When the physical presence in the citizen’s home is replaced by online video consultations; a citizen perspective

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Abstract

Background: A Danish municipality offered a rehabilitation programme to citizens with severe Chronic Obstructive Lung Disease (COPD). The intervention replaced the presence of a primary care nurse in the citizen’s home with online video consultations. Studies have found that online consultations can facilitate and activate the citizens in their rehabilitation.

Aim: To investigate the citizen perspective on and experience with online video consultations in the citizen’s home. Furthermore, to investigate the impact of online video consultations on how the citizens managed everyday life with COPD and respiratory problems.

Methods: A qualitative study based on individual interviews with nine citizens with severe COPD. Ethnics: This study was approved by the Danish Data Protection Agency and ethical rules in research were followed.

Findings: Online video consultations created a safe, personal room facilitating the citizen's coping with respiratory problems. The care was based on sensitive situation-specific attention towards the individual citizen, the flexibility of the programme and professional competences in COPD and IT. In general the good relation online depended on the primary care nurse having met the citizens in the same room prior to the online video consultations. The technology made it possible for the citizens to have frequent contact with the primary care nurse. As follow up on online video consultations, the primary care nurse made acute visits if needed to citizens in their own home and initiated treatment and hospital admission. Despite varying experiences with IT, citizens did not perceive the technology as challenging. Citizens perceived the intervention as a future municipal rehabilitation programme.

Conclusion: Citizens took a more active role in their treatment. Online video consultations were perceived as flexible, positive and professional. The citizens experienced that the primary care nurse showed interest and compassion. The technology was not considered a barrier.

Keywords: care, COPD, online-communication, patient-nurse relation, rehabilitation, telemedicine
**Introduction**

Chronic Obstructive Lung Disease (COPD) is a serious, chronic, and under-diagnosed lung disease and a major course of morbidity and mortality (1). The primary cause of COPD is tobacco smoking (including secondhand smoke). In 2015, more than 3,170,000 people died of COPD amounting to 5% of all deaths globally. Medical treatments, physical activity and smoking cessation can help relieve COPD symptoms, improve exercise capacity, quality of life and reduce risk of death (1). In 2008 more than 430,000 out of the total population of 5,5 million in Denmark have reduced lung function corresponding to COPD (2).

The most common symptoms are breathlessness, abnormal sputum and chronic cough. COPD develops slowly and usually manifests around the age of 40 to 50 years. Activities of daily living can become very difficult as the condition worsens (1), resulting in a daily life with limitations such as fatigue, social isolation and loneliness (3,4). Patients also frequently experience exacerbations, which can be seriously disabling and result in the need for urgent medical care and sometimes death (1).

In Denmark, the demographic development with an ageing population means that people living longer with chronic diseases such as COPD. Moreover, financial resources for healthcare services are scarce and there is less staff to manage the care (5).

To meet these challenges a Danish municipality offered a rehabilitation intervention to citizens with severe COPD (6) integrating a platform for online video consultations and was undertaken by primary care nurses. The objective was to support the citizen's confidence, promote self-care and well-being, prevent exacerbation of COPD and admission to hospital (7).

Research shows it is important to include the citizen perspective and experiences in rehabilitation and nursing of citizens with chronic diseases living in their own home (8,9). The inclusion of the patient perspective is important to the development of the nursing practice (4,10). Studies have shown that online video consultations shape or change practice and the relationship between the professional and the patient (9,11,12,13).

This qualitative study explores the perspective of citizens with severe COPD on receiving nursing care through an online platform as an alternative to visits in the citizen’s own home. Still the primary care nurse could offer a visit in the citizen’s home if she found it was needed. The citizens all received nursing care in their own homes before they were included in the online intervention.

**Background**

Nationally and internationally there are political expectations to telemedicine solutions to support and involve citizens with chronic diseases such as COPD in their own treatment and care (2-5,14-16).

Studies have found that online consultations can facilitate that patients take on an active role strengthening their self-care skills and autonomy. Also, the number of emergency department visits related to COPD decreased (12,17-19). Telemedicine with synchronous online contact has been shown to have a positive impact on psychological measures (9), such as quality of life and loneliness (4,11). Furthermore, the number of emergency department visits related to COPD decreased when using telemedicine (12).

