Shaping Better Rehabilitation to Chronic Obstructive Pulmonary Disease Patients: Experiences of Nurses and Colleagues With an Interdisciplinary Telerehabilitation Intervention Global Qualitative Nursing Research Volume 9: 1–10 © The Author(s) 2022 Article reuse guidelines: sagepub.com/journals-permissions DOI: 10.1177/2333936221109890 journals.sagepub.com/home/gqn



Kimen til bedre rehabilitering til patienter med kronisk obstruktiv lungesygdom – Erfaringer blandt sygeplejersker og kollegaer, der har arbejdet med en interdisciplinær telerehabiliteringsintervention

Charlotte Simonÿ<sup>1,2</sup>, Marianne Neerup Andersen<sup>3</sup>, Rasmus Gormsen Hansen<sup>4</sup>, Lisbeth Schrøder<sup>5</sup>, Therese Gjerde Jensen<sup>6</sup>, Uffe Bodtger<sup>1,7,8</sup>, Regner Birkelund<sup>1,9</sup>, and Malene Beck<sup>2,10</sup>

## Abstract

In order to evaluate the reach of a collaborative cross-sectoral telerehabilitation intervention to patients with Chronic Obstructive Pulmonary Disease (COPD), this study investigates how nurses and interdisciplinary colleagues experienced working with it. In two focus group interviews, the experiences of working in the empowerment and tele-based  $>C \bigcirc PD$ -Life>> program were examined among three nurses and four interdisciplinary colleagues. Data were analyzed with inspiration from Ricoeur's theory of narrative and interpretation and discussed with Gittell's theory of relational coordination. Nurses and colleagues experienced that the intervention paved the way for unique patient-professional coordination and interdisciplinary cross-sectoral teamwork that allowed double-layered relational coordination, focusing holistically on patients' lived challenges in everyday life with COPD. By this rehabilitation setup, nurses and colleagues are perceived as educated to deliver high standard personalized support, raising professional pride and confidence. The findings can inspire future health-promoting initiatives within nursing support related to patients afflicted with COPD.

## **Keywords**

interdisciplinary collaboration, clinicians' experiences, telerehabilitation, COPD, interview, Denmark

## Abstrakt

Med det formål at lave en nuanceret evaluering af en telerehabiliterings-intervention til patienter med Kronisk Obstruktiv Lungesygdom (KOL), undersøgte vi sygeplejersker og kollegaers erfaringer med at levere en sådan intervention, som blev kaldt  $>C \odot PD$ -Life>>. Interventionen var empowerment-baseret og blev udviklet og udbudt af et interdisciplinært rehabiliteringsteam på tværs af primær og sekundær sundhedssektor. Via to fokusgruppeinterviews blev sygeplejerskernes og deres kollegaers erfaringer med at arbejde med  $>C \odot PD$ -Life>> undersøgt. Data er analyseret med inspiration fra Ricoeurs fortolkningsteori og diskuteret med Gitells teori om relationel koordinering. Sygeplejerskerne og deres kollegaer oplevede at interventionen banede vejen for unikt samspil og koordination mellem patienter og det interdisciplinære rehabiliteringsteam. Det åbnede for relationel koordinering i to lag, som muliggjorde holistisk tilgang til de udfordringer, som KOLpatienter skal

Creative Commons Non Commercial CC BY-NC: This article is distributed under the terms of the Creative Commons Attribution-NonCommercial 4.0 License (https://creativecommons.org/licenses/by-nc/4.0/) which permits non-commercial use, reproduction and distribution of the work without further permission provided the original work is attributed as specified on the SAGE and Open Access pages (https://us.sagepub.com/en-us/nam/open-access-at-sage). håndtere i deres hverdagsliv. Denne form for rehabiliteringstilbud viste sig, at træne sygeplejersker og deres kollegaer til at levere individuel støtte til patienterne i en høj standard, som samtidig medfører en øget professionel stolthed og sikkerhed. Fundene kan inspirere sygeplejersker og deres kollegaer til fremtidige sundhedsfremmende initiativer i arbejdet med KOL patienter.

### Nøgleord

interdisciplinært samarbejde, sundhedsprofessionelles erfaringer, telerehabilitering, KOL, interview, Danmark

Received November 24, 2021; revised May 18, 2022; accepted May 26, 2022

# Background

Chronic Obstructive Pulmonary Disease (COPD) poses considerable changes and challenges to peoples' daily living due to a fluctuating illness course (Cooney et al., 2013; Giacomini et al., 2012; Simonÿ, Andersen, et al., 2019). COPD is a leading global challenge associated with a significant burden of morbidity, comorbidity, disability, dependence, frequent hospitalization, and mortality (COPD Global Initiative, 2020). WHO estimates that 64 million people suffer from COPD, and the prevalence is rising (World Health Organization, n.d.).

Pulmonary rehabilitation is a central component in COPD care, as it enhances patients' sense of control, relieves dyspnea and fatigue, improves emotional function, health-related quality of life, and exercise capacity (McCarthy et al., 2015). COPD care is recommended to be delivered by interdisciplinary teams of health care professionals, including nurses (Global Initiative for Chronic Obstructive Lung Disease, 2020). However, little is known about the interprofessional dynamics between nurses and colleagues when delivering new health-promoting initiatives to people with COPD.

