which is typically delimited to studying the technology in the context of a project, this paper investigated video consultations when they were broadly rolled out to facilitate care at a distance between the hospital and remote patients in the light of the Covid-19 pandemic. Another key difference to other studies is that rather than receiving equipment from the hospital (e.g. Andersen 2010; Langstrup et al. 2013; Oudshoorn 2008), the patients use personal technologies they already own such as smartphones, tablets, and PCs. The findings elicited how video consultations repair some of the embodied aspects from a physical consultation, which lack in a phone consultation, by reintroducing visual elements that are important both for clinicians' assessment of the patients' health and for evaluating whether patients understand the information given during a consultation. While in a quite different context, research on remote collaboration has similarly pointed out how video enhances the understanding between parties compared to audio only (Karis et al. 2016; Olson and Olson 2000). The video consultation also makes it easier for patients' relatives to join in the conversation. In addition to the repairs, the video solution engenders new options such as sharing educational material and invites the visual materiality of sharing and showing things from the patients' home on camera during the consultation. Finally, the opportunity to have non-co-located consultations has the potential to ease accessibility to healthcare services for

people living far away, for instance, in Greenland and Faroe Islands, and for patients with mobility difficulties, or patients seeking more flexibility in their contact with the hospital.

The repairment offered by the video conferencing software has rendered the solution a good alternative to the in-person consultation for providing care during the pandemic. A prevalent question that remains is how the solution will be used once the majority of the population is vaccinated and it becomes less risky to meet in person again. The possibility of offering a non-co-located consultation in some cases seems relevant beyond pandemic times.

In the online staff meetings regarding virtual clinics, the participants discuss how patients should have the option to choose between physical, video, or phone consultations for the appointments that do not require that the patients come to the hospital, which is also proposed by Danish Regions (2020). Whether the video consultation will gain further traction thus seems dependent on patient choice. Based on my work so far, I identify three dependencies that need to be considered when offering virtual consultations. First, it requires a skilled evaluation of which consultations require in-person interaction. Second, the process of checking the patient's preference needs to be embedded into the current practices of booking hospital appointments, which could prove time-consuming. Finally, but very importantly, are the clinicians' preferences. Currently, several clinicians seem reluctant to use video consultations. This creates the task of training clinicians and getting them comfortable using the video solution. However, if they do not see the benefits of video consultations, deem that they have too many deficits compared to the physical meetings, or if the technical difficulties are too pronounced, then video consultations might not become embedded in treatment practices, despite a desire from management and patients.

One can only speculate how the use of video consultations might anchor itself in the healthcare sector in a post-pandemic future. However, it seems unlikely that the solution will disappear, and that the ongoing digital transformation will retract to a pre-pandemic stage. Thus, it will be interesting to follow the negotiations of when and how to use video consultations in the future. Further research might investigate what consequences this type of consultation has, for instance, on the patient-clinician relationship (Piras and Miele 2019) and the space of care (Langstrup et al. 2013; Oudshoorn 2012), particularly considering that patients use personal technologies. Embedding technologies in care infrastructures always requires practical work of continuously 'fitting' (Pols 2012) clinicians, patients, administrative tasks, devices, etc. to provide good care. When technologies are implemented on a large scale and connect with technologies uncontrolled by the hospital as in the present case, it seems particularly crucial. This paper has suggested some of the work that compels attention on the clinical side of the infrastructure. The multitude of sociotechnical dependencies on the patient side remains for future research.

Acknowledgments

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