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Introducing video calls in an intensive care unit during the COVID-19 lockdown: a qualitative study

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ABSTRACT

INTRODUCTION. During the first wave of the COVID-19 pandemic, visits to hospitals were prohibited. Therefore, new ways of communicating with relatives about and with patients were needed. This study aimed to explore experiences made with video calls in an adult ICU.

METHODS. This study employed semi-structured group interviews conducted with six registered nurses from the ICU in a large hospital in Denmark who used video calls during the lockdown. Interviews were transcribed verbatim and analysed using systematic text condensation.

RESULTS. The analyses indicated that video calls were a useful alternative to physical meetings. The advantages of video calls were that relatives had risk-free access to the ICU and the patient's treatment, whereas patients gained a window into their home, and nurses used less planning time than physical visit. Finally, patients were less distracted by video calls than by visits. The challenges identified with video calls were difficulties for nurses to care for relatives, ethical aspects and technical issues.

CONCLUSIONS. Video calls were an effective tool for communication during the COVID-19 lockdown, presenting a number of advantages and challenges compared with in-person visits or telephone calls. By identifying and overcoming these challenges, video calls may become a beneficial supplement to in-person visits or telephone calls.

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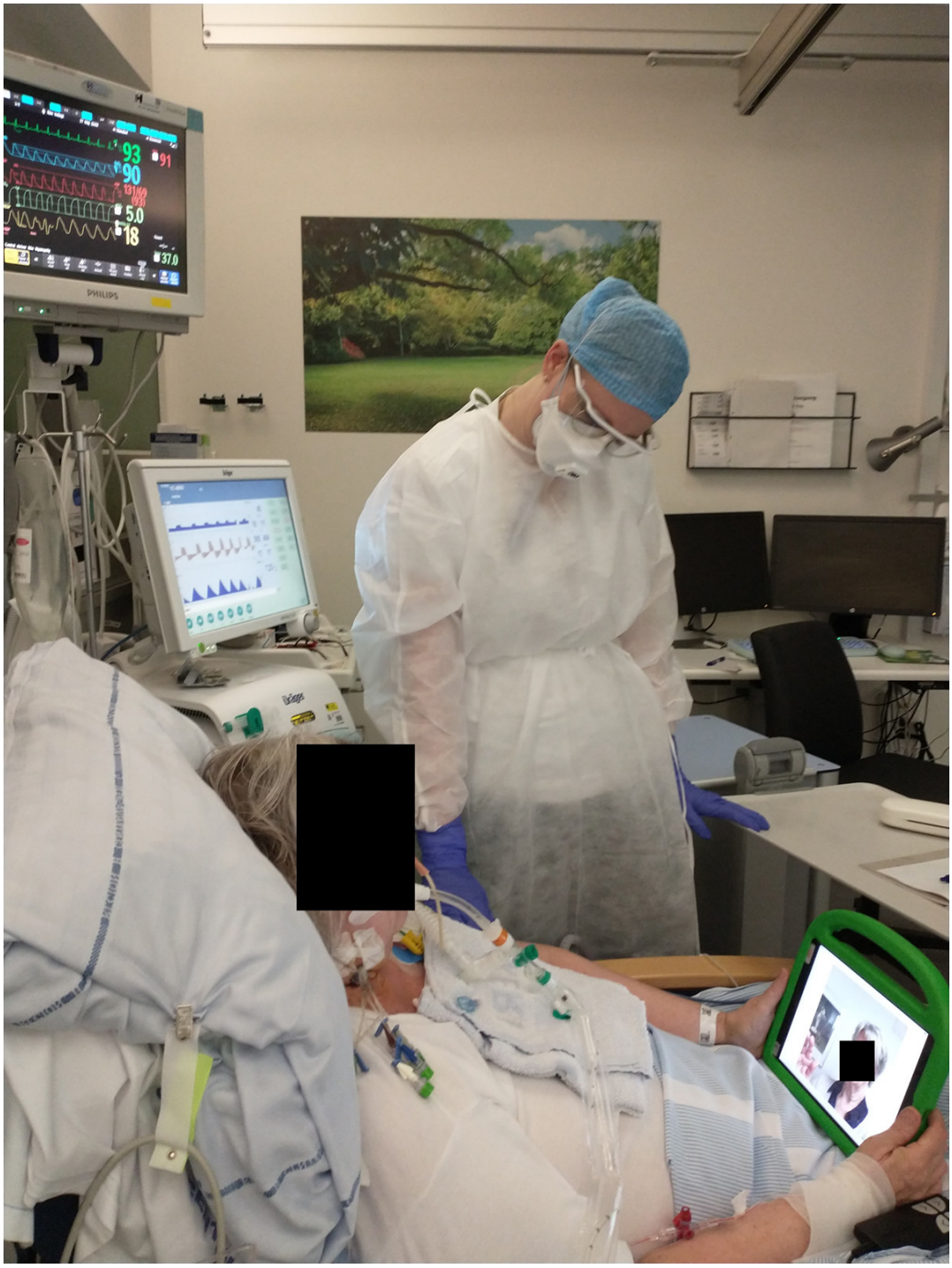
TRIAL REGISTRATION. Approved by the Danish Data Protection Agency (P-2020-931).