Guided by the framework of complex interventions (Moore et al., 2015; Richards & Hallberg 2015), researchers and a team of interdisciplinary clinicians from both the hospital and the health care center of the municipality developed a 6-month-long empowerment-based telerehabilitation intervention for people with COPD, entitled  $>C \bigcirc PD$ -Life>>. The prime aim of the intervention was to support people with COPD in leading a satisfactory and confident life with

<sup>1</sup>University of Southern Denmark, Odense, Denmark

<sup>2</sup>Naestved-Slagelse-Ringsted Hospitals, Region Zealand, Denmark

<sup>3</sup>Competence Center for Respiratory Diseases, Region Zealand, Denmark

<sup>5</sup>Naestved and Slagelse Hospitals, Denmark

- <sup>7</sup>Zealand University Hospital Næstved, Denmark
- <sup>8</sup>Zealand University Hospital Roskilde, Denmark

#### **Corresponding Author:**

Charlotte Simonÿ, The Research Unit PROgrez, the Department of Physiotherapy Occupational therapy, Naestved adn Slagelse Hospital, 4200 Slagelse and Institute of Regional Health Research, University of Southern Denmark, 5000 Odense, Denmark. Email: cpsi@regionsjaelland.dk

appropriate physical activity and high disease management (Simonÿ, Riber, et al., 2019).

Supplementing the health-promoting impact on patients, the experiences of the involved professionals are expected to contribute with valuable insight into interprofessional collaborative practice for nurses and colleagues, which in turn elucidates mechanisms crucial in the implementation process (Gilbert et al., 2010; Moore et al., 2015) and in relation to the nature of health-promoting pedagogy.

Therefore we aimed to explore how the affiliated nurses and interdisciplinary colleagues in this cross-sectoral cooperation experienced working in the empowermentbased telerehabilitation intervention  $>C \odot PD-Life>>$  to patients with COPD.

## Design

To investigate clinicians' experiences of working in  $>C\odotPD$ -Life>>, focus group interviews inspired by the methods described by Halkier (2009, 2020) were performed. Our aim was to let the nurses and colleagues describe their telerehabilitation intervention experiences in open and dynamic discussions that allowed them to use their own language and concepts (Halkier, 2020). This design was well-suited to give insight into the elements of challenges during the intervention test (Moore et al., 2015). Hence, this study also served as guidance to the organizations because the involved departments' managers can evaluate and learn from the findings. A phenomenological-hermeneutic approach guided the interview data interpretation and took inspiration from the theory of narrative and interpretation of the French philosopher Ricoeur (1976, 1984).

<sup>&</sup>lt;sup>4</sup>Naestved Municipality, Denmark

<sup>&</sup>lt;sup>6</sup>Slagelse Municipality, Denmark

<sup>&</sup>lt;sup>9</sup>Vejle Sygehus, Denmark

<sup>&</sup>lt;sup>10</sup>Aarhus University, Aarhus and Emdrup, Denmark

# Setting and Interventional Context

## Clinicians Participating in a Complex Intervention

To ensure a proper clinical and organizational setup together with alignment and genuine ownership, the project leader, who is the first author, engaged the interdisciplinary clinicians in the intervention design (Craig et al., 2013; McCormack et al., 1999).

First, the clinicians were gathered at the beginning of March 2017 for an 8-hour start-up workshop. The purpose was to introduce them to each other and start the collaboration of designing the intervention program. A few of them knew each other in advance due to earlier work relations. For 6 weeks (March and April), they continued working on the program design in various group meetings according to their specific tasks. Also, they all participated in a shared 2-day introduction program to the IT system. They provided a 2-week feasibility test with three patients before the intervention started at the end of April 2017.

## Approach Within the Complex Intervention

The clinicians chose an empowerment-based approach to found the development of a health-related critical consciousness among the patients (Simonÿ, Riber, et al., 2019). With reference to the philosophy of the Brasilian Professor Freire (1996, 2005), we strived to make a concept that supported the patients to gain the capacity to adapt to reality and to make health-related choices that transform this reality in ways that aligned with their wishes, resources, and goals (Simonÿ, Riber, et al., 2019). Accordingly, dialogue based on love, hope, humbleness, and equality was critical in supporting the participants to gain the necessary critical consciousness (Freire, 1996).

### Actions Within the Complex Intervention

Three group-based sessions with exercise and education were offered each week. In addition, individual consultations were held on personal demand (Simonÿ, Riber, et al., 2019). The clinicians planned for some group sessions to be held by only one staff representative, while two or more representatives offered other sessions together. Individual consultations were held with clinicians allocated to patients' wishes and query (Simonÿ, Riber, et al., 2019). A thorough presentation of the rationale, the content, and the delivery of the 26-week program is available elsewhere (Simonÿ, Riber, et al., 2019). Patients referred to traditional pulmonary rehabilitation were recruited for the intervention. The rehabilitation team offered the rehabilitation program to two groups of COPD patients, using two-way audio and visual communication software. The first course ran from April 2017 to October 2017 (nine participants) and the second from October 2017 until April 2018 (six participants). In a previous study it is shown how the participating patients experienced the intervention to support them in raising illness

mastery, leading to improving independence, functioning, and wellbeing (Simonÿ et al., 2020).