When introducing new communication technology in nursing, there may be barriers in the collaboration with citizens. To overcome these barriers, educating citizens in using the technology is recommended (8,20). According to Fairbrother and Dinesen (21,22), the citizen can become dependent on the professional and take on a passive patient role when
the telemedicine intervention consists of the reporting of medical data. Studies underline the organizational and ethical aspects as well as the importance of considering telemedicine as a supplement to traditional visits in the citizen’s home (11-13,23-25).

To nursing it seems to hold a positive potential to offer online video consultations. However, research results are sparse and ambiguous (12,26,27) and further studies are needed to investigate the citizen perspective whether online video consultations can fully compensate visits to the citizen’s home (3,28).

Focus on the citizen’s health concerns is achieved through the citizen perspective and by using disease-specific experiences attached to severe COPD. It is recommended to make disease-specific studies in relation to the application of online nursing (12,25).

Training and guidelines in nursing in a Danish municipality

The primary care nurses managing the online video consultations went through a teaching programme on rehabilitation. To relieve COPD symptoms a guideline was developed to support the intervention including the individually action plan of the citizens, which were discussed during the online video consultations. Moreover, new guidelines for collaboration between primary care nurses and general practitioners were implemented allowing the primary care nurses to prescribe medical treatment and make decision on hospital admission within a specific framework.

The purpose of this study and research questions

The purpose of this study was to investigate the citizen perspective on and experience with online video consultations in the citizen’s home. Furthermore, to investigate the impact of online video consultations on how the citizens managed everyday life with COPD and respiratory problems.

The research questions appear in Box 1

Box 1

Research questions:

1. How do citizens with severe COPD experience care when replacing the traditional primary care nurse visit in the citizen’s home with online video consultations through an online synchronous video communication platform?

2. How does this type of mediated care support the citizen in everyday life with COPD and in managing respiratory problems?
The technology of the intervention
The platform facilitated rehabilitation and nurse counselling through online synchronous video consultations in the citizen’s home. This kind of system linked the user to a wider care network and provided individualized communication and advice (29).

Access to the communication platform online was obtained through a web interface. The citizens installed a touch screen integrating a computer with a web camera or they used their own tablet or PC. The web camera made it possible for the citizen and the primary care nurse to stare at each other on the screen but not directly into the eyes. The configuration of the communication platform followed The Danish Data Protection Agency’s regulations. Contact to health professionals was made by telephone or text message. Both the citizens and the professionals were educated to manage the technology and a hotline support service was available.

Methods
Design
To explore citizens’ daily life, experiences, attitudes and impressions, the study was designed as an explorative qualitative study based on phenomenology in combination with a hermeneutic and socio-technical approach (11,23,30).

Data collection
Data from nine informants were collected between June 2014 and October 2014 by individual face-to-face semi-structured interviews (30). In June 2014, 20 citizens were included in the intervention. With inspiration from Kvale and Brinkmann (30), we challenged subjectivity and knowledge taken for granted. So, all members of the project group conducted the interviews. The group included 3 nurses and 1 engineer, all with academic degrees.

To highlight the citizens’ perspective and the support they experienced with online video consultations, the interview guide focused on everyday life with severe COPD as well as ethical considerations in relation to the research questions (2,13,25,30-32). Furthermore, the interview guide included, the fact that online video consultations were supposed to be affected by the technology as well as the coping skills concerning technology among both nurses and citizens (9,11-13,23). The themes appear in Box 2.

Box 2
Themes of the interview guide:
- A typical everyday life with online video consultations
- Technology and online video consultations
- Content of online video consultations
- Experiences with IT
- Safety, worries and relations during online video consultations

The interviews took place in the citizens’ home and lasted between 30 and 60 minutes. They were tape-recorded and conducted in accordance with Kvale and Brinkmann (30). Interviews were transcribed verbatim including laughter, pauses and sounds other than words (33), because it can be difficult to express experiences attached to bodily weakening (32).
Informants
Nine citizens, five women and four men, aged between 53 – 82 years were recruited by four primary care nurses. All participants completed the interview. The primary care nurses informed the citizens orally and in writing about the study and they applied the inclusion criteria constructed by the project group (Box 3). The authors of this study have made it clear to primary care nurses and citizens that they were independent of the municipality.