Patient making a video call in the intensive care unit.

The first Dane was diagnosed with COVID-19 in February 2020. By 11 March, the World Health Organization declared COVID-19 a pandemic. This triggered a lockdown imposed by the Danish government [1], and visits to hospitals by relatives were prohibited unless a patient had reached a critical or terminal state.

This was different from normal practice in the intensive care unit (ICU) where relatives are encouraged to visit patients regularly and take part in their care, as patients admitted to the ICU are often unable to form part of the decision-making process themselves and therefore rely on relatives to serve as their stand-in [2-4].

When relatives are restricted from visiting, it can be difficult to grasp the complexity of an ICU admission, which

may, in turn, challenge communication between staff and relatives [5]. Clear communication from the staff is important for relatives as their situation may be stressful, and one-third of close relatives are estimated to develop posttraumatic stress. This risk increases if they feel insufficiently informed [6, 7]. Alternative methods to handle communication between relatives, staff and patient were therefore needed during the lockdown. Video calls offered this alternative as it is available on most smartphones, a device owned by 90% of Danish households [8].

Video consultation is a well-documented tool in caring for patients with chronic illness and improving shared decision making [9, 10]. A study exploring the experience of telephone and video interactions during the COVID-19 pandemic in an ICU setting in the US found that telephone calls were useful for brief updates and information sharing, whereas video calls were preferred for aligning clinician and family perspectives [11].

The aim of this study was to explore ICU nurses' experience with video calls during the COVID-19 lockdown and to understand what the nurses used video calls for and if they found it to be a useful and meaningful tool, both in their work life and for patients and/or relatives, hereby helping the facilitation of video calls as an everyday tool in an ICU setting.

METHODS

Design, setting and participants

The study was conducted to explore ICU nurses' experience with video calls during the first wave of COVID-19 from March to August 2020. The ICU was a 12-bed adult medical/surgical unit in a tertiary care teaching hospital in Copenhagen, Denmark. In the study period, most patients were admitted with COVID-19 [1].

Participants were ICU nurses who were specialised or in specialised training. Nurses were selected based on one subjective criterion: Experience with video calls during the lockdown. Participants were recruited via personal invitation by the first author and through e-mail by the fifth author; the included nurses were all among the personal invited. The participants were two male and four female nurses, with healthcare experience as presented in **Table 1**. Interviews were conducted during normal working hours by the first author.

TABLE 1 The nurses' experience.

Nurse no.	Experience as a nurse, yrs	Experience from the ICU, yrs
Males		
1	10	3
2	30	25
Females		
3	5	0.5
4	10	4
5	17	10
6	11	5

Data collection was completed in September 2020 through two face-to-face group interviews, with three nurses participating in each. A semi-instructed interview guide was tested in a pilot interview prior to the group interviews on one ICU nurse, with both the first (HO) and the last author (GL) present (**Appendix 1, https://ugeskriftet.dk/files/a09210717_-_supplementary.pdf**). Group interviews were chosen to facilitate debate among the nurses. Interviews were 35 min and 38 min in length, audio-recorded and transcribed verbatim. The data were completely anonymised.

The technical solution used for video calls was either the patient's phone or a secure video solution provided by Incendium on a dedicated tablet in the ICU. Nurses sent a text message with a link to the relative's phone to establish a video transmission. Each nurse had a unique log-in code for access. Nurses were introduced to the solution during a staff meeting and by e-mail.

Data analysis

Data analysis was conducted thematically, with an explorative and inductive approach using Kirsti Malterud's systematic text condensation four-step analytical approach [12]. The steps are presented in **Table 2.**

TABLE 2 Systemic text condensation.