# Clinicians' Collaboration During the Complex Intervention

The rehabilitation team communicated with the patients, both in group sessions and by one-to-one contacts in individual consultations. They collaborated closely and exerted ongoing interactive coordination while providing the program. In this work, they used the communication software, cellphones, or they met in person regarding what was most suitable for them. One month after starting the program, all the clinicians participated in a 6-hour status workshop in a hospital meeting room. Here they made an overall status and planned relevant adaptations. In what followed, they held status meetings every third month. In September 2017, a 4-hour workshop took place with the primary purpose of designing the second intervention with relevant adjustments. Here the clinicians decided to organize formal status meetings to optimize coordination concerning the patients' shifting requirements. Accordingly, scheduled clinician status meetings took place every fortnight by the use of audio-visual communication software.

*Participants.* Selected by leaders in the clinical departments, three nurses, two physiotherapists, two occupational therapists, and a lifestyle coach were invited to work on the project (Table 1).

We invited all eight clinicians to participate in focus group interviews. Two separate interviews were conducted to allow more varied nuances than what could be expected to be formed by only one interview (Halkier, 2020). We organized it as a mix of different professions and sectors in each group. All clinicians accepted by written consent, but one (the lifestyle coach) missed the interview due to logistic issues. Hence one group of three and another of four clinicians gave interviews.

Data collection. Guided by the practices of Halkier (2009, 2020), the last author performed the two focus-group interviews a few weeks after they had finished delivering the >C<sup>©</sup>PD-Life>> intervention. The interviewer moderated the clinicians to disclose and discuss their experiences dynamically (Halkier, 2009, 2020). According to Brinkmann (2014) interviewing is a craftsmanship developed through experience. We therefore chose an experienced focus group interviewer to conduct the interviews to ensure solid data collection. The shown semi-structured interview guide was used to encourage the interdisciplinary clinicians to discuss and elaborate on their experiences working with  $>C \odot PD$ -Life>>. Immediately after each interview, last author shared initial impressions of both interactions and the consent with first author. Last author wrote short notes to this, which were added to the transcriptions. One interview lasted for 103 and the other for 92 minutes. They were audiorecorded and transcribed by first author.

Professional title	Affiliation during intervention	Years of clinical experience/ years of experience with COPD patients	Specialized education within COPD care
Registered nurse	Hospital	13/13	Diploma in COPD care, treatment, and rehabilitation
Registered nurse, consultant	The region	22/22	Diploma in Chronic Obstructive Pulmonary disease and Diploma in Prevention and Health promotion for people with Chronical Disease
Registered nurse	Municipality	13/3	A clinical course in Non-invasive ventilation care
Physiotherapist	Hospital	4/4	_
Physiotherapist	Municipality	12/12	Specialized education in COPD exercise and respiratory physiotherapy
Occupational therapist	Hospital	15/4	A clinical course in COPD care, treatment, and rehabilitation
Occupational therapist	Municipality	24/8	_
Lifestyle coach	Municipality	4/4	_

Table I. Information on the Clinicians Who Provided the Intervention.

A copy of the interview guide is available as a Supplemental Material.

*Ethics.* The Ethical Committee of Region Zealand, Denmark (SJ-559) and the Danish Data Agency in Zealand (REG-071-2016) approved this study, and their guidelines were followed along with the ethical principles of the Declaration of Helsinki (World Medical Association, 2013). All participants were informed about guaranteed anonymity, that they could withdraw consent at any time, and that data handling according to current standards would be kept confidential.

Data interpretation. Following the thinking of Ricoeur (1976, 1984), interpretation of texts with peoples' narrations of experiences can open for new insight into how the world is experienced with regards to what is talked about. Therefore, we analyzed the interview texts guided by Ricoeur's theory on narrative and interpretation (Dreyer & Pedersen, 2009; Ricoeur, 1976).

We followed the procedure of conducting: (1) Naïve reading. (2) Structural analysis. (3) Critical interpretation and discussion. These stages are connected by moving back and forward in-between the phases in what can be considered a dialectical interviewing movement. Ricoeur (1976) describes this as a movement from a naïve understanding to a sophisticated understanding of the text.

In the naïve reading, we read the data material several times to capture what it was all about. We let the data speak to us and provided an initial naïve understanding (Ricoeur, 1976) of what the clinicians experienced.

In the structural analysis, we structured and explained the text by units of meaning (what is said), units of significance (what is being talked about), and themes.

By critical interpretation and discussion, we further interpreted the text by including other research and the theory of relational coordination by Jody Hoffer Gittell. Hereby, the findings were brought to a general level (Dreyer & Pedersen, 2009; Ricoeur, 1976). All authors contributed to the interpretation. In Ricoeur's (1976) terms, we gained a "sophisticated understanding" of the clinicians' experiences from working with **COPD-Life>>**. The coherent process constitutes a dialectical movement between the three stages shown in Figure 1.

The overall concept of the naïve reading was that it was eye-opening, engaging, and challenging to deliver the intervention. Seemingly nurses and colleagues considered that the reach of rehabilitation support was improved in this empowerment-based online setup compared to the usual COPD rehabilitation and care. They experienced being played wiser on patients' challenges in everyday life with COPD. Moreover, they discovered a new potential within the interdisciplinary collaboration on supporting the individual.