Box 3

Inclusion criteria:
- Diagnosed with severe COPD
- Participation in the study would not result in physical, mental or social complications
- Ability to understand and to speak Danish
- Ability to communicate and complete an interview
- Participation in at least three online nursing consultations

All nine citizens had multiple chronic conditions in addition to severe COPD and were all depending on help to some extent from relatives or the health care services. At the time of the interview, citizens had participated in online video consultations between one and 21 months (Table 1).

Table 1: The citizens in the study

<table>
<thead>
<tr>
<th>Name</th>
<th>Age</th>
<th>Lives with relative(s)</th>
<th>Lives alone</th>
<th>Former smoker</th>
<th>Smoker</th>
<th>Online video consultation</th>
<th>Duration of participation the intervention Months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dorte</td>
<td>69</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>Every week</td>
<td>21</td>
</tr>
<tr>
<td>Bente</td>
<td>79</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>Every 4th week</td>
<td>21</td>
</tr>
<tr>
<td>Alice</td>
<td>77</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td>21</td>
</tr>
<tr>
<td>Else</td>
<td>74</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td>21</td>
</tr>
<tr>
<td>Grete</td>
<td>62</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Erik</td>
<td>62</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Børge</td>
<td>77</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Gorm</td>
<td>53</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Claus</td>
<td>82</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td>1,5</td>
</tr>
</tbody>
</table>

Analysis
The phenomenological and hermeneutic approach was used to explore the meaning of the citizens’ experiences (30). The project group worked systematically with the research process (30). Throughout the analysis all members of the project group went through the data. The results of the analysis were thus based on discussions and oral reflections including pre-understandings and new realisations (33).
Analysis was performed in three phases: Meaning condensation, meaning categorization and meaning interpretation – themes (30).

Meaning condensation (Table 2) was based on interview data from each interview. Relevant passages were coded in accordance with the two research questions. Long statements were compressed into briefer statements to catch the meaning of the citizen’s words. The transcripts were read and re-read to find cohesions, changes and points in the interview data (30).

Meaning categorization ensured (Table 2) a more in-depth knowledge of and nuanced perspectives and showed patterns on the citizens’ perspectives. The interviews were seen as contextual knowledge produced socially in the interaction between interviewer and interviewee, and oral reflections were useful in the analysis process (31).

Table 2: Analysis of citizens’ perceptions of online video consultations

<table>
<thead>
<tr>
<th>Meaning condensation</th>
<th>Meaning categorisation</th>
<th>Meaning interpretation – Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>“I can’t do a lot of things and daily life has changed. The worst part I think is that I have to ask for help” (Dorte)</td>
<td>Being dependent on help</td>
<td>To receive support online</td>
</tr>
<tr>
<td>“I stopped smoking about 15 years ago (…) I should never have started” (Mogens)</td>
<td>Smoking is damaging to the health</td>
<td></td>
</tr>
<tr>
<td>“I hardly leave this house to meet someone …because I am not able to” (Boris)</td>
<td>Experiencing limitations in daily life</td>
<td></td>
</tr>
<tr>
<td>“… if I sit and cough…well, yes then we do it when we have talked about it, then we start with the lung flute” (Erik)</td>
<td>Following up on guidance and what I need to do</td>
<td></td>
</tr>
<tr>
<td>“Well, I think it’s how my relation is with her, so I think it’s very personal and it’s become a great help” (Bent)</td>
<td>Speaking to the primary care nurse about everything and experience you are being supported online</td>
<td>To build relations through online communication</td>
</tr>
<tr>
<td>“You actually save a lot of money in this way. Cost savings for the society” (Alice)</td>
<td>Receiving help online contributing to cost savings</td>
<td>Online rehabilitation and care is a part of the future and it saves costs</td>
</tr>
<tr>
<td>“… Well the nurse (NN) is very good at pushing the patient, at least it makes me do more than just a few small things” (Gorm)</td>
<td>The primary nurse can see how the patient is doing and act on the observations</td>
<td>Needs of the primary care nurse to make supportive conversations</td>
</tr>
<tr>
<td>“I had problems with my screen and called her (the primary care nurse) and she helped me” (Grete)</td>
<td>The primary nurse can help me with IT problems</td>
<td></td>
</tr>
</tbody>
</table>