Step no.	Subject	Analytic process	Performed by
1	Total impression	From chaos to theme Reading the transcripts many times over to form an impression and identifying possible themes	HO, GL
2	Identifying and sorting meaning units	Systematic review of the transcript Identifying and sorting meaning units	HO, GL
3	Condensation	From code to meaning, where the meaning units were deciphered and put together to form examples of what was said in the interviews and specific quotes were identified to illustrate statements made	HO, GL, DØ
4	Synthesising	From condensation to descriptions and concepts, where the findings were assessed and reflected upon	HO, GL, DØ

The study was conducted in accordance with The Consolidated Criteria for Reporting Qualitative Research (COREQ Checklist) [13].

The themes were e-mailed to the participants, allowing them to comment; which none of them did.

Ethical considerations

The study was approved by the Danish Data Protection Agency (P-2020-931). Interview studies of this kind do not require ethical approval in the Capital Region of Denmark.

Trial registration: This study was approved by the Danish Data Protection Agency (P-2020-931).

RESULTS

Advantages of video calls

Video calls served as a useful alternative to a physical meeting, which was necessary during the first months of the COVID-19 pandemic. The restrictions on visits to hospital were a challenge to all involved, including the nurses who normally have close contact with relatives.

“I think we all had the feeling that it had to be really challenging for the relatives that we couldn't accommodate them, that they couldn’t come and see their loved ones. I think this made all of us staff open to whatever could facilitate communication” (Nurse 6).

When the nurses encountered challenges explaining the clinical situation via telephone or felt that the relative needed additional insight, video calls were used. Through the video call, the nurses found that relatives improved their understanding of the setting.

“I was telling them [the relatives] about intubation and a ventilator. It [a video call] helped the relative to understand it all in a different way than by spoken word. The imagination is working overtime, so to see it with their own eyes gave some peace” (Nurse 2).

The nurses saw a potential for video calls as a supplement to physical visits, e.g., for relatives who had a long distance to the hospital or for vulnerable relatives as video calls may spare them a trip to the ICU.

“I think it’s a good solution to have if something prevented relatives from coming … new outbreaks or distances” (Nurse 1).

Some patients were hospitalised for a long period and isolated from their relatives and everyday lives. Video calls offered a window into their homes and normal life that telephone calls or in-person visits did not, which nurses saw as an advantage.

"With one of the patients, the video was just left on, so he could see his wife cooking and his son playing with LEGO at the table … This way he was part of their everyday life" (Nurse 6).

The nurses found video calls to be less time-consuming than an in-person visit to the ward. Furthermore, video calls were easy to fit into routines and created fewer distractions for fellow patients and staff.

"Video calls had to be scheduled, but to a lesser extent than a physical visit. Sometimes, the entire shift may need to be scheduled around a physical visit. The video call was easier to fit in" (Nurse 3).

"There are fewer considerations to make to fellow patients when relatives are not physically present … Both the visitor and the co-patient get more privacy" (Nurse 5).

Challenges of video calls

Although the nurses were positive about video calls, none of them felt they could replace an in-person visit, and they all preferred relatives being present in the ward.

"…Without a doubt the most important thing is that relatives can be physically present during the hospital stay, both for the good and the bad" (Nurse 1).

The nurses found that video calls were an insufficient tool in caring for the relatives. Normally, nurses feel great responsibility in providing care for the relatives and have different tools that they use to get a sense of their emotional state. These tools were put on hold during the restrictions.

"It's difficult to get a sense of whether the relatives need additional attention after having contact with the patient when it's via video. The intimacy is lacking. If they need a shoulder to cry on, there's still this distance. It's a bit awkward trying to provide comfort over video" (Nurse 1).

With video call, the nurses felt that there were ethical aspects to consider that differed from those associated with physical visits, as many of the patients were incapable of understanding and remembering what happened.

"I have some ethical considerations when the patient has not given consent to video calls; after all, it is possible to take screenshots and post them on Facebook" (Nurse 4).

The technical aspect of video calls was a considerable challenge. The ICU had tablets with a secure connection for video calls. Both the tablet and the platform for video transmission required a login code. Some nurses had good experiences with this solution, whereas others found it troublesome to gain access. Problems differed from establishing a sufficient internet connection to problems with the loud-speaker function. The nurses described limited time and capacity to deal with technical problems because they were in the isolation unit. Thus, they either gave up on the video call or used the patient's smartphone instead.

"Our time is limited … So, I didn't use it because I found it too complicated and time-consuming" (Nurse 6).

The themes from the discussions are condensed and presented in **Table 3**.

TABLE 3 The intensive care nurses' experience with video calls during the lock-down. Main and subthemes from the qualitative analyses of the interviews.