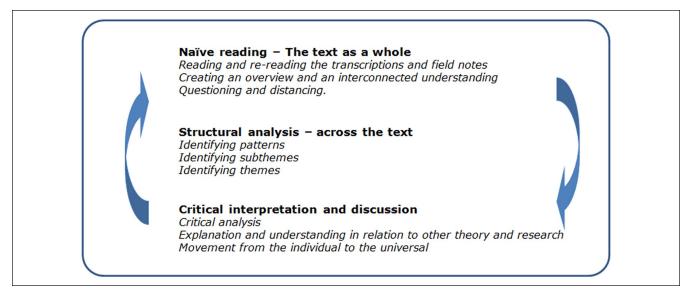
Two themes were identified from the structural analysis; (1) Access to real-life challenges in everyday living with COPD. (2) An open-minded and focused interdisciplinary team collaboration. These themes are described in the section of results, including selected quotes from the interviews (I). In the discussion section, we present the critical interpretation and discussion along with the inclusion of other research and the theory of relational coordination by Jody Hoffer Gittell.

## Results

The three nurses and their colleagues experienced delivering **C**©**PD-Life>>** significantly different and better than the usual COPD rehabilitation.

# Access to Real-life Challenges in Everyday Living With COPD

Nurses and colleagues found how they communicated with the patients in  $>C \odot PD$ -Life>> as being markedly different from their usual practice. They considered it a more suitable approach to COPD patients because it gave rise to what



**Figure 1.** The relation between the three stages of interpretation.

Note. The interpretation occurs in dialectical movements between three stages, consisting of a naïve reading, structural analysis, and critical interpretation and discussion (Simonÿ et al., 2018).

they described as rewarding patient-professional cooperation. They made it clear that the easy way of getting in touch with the patients via the online system was a positive gain. One stated: "*It is cool how you can get so much involved over the screen*" (I 1).

First, the clinicians had worries about shifting from the well-known face-to-face communication to the virtual form. Nevertheless, it soon surprised them how they "got under the skin" (I 1 and 2) of the patients and established a quite "intimate"(I 1) connection with them.

A physiotherapist said:

Here I gained a much broader spectrum to collaborate with the patients. And I got a profound insight into their ups and downs, along the way" (I 1). A nurse said:" Usually, I have minimal time with the patients because I need to finish up and move on with other patients. But in this setup, you have the possibility of getting it all through from A to Z (I 2).

These quotes indicate that the close and long-lasting relationship with the patients provided nurses and colleagues with a more nuanced insight into the multiple facets of rehabilitation. They appreciated this way of working with the patients because it allowed them to understand what was at stake in each case. In this setup, they considered themselves having established a unique patient-professional collaborative alliance, which placed the patients in the center and enhanced ensuring and reassuring a shared goal setting. Nurses and colleagues experienced this patient-centered collaboration as educating because it made them better understand the complex challenges of managing living with COPD. An occupational therapist said it this way: "*It was very enlightening. Now I understand much more of what is at stake to the patients in the lived life with the disease*" (I 2). It was eye-opening for the clinicians from the hospital to get insight into: "the other side of the hospital-based program and the plan, which we send for further exercise to the municipality" (I 2). Also, the visual insight into the patients' homes via the online system was considered a positive gain. Likewise, the clinicians from the municipality described that they achieved new insight into the nuances of the patients' clinical challenges. They thought this a significant contribution to a clearer picture of each case and an improved understanding of the patients' clinical status variations. Accordingly, they learned how to improve rehabilitation support, resulting in a higher level of quality than usual.

Especially the nurses deemed an open, trustful relationship with the patients as the vital component in the patientprofessional alliance in  $>C \odot PD$ -Life>>. The interviews reflect that frequent eye-to-eye contact allowed them to explore the patients' problems thoroughly as they arose along the way. They could thus make a shared professionalpatient interpretation of the particular situations. They said that through intimate dialogues they could often support the patients in realizing their troubles and accordingly make proper action plans with them. In this way, it was possible to continually evaluate and align progress on an individual basis. They considered this as shaping optimal rehabilitation for the patients. A nurse said: "I wish that this kind of relations could continue. Because in this frame, the patients open themselves to you" (I 2). They all agreed that due to such trustful and open cooperation, they became able to understand better what challenged the patients, and as one of them stated: "This is a holistic way because you can come across all aspects. You are genuinely allowed to aid to the fullest. I see it as luxury way of nursing" (I 1).

Nevertheless, it required new strategies to build up this relational, collaborative alliance with the patients. A nurse explained:

In **COPD-Life>>**, we became insistent. It is a highly vulnerable group of persons. They are used to a lot of rejection, so they will hastily withdraw if they get a sense that you are not into them. (I 1).

On the one hand, it was a challenge to establish close contact with the patients. Especially at the beginning of the telerehabilitation course, the clinicians needed to push most of the patients into this way of communication. They appreciated the online solution's inherent flexibility because it allowed frequent interaction, which they deemed a key to an empowerment-based collaboration with the patients. A backside of the coin was that when having this close communication with the patients, nurses and colleagues felt that it could quickly get out of hand because a broad range of the patients' problems became exposed. Thus it was an additional challenge to focus the support only on COPD-related issues in the long run.

# An Open-Minded and Focused Interdisciplinary Team Collaboration

While working together in the empowerment-based telerehabilitation, nurses and colleagues experienced breaking the usual siloed way of working and establishing a more interactive interprofessional approach. They considered it a challenging, transformative process that demanded courage and hard work. One physiotherapist said: "We were forced to be open-minded in this" (I 2). As clinicians, they needed to reconsider themselves, which meant they felt obligated to "step up" facing their professional limitations and extend their clinical know-how. It turned out to be an inherent part of the work to "engage and improve insight into what other professions' angles can contribute" (I 2). They disclosed that they did and accordingly became encouraged to develop a new kind of collaborative teamwork.