The final phase of the analysis focused on interpretation of meaning categories to establish themes (Table 2). In this phase, the interpreters went beyond what was directly said to work out structures and relations of meaning. The project group with interprofessional background discussed the patterns and structures, and asked questions with regard to previous research and theory. Findings were read and discussed in the project group until reaching consensus (30).
Ethical considerations

The study was approved by the The North Denmark Region Committee on Health Research Ethics. Anonymity was ensured and citizens were informed of the voluntary participation and right to withdraw from the study at any time without any consequences (30). Participants provided written informed consent prior to being enrolled in the study.

Findings

All citizens living alone or with family experienced the online video consultations as an important help and guidance to maintaining everyday life. The primary care nurse was good at identifying individual needs and challenges, and IT was not seen as a problem, even though four of the citizens were not familiar with using IT before the intervention.

The four themes with subheadings are presented below.

To receive support online

To feel safe and take more responsibility

All citizens were dependent on help and perceived limitations in their social life.

“You feel like a dog on a leash” (Bente)

They felt safe about the online video consultations and had confidence in the primary care nurse regardless of duration of participation in the intervention.

“… well I simply believe that my nurse can feel what makes me feel safe, I really do” (Grete)

One citizen with severe health problems pointed out that the online video consultations were established in order to save time; however, she was happy with the outcome of the online video consultations.

“I’m grateful for having this connection …. it’s a huge help” (Dorte)

All citizens expressed that their action plans were discussed including experiences with their respiratory training.

“What they do to help me is to make me able to cough up what is stuck and pressing” (Claus)

According to seven of the citizens, the respiratory training strengthened their health, increased body awareness and well-being. This affected their self-image and their role in the treatment.

“She followed if I had done the training I was supposed to and got my proteins and it clearly showed I have had too few proteins – now I exercise and have a little more muscles” (Gorm)

Moreover, the citizens played a more active role in the treatment and improved their ability to act on and cope with own health problems.

“(…) I only need to talk to my doctor when I need new medication” (Alice)
Regular home visits if needed
The citizens experienced that the primary care nurse observed changes in moods, voice, breathing and color of the skin and that her observations could mean that online consultations were replaced by a regular home visit.

“There was this time when she said you are not well, lay down, turn off (the screen)! I’ll be with you in five minutes” (Else)

Smoking and COPD
The citizens were all former smokers and they were all to some extent aware of the influence of smoking on the development of COPD. They had not all stopped smoking, which was perceived as a psychological strain.

“(..)The worst thing is that I smoke. When it starts to get cold outside I can’t go out, I simply can’t breathe” (Grete)

Summary. All citizens were dependent on help and perceived limitations in their social life. Regardless of how long the citizens had been part of the intervention, they were satisfied with the online video consultations which made them feel safe and supported their knowledge, choices and skills to manage respiratory and other health problems. The possibility to have frequent online contact and regular home visits if needed was perceived as useful and positive. The online video consultations resulted in citizens taking more responsibility for their treatment. Their awareness of smoking as a health problem probably had an impact on their activities according to the action plans.

To build relations through online communication

Meeting the primary care nurse before meeting online reduces worries
All citizens perceived the online video consultations as personal and meaningful regardless of the severity of their health condition. The contact to the primary care nurse contributed to reducing citizens’ worries.

“She can give me advice when a pneumonia is coming up” (Else)

Eight of nine citizens underlined that it was necessary for the good collaboration that they had met the primary care nurse before they met online. Three experienced to have established a friendship with the primary care nurse. They preferred to discuss any problems with their regular primary care nurse.