	Relative-related aspects	Patient-related aspects	Implementation in the ICU
Advantages	Relatives get insight into treatment More relatives can see the patient No transportation No transmission infection Less overwhelming experience	The patient gets a window into his or her home	Less planning needed and not as time-consuming as physical visits Less distraction of fellow patients compared with physical meetings
Challenges	Physical care and contact is missing Difficult to care for the relatives	Ethical aspects related to filming the patient	Technical issues can be a barrier for use

DISCUSSION

We found that video calls introduced ad hoc at the ICU during the COVID-19 lockdown had both advantages and disadvantages to learn from for future use.

Video calls were used to show relatives the setting at the ICU and for maintaining a social connection between patients and relatives. The nurses felt that video calls were a helpful tool in providing a private space for relatives and patients to be together, which was needed. This was echoed in a similar study by Kennedy et al. [11], where relatives expressed that what they sought from video calls was more social time with the patient, without any interference by clinical staff. Furthermore, the study reported varying opinions about the effectiveness of video calls to gain an understanding of the clinical situation, even though clinicians found that video calls were effective for this purpose.

In our study, the nurses found that although video calls had advantages, they could not replace in-person visits as they worried that patients did not receive enough social contact. This is in line with findings from other studies [11, 14].

Less time consumption and fewer interruptions with video calls compared with in-person visits were an advantage expressed in this study, in contrast to what was found in similar studies [11]. Various technical difficulties, however, reduced how often video calls were used and with whom. In other studies, elderly people were found to prefer the phone, but enjoyed video calls when they were helped to use it [15, 16].

The ethical concerns raised by some of the nurses, with using video calls from within the ICU, was studied in Kennedy et al. [11]. Here, neither clinicians nor relatives found ethics to be a problem. However, the study did not examine the patients' views regarding this topic.

The relatives' wellbeing after ending a video call was a concern that the nurses expressed. This correlates with other studies where concerns were raised about sharing a negative status by telecommunication [15] and the nurses' inability to embrace the relatives' needs due to restrictions reduced their job satisfaction

The future potential of video calls

The COVID-19 pandemic has contributed to a wider and faster rollout of telecommunication in a hospital setting; especially in outpatient care, where telecommunication has been rapidly implemented to lower the transmission risk [15, 17]. However, telecommunication has a wider potential.

Video calls have been shown to be an effective tool with outpatients [9] but hold a potential for hospitalised patients as well, even beyond the pandemic setting. This is seen, e.g., in communication with relatives, as they can participate in the hospitalisation of the patient from afar, while upholding a degree of nonverbal communication [11]. In the study by Kennedy et al. [11], the effectiveness of audio-only telephone calls and video calls was compared and the latter was found to be slightly more effective, rated higher by clinicians than by

relatives. However, increasing awareness of the potential of video calls through this and similar studies, and putting video calls to wider use to improve communication, may potentially increase the satisfaction of clinicians, relatives and patients alike [11, 18].

Technical solutions that are easy to use are of the greatest importance for video calls to reach their full potential. A study on how to implement new technology in the acute setting found that it was pivotal that technology was easy to use for it to be implemented [19]. In our study, nurses cited technical difficulties as a limitation to how often they used video calls, which was also found in other studies [11, 16].

Limitations

Only six nurses were included in this study; representing a small number of nurses working at the studied ICU. Therefore, full saturation may not have been reached. However, the nurses expressed similar opinions in the two interviews, giving us reason to believe that limited new knowledge would have been achieved from more interviews. Several nurses who were asked to participate had failed to establish a video call and were therefore not included. This may potentially contribute to presenting a more positive outlook on video calls than was actually the case, as changing behaviour and work habits to include new technologies can be challenging [19].

Overall, the nurses had a positive attitude towards video calls, which may reflect the uniqueness of the situation of the lockdown, where everyone had to make the best of what was available [16]. This study did not include relatives or patients and how they perceived video calls, so further studies describing their prespectives are warranted.

CONCLUSIONS

This study found that video calls were a helpful tool during the COVID-19 lockdown. Video calls had advantages as an alternative to a physical meeting as relatives could gain insights into patient treatment without risking infection or having to travel long distances. The advantages for patients were that they obtained a “window” into their home and normal everyday life. Nurses experienced an advantage in saving time and reducing the number of interruptions in their daily routines by video calls compared with visits.

The nurse-relatives relation was a challenge as the nurses could not provide care for the relatives through video calls. Technical problems were possibly the greatest challenge as several of the nurses invited to participate in the study had failed to use the equipment.

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