They compared their partnership to a ball game several times in both interviews. They illustrated that they came to view themselves as players who fought together, intending to win—in this case, winning meant "*providing the best possible support to the patients so that they could manage better*" (I 2). As team players, they found it engaging to contribute their professional skills to achieve this goal. They disclosed how this team play caused a rise in the clinical standard compared to their usual practice, which a physio-therapist described in this way: "*We took the patients to a far better level*" (I 2).

The nature of this teamwork gave them a vastly better clinical outreach. A nurse said: "It took me by surprise how we could make grand solutions for each patient when sharing knowledge in the team meetings" (I 2). An occupational therapist supplemented: "I agree, and the point is that the solutions we made had a positive impact on the patients" lives" (I 2). This working method allowed them to create a shared examination of each patient's situation and resources. Hereby, they obtained genuinely shared goalsetting, which also paved the way for straightforward coordination of who was to take the clinical lead. Accordingly, they acknowledged how other clinicians could aid the patients regarding issues that should be prioritized higher than they were professionally capable of. Therefore, the clinicians' overall perspective on rehabilitation changed because they realized how many aspects they needed to address. In line with this, they discovered that it was necessary to bring their varied clinical angles at play to target the multifaceted challenges. Also, they highlighted that empowering a person to manage life with COPD requires much more patience than they had realized earlier. Therefore, the clinicians viewed the opportunity to support the patients for 26 weeks as valuable.

It was engaging for the clinicians to experience this interprofessional and cross-sectoral teamwork. They explained how it made their sense of professional pride and confidence rise. Knowing each other by name and face and having easy access to meet and collaborate was treasured by them. They described that in this setting, they felt safe and comfortable. Moreover, they trusted and supported each other, leading to a feeling of high clinical security. They came to view themselves as part of a strong team in which they enhanced their expert insight and skills. A nurse explained it this way: "We discovered that by being in the same "room," we could provide something extraordinary to the patients. So we need to do more of this" (I 2).

In contrast, they described the usual rehabilitation practice as fragmented with poor coordination and communication, leaving the patients in limbo without sufficient support. Opposite to this, they considered their teamwork during **COPD-Life>>** to include positive interprofessional dynamics leading to excellent well-coordinated rehabilitation support. While colleagues nodded in agreement, a nurse stated: "It was a great lesson for us. We have proven that clinical teamwork can make a huge difference in the life of a person" (I 1).

## Discussion

This study shows how nurses and interdisciplinary colleagues experience delivering an empowerment-based telerehabilitation intervention to patients with COPD across health care sectors. Remarkably, the work shape doubled layered collaboration with patients and colleagues, also educating the clinical team.

# Doubled Layered Collaboration in the Telerehabilitation Intervention

In  $>C \odot PD$ -Life>>, clinicians and patients can collaborate closely on patients' lived challenges during rehabilitation. This collaboration draws upon a growing relationship between the parties. While delivering  $>C \odot PD$ -Life>>,

nurses and colleagues perceive themselves as team players who collaborate closely to address patients' individual needs, leading to considerably better support. These findings are likely to reflect what the American professor of management, Gittell (2009) and Gittell et al. (2013), describes as relational coordination. Gittell (2009) argues that relational coordination includes frequent, timely, accurate, and problem-solving communication, drawing on shared goals, shared knowledge, and mutual respect-relations. She highlights that relational coordination accentuates a high health care quality and efficiency by enabling "participants to manage their task interdependencies with fewer dropped balls and less wasted effort" (Gittell et al., 2013, p. 201). This is supported in another study of this intervention showing how the participating patients finds >C<sup>O</sup>PD-Life>> improving access to board health care support that leads to raised independence, functioning, and wellbeing in their daily life (Simonÿ et al., 2020). Based on the coherent findings regarding the >C<sup>©</sup>PD-Life>> intervention, we argue that this kind of empowerment-based interactive telerehabilitation facilitates relational coordination, leading to increased clinical aid. Nurses and colleagues achieve a more nuanced insight into the varied facets of daily living with COPD than practice in usual COPD rehabilitation, through a unique patient-professional interactive alliance. The novel factor is that the clinical team can support COPD patients in managing individual challenges and thereby solve problems through close collaboration on shared goals (Gittell et al., 2013).

Our findings reflect an emerging holistic view of patients in the empowerment-based approach. A study by Sharma and Clarke (2014) emphasizes that nurses find telehealth solutions to communicate relevant information to patients and enhance informed decision-making effectively. Furthermore, they highlight that nurses' experience tele solutions to increase their workload, but correctly so because they support patients with relevant clinical issues, for example by being more reactive to exacerbation events (Sharma & Clarke, 2014). This study contributes a new angle on this by showing that through the close interprofessional and crosssectoral teamwork, nurses and colleagues experience providing far better individual support due to thorough holistically orientated examination and strong coordination. Accordingly, frequent patient-professional communication is worthwhile to COPD patients' shifting clinical status. Admittedly, the workload of telerehabilitation programs is expected to increase compared to the usual practice in rehabilitation. Also, the setup for  $>C \odot PD$ -Life>> indicates a need for developing new models of organization and a longerlasting timeframe in rehabilitation to patients with COPD. Nevertheless, such changes are likely to prevent unnecessary clinical decline and other psycho-social problems and, therefore, seemingly relevant. In line with Gittell's (2009) points, such a way of working is a powerful driver of high quality and efficient patient care. In this case the empowermentbased intervention seemingly allows holistic oriented relational coordinated care. Besides including patient benefits

that leads to improved independence, functioning, and wellbeing in patients' everyday life, as shown previous (Simonÿ et al., 2020), it is notable how clinicians perceive their work in  $\geq C \otimes PD$ -Life>> as establishing enhanced professional pride and confidence in their rehabilitation work.