“(..)if the substitute is on instead of my regular nurse, then I’m not saying that much, then it’s only about COPD problems” (Alice)

The screen gives a reduced picture of the citizen’s situation
One of the citizens stated that online video consultations could not give a full picture of the citizen’s situation and health. He was familiar with IT, physically active and mobile and received online video consultations every four weeks.
“(…)I would rather she’d come here…maybe she can tell how I am on the screen, but I just don’t feel it’s optimal…. it’s better when she comes to the house or I come to see her than through the screen…in principle you can just place it so she can only see my face. The face might not tell the whole story about how I feel” (Gorm)

Still he found that the primary care nurse was very good at pushing him to follow his action plan.

Summary. The online video consultations were perceived as professional, meaningful and personal. They contributed to reducing the citizens’ worries. Some citizens perceived to have a friendship with the primary care nurse. According to the citizens in general it was important to have met the primary care nurse before meeting online. One citizen who had online video consultations every four weeks wished to meet the primary care nurse face to face even though the online video consultations helped him.

Online rehabilitation and care is part of the future and it saves costs

Help to solve teething problems with IT
Citizens had varying experiences with technology. Three of them were very familiar with IT.

“But it’s not difficult…. I have Facetime and other stuff so the technology is not a problem” (Gorm)

Four citizens had no experience with technology.

“I needed to have the information more than once” (Bente)

Some initial problems related to operating the equipment and lack of network coverage were experienced.

“It doesn’t work that well because some days I just sit and look at a black screen and other days I can both see and hear her. I guess it’s teething problems” (Børge)

Several citizens tried to get help from relatives.

“My wife can also help” (Claus)

Others used the hotline.

“He fixed the iPad so I could press the icon and get access right away with the sound all turned up. So that was good (…) it’s very fine – I can see her and then we chat for about an hour” (Børge)

The future
Seven of the nine citizens found that internet-based technology in care and rehabilitation would be a part of the future. They believed technology could improve the municipal financial situation.

“Well the screen is something that’s been given to me (…) so the primary care nurse can have contact with all citizens in an easy way (…) to benefit her work” (Dorte)

“Well, I think it’s fine, it’s the future” (Grete)
Summary. The technology was not an obstacle to the feeling of personal presence. Despite the varying experience with IT, problems with operating the equipment and network coverage, the citizens did not perceive the technology as challenging. They knew where they could get help and managed to be patient with technological challenges. The problems were considered teething problems and the intervention was considered as a cost saving part of the future.

Needs of the primary care nurse to make supportive conversations

Professional knowledge, skills, assessment and compassion
All citizens expected the primary care nurses to have high professional competences and updated knowledge on COPD.

“The primary care nurse I’m in contact with must have updated knowledge on treatment…then I get the best possible” (Gorm)

The primary care nurses also assisted with IT problems.

“I tell the primary care nurse if there are problems and then she comes and helps me” (Else)

Citizens did not need to contact their general practitioner with questions related to COPD as their questions were answered by the online video consultations. Especially citizens who often needed changes in their medical treatment said that the intervention and the primary care nurses’ right to prescribe medicine saved time. Moreover, citizens believed they had received a better assessment in their own home.

“(…) getting treated right away…Previously it could take a couple of days before I was sure if it was pneumonia or…I thought it would pass” (Claus)

The citizens appreciated that the online video consultations were informal. The primary care nurses were personally involved, knew and understood the citizens’ situation and could act on the observations.

“But you always have to keep in mind she is the nurse, right… we talk as if we have known each other always…” (Bente)

Summary. The primary care nurse was expected to have updated professional knowledge about IT and COPD as well as insight into the individual citizen’s situation. The citizens appreciated that the primary care nurse initiated treatment if needed. They believed that the professional knowledge, assessment and activities were connected to the primary care nurse’s interest, compassion and personal involvement.

Discussion
The purpose of this study was to investigate the citizen perspective on and experience with online video consultations in the citizen’s home.