## A Clinical and Organizational Educating Setup

Our findings illuminate that nurses and colleagues learn to perform what they considered as excellent rehabilitation in **COPD-Life>>**. The rehabilitation form educates both clinicians and organizations to operate more holistically than usual.

At one level, the clinicians achieve more nuanced insight into the facets of life with COPD through the unique patientprofessional collaborative alliance in  $>C \odot PD$ -Life>>. Besides being inherent in the empowerment-based approach, it allows clinicians to understand better what is at play to the individual. Thus being clinically educating.

At another level, the rise of interdisciplinary solid team collaboration extends nurses' and colleagues' insight into the field of rehabilitation to patients with COPD. Gittell (2009) emphasizes that relational coordination is based on mutual positive regard. This means that, for example, trust and active enthusiasm engage people, make them openminded, and provide them with the feeling of being competent and "alive" (Gittell, 2009, p. 19). In this light, we can anticipate the educating potential of relational coordination to have highly positive effects to the clinicians. As our study reflects, it improves the clinicians' understanding of rehabilitation mechanisms by focusing on the patients' point of view and thus raising a holistic orientation in health care. Since this improves clinical confidence and reaches, it can enhance clinical creativity and skills.

This study moreover highlights that working within this intervention requires the courage of nurses and cross-sectoral colleagues to recognize their limitations and open themselves to extended professional horizons. To do this, it takes personal robustness, as our clinicians disclose. Other findings of clinicians' experiences in telerehabilitation furthermore emphasize that it takes strong project organization and leadership to manage the implementation of tele solutions (Damhus et al., 2018). Hence, it is likely possible to tear down the well-known silo-way of working between various health care sectors (Auschra, 2018; Petersen et al., 2020; Wodskou et al., 2014) by interventions as  $>C \odot PD-Life>>$ .

There are no shared journals across sectors in the Danish health care system but merely a limited, short written communication. Lack of shared information about particular patients can impede collaboration and negatively affect the integration of services across sectors (Lyngsø et al., 2016). This study highlights that interdisciplinary clinicians can break this barrier by sharing knowledge via online meetings. Such online collaboration might pose the good potential to further cross-sectoral health care collaboration, leading to better-integrated care models. In sum, it is encouraging that a minor-scale complex intervention project from clinical practice is enough to create a holistic health care orientation with frequent, timely, accurate, and problem-solving communication and relations based on shared goals, shared knowledge, and mutual respect. The study also highlights the importance of nurses' role in successful rehabilitation. Also, contextual gains and problems are likely to emerge during intervention processes. Knowledge of this is essential to future implementation and research (Moore et al., 2015).

### Methodological Considerations

This study contributes to the emerging knowledge of telerehabilitation, but it has several limitations. The findings are based upon the experiences of three nurses and five interprofessional colleagues working with one specific telerehabilitation solution—COPD-Life>>—in the Danish health care system. Therefore, the results must be read with caution in relation to various telerehabilitation programs or another setup respectively, because the findings cannot be generalized. A vital component is that this intervention is of a longer duration compared to usual rehabilitation practice. Nevertheless, the findings can tribute with valuable insight into the consequences of implementing a complex intervention within the field of telerehabilitation to COPD patients.

The choice of a qualitative design to capture emerging changes in implementation is in line with (Moore et al., 2015). We conducted two separate focus group interviews to allow nuanced group dynamics within each group to provide varied data on the research question (Halkier, 2009). According to Malterud (2011), variation in qualitative data is essential to elaborate on "rich" findings.

A phenomenological-hermeneutic approach was used to interpret the interviews. We took inspiration from the theory of the French philosopher Paul Ricoeur (1976). Following the philosophies of Ricoeur (1984), the narratives obtained through the focus group interviews revealed the clinicians' (professional) life worlds in the context of the intervention. Using this approach, it became possible to investigate something new of being-in-the-world as a professional during an intervention different from usual rehabilitation practice.

Furthermore, external to the intervention, last author conducted the interviews and co-led the analysis and discussion to address the research matter to provide sufficient independence (Moore et al., 2015). A premise in the use of a Ricoeur-inspired interpretation is that others could have reached other findings. However, the three level analysis process bears an internal validation within the data material and transparency because the quotes support the descriptions of the identified themes (Dreyer & Pedersen, 2009). In addition, the collaboration with the managers of the involved departments of the rehabilitation intervention in this analysis ensures creditability because they represent an outsiderand realistic practice view.

## Conclusion

Nurses' and interdisciplinary colleagues' experiences from their work with the empowerment-based cross-sectoral telerehabilitation program >C<sup>O</sup>PD-Life>> reflect an example of double-layered relational coordination. By establishing a collaborative patient-professional alliance and interdisciplinary team collaboration, an educative character is founded on health-promoting work. As a result, the clinicians raised their capability to provide excellent rehabilitation to COPD patients. The 6-month-long intervention program built up a new rehabilitation milieu with frequent, timely, accurate, and problem-solving communication based on shared goals, shared knowledge, and mutual respect, leading to holistic healthcare support. Furthermore, nurses and colleagues find themselves educated to deliver high standard personalized support raising professional pride and confidence. In this respect, the role of nurses in COPD rehabilitation is shown fruitful.

However, this requires multiple considerations because it is challenging to adapt to and include a more holistic approach and thus profound change in collaboration, coordination, and timeframe for rehabilitation. It takes strong leadership, courage to change routines and organizations, and high professional safety to implement significantly different rehabilitation. Knowing that double-layered relational coordination in rehabilitation can enhance the multifaceted challenges of COPD patients' living can inspire future rehabilitation programs and other nurse-related health-promoting complex interventions.

### Acknowledgments

We owe the sincerest thank to the clinical staff who, with high engagement and an open mind, have made this intervention possible. We highly value the generously sharing of experiences from this work with us. Also, we thank the participating COPD patients who allowed this intervention test. For language revision, we thank Jørgen Refshauge.

#### **Declaration of Conflicting Interests**

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

### Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work was supported by Grants from; The Research Foundation of Naestved, Slagelse, and Ringsted Hospitals, The Foundation for Health Research in Region Zealand, The Fund of Development and Research by Danish Regions & Danish Health Confederation, and The Foundation of Development of Clinical Practice for Danish Physiotherapists.

## ORCID iD

Charlotte Simonÿ D https://orcid.org/0000-0003-1189-2967

### **Supplemental Material**

Supplemental material for this article is available online.

#### References

- Auschra, C. (2018). Barriers to the integration of care in inter-organisational settings: A literature review. *International Journal of Integrated Care*, 18(1), 1–14. https://doi.org/10.5334/ijic.3068
- Brinkmann, S. (2014). *Interviews: Learning the craft of qualitative research interviewing* (3th ed). SAGE.
- Cooney, A., Mee, L., Casey, D., Murphy, K., Kirwan, C., Burke, E., Conway, Y., Healy, D., Mooney, B., & Murphy, J. (2013). Life with chronic obstructive pulmonary disease: Striving for "controlled co-existence." *Journal of Clinical Nursing*, 22(7–8), 986–995. https://doi.org/10.1111/j.1365 2702.2012.04285.x
- COPD Global Initiative. (2020). 2020 Report. Global initiative for chronic obstructive lung disease. Author. https://goldcopd. org/wpcontent/uploads/2019/12/GOLD-2020FINAL-ver1.2-03Dec19 WMV.pdf2020
- Craig, P., Dieppe, P., Macintyre, S., Michie, S., Nazareth, I., & Petticrew, M. (2013). Developing and evaluating complex interventions: The new medical research council guidance. *International Journal of Nursing Studies*, 50(5), 587–592. https://doi.org/10.1016/j.ijnurstu.2012.09.010
- Damhus, C. S., Emme, C., & Hansen, H. (2018). Barriers and enablers of COPD Telerehabilitation – A frontline staff Perspective. *International Journal of COPD*, 13, 2473–2482. https://doi.org/10.2147/COPD.S167501
- Dreyer, P. S., & Pedersen, B. D. (2009). Distanciation in Ricoeur's theory of interpretation: Narrations in a study of life experiences of living with chronic Illness and home mechanical Ventilation. *Nursing Inquiry*, *16*(1), 64–73. https://doi.org/10.1111/j .1440-1800.2009.00433.x
- Freire, P. (1996). *Pedagogy of the oppressed*. (2nd ed.). Penguin Group.
- Freire, P. (2005). Education for critical consciousness (2005 ed.). Continuum. http://abahlali.org/wp-content/uploads/2012/08/ Paulo-Freire-Education-for-Critical-Consciousness-Continuum -Impacts-2005.pdf
- Giacomini, M., DeJean, D., Simeonov, D., & Smith, A. (2012). Experiences of living and dying with COPD: A systematic review and synthesis of the qualitative empirical literature. Ontario Health Technology Assessment Series, 12(13), 1–47. www.hqontario.ca/en/mas/tech/pdfs/2012/rev\_COPD\_ Qualitative March.pdf
- Gilbert, J. H. V., Yan, J., & Hoffman, S. J. (2010). A WHO report: Framework for action on interprofessional Education and collaborative practice. *Journal of Allied Health*, 39(Suppl. 1), 196–197.
- Gittell, J. H. (2009). *High performance healthcare Using the power of relationships to achieve quality, efficiency and resilience* (1st ed.). Mc Graw Hill.
- Gittell, J. H., Godfrey, M., & Thistlethwaite, J. (2013). Interprofessional collaborative Practice and relational Coordination: Improving Healthcare through Relationships. *Journal of Interprofessional Care*, 27(3), 210–213. https://doi.org/10.31 09/13561820.2012.730564
- Halkier, B. (2009). *Fokusgrupper* [Focus groups] (2nd ed.). Forlaget Samfundslitteratur.