Four themes were constructed “To receive support online”, “To build relations through online communication”, “Online rehabilitation and care is a part of the future and it saves
costs” and “Needs of the primary care nurse to make supportive conversations”. In general, the themes showed that a good relationship with the primary care nurse was considered very important. This finding confirmed research showing that professionalism is based on the relational aspect in care and the ability to sense the whole person (13,23,25,34-36). This discussion focuses on how this type of mediated care had an impact on the citizens’ experience with online video consultations and the support they got in managing everyday life with COPD and in managing respiratory problems. The research questions frame the discussion; part one and part two and integrate the four themes.

Discussion part one according to the research question; How do citizens with severe COPD experience care when replacing the traditional primary care nurse visit in the citizen’s home with online video consultations through an online synchronous video communication platform?

This study showed that it was possible to build a relation through online video communication. Citizens experienced having informal, confidential and personal online consultations without any disturbances, which provided a sense of the nurse being present. A previous study has shown loss of confidentiality when using online video consultations (21). The present study showed that it was possible to maintain a sense of confidentiality and presence online. Seven of nine citizens pointed out that it was important to meet the primary care nurse face to face before establishing online collaboration, to sense the whole person, body language, smells and movements. This has also been reported in previous research (13,23,24,36). A few of the citizens felt they had a personal relation to the primary care nurse. Several citizens reported that if their regular nurse was replaced by another, they only discussed current issues related to their health and postponed discussing deeper thoughts and concerns. These statements indicate that important ethical values are at stake such as confidence, trust and empathy and that the citizen is perceived as an individual (13,25,32,34-36).

Seven of nine citizens thought the intervention was the future plan for cost-effective public care as they felt confident about the ethical aspects concerning privacy and confidentiality concerning patient data. This study thus contradicts that privacy and confidentiality may cause worry for citizens (13,25,28). According to research, people with severe COPD due to smoking, perceive their diseases as self-inflicted and experience self-blame and guilt (31,32). As all citizens of this study had been or still were smokers, it cannot be excluded that their cost-benefit argument also was an expression of self-blame and guilt not to be a financial burden on society (31,32).

Despite citizens’ varying experiences with IT they experienced the technology was user-friendly and that they were adequately supported in using the equipment. The initial technical difficulties did not dominate the positive experiences citizens had using the technology. This finding differs from Mclean (19) showing there could be potential pitfalls in user interface and technical problems. Also, that experiences with acceptance of and interest in technology amongst the elderly may vary and could constitute barriers (19,26,28).

This study confirms research that an integrated system could facilitate a personal conversation with synchronous communication with voice and gestures (29). According to Turner (37), the intervention could support the citizens’ quality of life. Seemingly, the technology used supported rehabilitation efforts and influenced the citizens’ sense of security. It was of great importance that the technology made it possible for the citizen to have frequent contact with the primary care nurse, who also could prescribe medication and arrange hospitalization. This finding and the finding of the major importance of the relation between the citizen and the nurse confirm that online video communication cannot be the only contact but
should be a supplement (13,17,23-25,28,36). According to Demiris (13) the lack of human touch in nursing due to online video consultations might be a problem. The fact that only a part of the human body is shown confirmed that the citizen’s health condition was not fully visible. Therefore, online video communication cannot fully compensate for regular visits in the citizen’s home (13,28). According to Pols (23), the reason why the relation in this study can be developed and maintained during the consultation is because it is technically possible to connect the persons. In this study the online video consultations were personal, professional, and undisturbed with mutuality in the relation as the primary care nurse and the citizen knew each other. As these conditions were present, the consultations according to Pols (23) could be focused and more intense than if the parties had been in the same room.

Eye contact during an online video consultation is intense according to Pols, although the two parties can stare at each other on the screen, but not directly into the eyes (23). The eye contact is maintained in 92% of the time; eye contact when the consultation takes place in the same physical room is maintained in about 50% of the time. In this study the citizens experienced an optimal framework for conversation with the primary care nurse. This finding rejects research from Pols (23) that feeling of having eye contact and the gaze of the primary care nurse could be experienced as threatening by the citizens.

Discussion part two according to the research question; How does this type of mediated care support the citizen in everyday life with COPD and in managing respiratory problems?

The citizens felt safe and their worries were reduced because the online video consultations reflected useful updated professional knowledge, respecting their individual health, needs, and situation. The primary care nurse was able to assess the situation and decide how to take care of the citizen’s health problems to prevent exacerbations. In this way results from previous research were confirmed showing that citizens perceived quality of online video consultations individually depending on their needs, personality and life situation (15,26).

The primary care nurse acted as a guide and listened to the citizens, and they experienced less emphasis were put on disability than on their ability to act in different ways in different situations regardless of their disease status. Focus was not on standardised procedures and guidelines but on their individually action plans. Thus, this study confirms the recommendations by Hedman (34) on attaching importance to the citizens’ perception of autonomy and participation.

During the online video consultations with the “regular nurse” and not the substitute, any problems were articulated and taken care of. In this way it was confirmed that the nurses showed sensitive specific attention towards the problems, expectations, and needs of the citizens. The citizens had confidence in the primary care nurse (35).

The citizens were guided to play a more active role in their treatment and personal action plan. Through improved ability to act on and cope with health problems and lifestyle the citizens’ well-being and self-confidence increased, which according to Hauge (38) is protective to loneliness. Due to severe health problems, some citizens in this study might experience loneliness (38). The citizens did not put loneliness into words during the interviews. Still most of the citizens talked about limitations in their social life.

The citizens experienced that online video consultations supported them in using respiratory training techniques, which improved their well-being. This study supports previous research confirming that teaching self-management strategies in nursing in combination with respiratory training has a positive impact on health (2,5,14,39).

In this study citizens to a varying extent were trying to cope with respiratory problems and accepting the disease by trying to live with COPD in what Cooney calls “controlled
co-existence” (31). Cooney describes this process as a fight where respiratory problems are linked to a sense of guilt. This study points out how the relation characterised by trust in the online video consultations contributed to overcoming mental strain such as guilt as citizens, according to Cooney, accepted professional help to optimise control of their breathing (31).

**Study limitations**

This study included citizens with chronic progressive disease. As participants would receive the intervention for a longer period of time, this study could have been stretched over a longer time period. In this way it would be possible to connect progression on the citizens’ health problems with experiences with online video consultations (3).

Moreover, the intervention is new and at the time of the study it was assumed to have considerable professional attention, which may impact positively on the citizens’ experiences (3). The primary care nurses recruited citizens to the study which has ethical implications and may be important to ethics, validity and reliability (40). Limitations in the recruitment method could be a small variation in the group of citizens. Their situation being dependent on help from the primary care nurse might have influenced their decision to take part in the project. Statements from citizens spontaneously and unanimously indicate widespread confidence in and satisfaction with the intervention strengthening the findings of this study.

Interview data include statements from citizens on living with COPD. To fully understand the citizens’ daily life, it could be relevant to conduct a secondary analysis of the interview transcriptions. The findings of this study could be further investigated in a large-scale study.

**Conclusion**

The citizens perceived that it was possible to build a relation and have informal, personal and confidential online video consultations with the primary care nurse. A safe room without any disturbances was established and a sense of presence maintained online. The care was based on sensitive situation-specific attention towards the individual citizen. The online video consultations strengthened the citizens’ autonomy and confidence in own abilities to cope with respiratory and other health problems, regardless of their health conditions and whether living alone or with family. The citizen took a more active role in their treatment and action plan and accepted help to optimize control of their breathing. The frequent online contact, the fact that the citizen knew the primary care nurse from visits at home prior to the online video consultations, and her updated knowledge and competences contributed to creating intimacy based on citizens’ needs. It provided safety and reduced worries that the primary care nurse had the possibility to offer individual follow-up visits in the home, to initiate treatment and hospital admission. The citizens appreciated the online video consultations as a future and a cost saving intervention. The citizens had different experiences with IT but did not consider the technology to be a barrier. They considered the technology as a tool to support them in actively taking larger responsibility for their disease.

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