- Halkier, B. (2020). Fokusgrupper [Focus groups]. In S. Brinkmann & Tanggaard (Red) "Kvalitative metoder. En grundbog" [Qualitative methods: A basic book] (3rd ed). Hans Reitzels Forlag.
- Lyngsø, A. M., Godtfredsen, N. S., & Frølich, A. (2016). Interorganisational integration: Healthcare professionals' perspectives on barriers and facilitators within the Danish healthcare system. *International Journal of Integrated Care*, 16(1), 4. https://doi.org/10.5334/ijic.2449
- Malterud, K. (2011). Kvalitative metoder i medisinsk forskning: en innføring [Qualitative methods in medical research: An Introduction] (3th ed.). Universitetsforlaget.
- McCarthy, B., Casey, D., Devane, D., Murphy, K., Murphy, E., & Lacasse, Y. (2015). Pulmonary rehabilitation for chronic obstructive pulmonary disease. *The Cochrane Database of Systematic Reviews*, 2, CD003793. https://doi.org/10.1002/146 51858.CD003793.pub3
- McCormack, B., Manley, K., Kitson, A., Titchen, A., & Harvey, G. (1999). Towards practice development—A vision in reality or a reality without vision? *Journal of Nursing Management*, 7(5), 255–264. https://doi.org/10.1046/j.1365-2834.1999.00133.x
- Moore, G. F., Audrey, S., Barker, M., Bond, L., Bonell, C., Hardeman, W., Moore, L., O'Cathain, A., Tinati, T., Wight, D., & Baird, J. (2015). Process evaluation of complex interventions: Medical research council guidance. *BMJ*, 350, h1258. https://doi.org/10.1136/bmj.h1258
- Petersen, L., Birkelund, R., & Schiøttz-Christensen, B. (2020). Challenges to cross-sectoral care experienced by professionals working with patients living with low back pain: A qualitative interview Study. *BMC Health Services Research*, 20(1), 1–10. https://doi.org/10.1186/s12913-020-4988-y
- Richards, D., & Hallberg, I. R. (2015). *Complex interventions in health*. Routledge and Taylor & Francis Group.
- Ricoeur, P. (1976). *Interpretation theory: Discourse and the surplus of meaning* (5th ed.). Texas Christian University Press.
- Ricoeur, P. (1984). *Time and narrative* (Translated). University of Chicago Press.
- Sharma, U., & Clarke, M. (2014). Nurses' and community support Workers' experience of Telehealth: A longitudinal case study. *BMC Health Services Research*, 14(1), 164. https://doi. org/10.1186/1472-6963-14-164
- Simonÿ, C., Andersen, I., Bodtger, U., & Birkelund, R. (2019). Breathing through a troubled Life – A phenomenologicalhermeneutic study of chronic obstructive pulmonary disease patients lived experiences during the course of pulmonary Rehabilitation. *International Journal of Qualitative Studies on Health and Well-Being*, 14(1), 1647401. https://doi.org/10.108 0/17482631.2019.1647401
- Simonÿ, C., Andersen, I., Bodtger, U., Nyberg, M., & Birkelund, R. (2020). Raised illness mastering – A phenomenological hermeneutic study of chronic obstructive pulmonary disease patients' experiences while participating in a long-term telerehabilitation programme. *Disability and Rehabilitation: Assistive Technology*. Advance online publication. https://doi.org/10.10 80/17483107.2020.1804630
- Simonÿ, C., Riber, C., Bodtger, U., & Birkelund, R. (2019). Striving for confidence in everyday life with chronic obstructive pulmonary disease: Rationale and content of the telerehabilitation programme >C©PD-Life>>. International

Journal of Environental Research and Public Health, 16(18), 3320. https://doi.org/10.3390/ijerph16183320

- Simonÿ, C., Specht, K., Andersen, I. C., Johansen, K. K., Nielsen, C., & Agerskov, H. (2018). A Ricoeur-inspired approach to interpret participant observations and interviews. *Global Qualitative Nursing Research*, 5, 1–10. https://doi. org/10.1177/233393618807395
- Wodskou, P., Høst, D., Godtfredsen, N., & Frølich, A. (2014). A qualitative study of integrated care from the perspectives of patients with chronic obstructive pulmonary disease and their relatives. *BMC Health Services Research*, 14(1), 471. https:// doi.org/10.1186/1472-6963-14-471
- World Health Organization. (n.d.). Chronic respiratory diseases. Author. https://www.who.int/health-topics/chronic-respiratorydiseases#tab=tab 1
- World Medical Association. (2013). Declaration of Helsinki ethical principles for medical research involving human subjects. *Journal of American Medical Association*, 310(20), 2191–2194. https://doi.org/10.3917/jib.151.0124

### **Author Biographies**

**Charlotte Simonÿ**, PhD, MES, RN, is an Associate Professor in rehabilitation and Illnessmastery at Institute of Regional Health Research, The University of Southern Denmark, Odense, Denmark & the Research Unit PROgrez, the Department of Physiotherapy and Occupational therapy, Naestved and Slagelse Hospital, Denmark.

**Marianne Neerup Andersen**, RN, is a leading counselor at the Competence Center for Respiratory Diseases, Region Zealand, Sorø, Denmark.

Rasmus Gormsen Hansen, PT, MSo, is the chief of the Department of Health and Geriatrics, Naestved Municipality, Denmark.

**Lisbeth Schrøder**, PT, MSo, is the chief of the Department of Physiotherapy and Occupational Therapy and Medicine 3, Naestved and Slagelse Hospitals, Denmark.

**Therese Gjerde Jensen**, PT, is the chief of the Department of Health and Geriatrics, Slagelse Municipality, Denmark.

Uffe Bodtger, MD, PhD is a Professor in Respiratory Medicine, at Institute of Regional Health Research, University of Southern Denmark, Odense, Denmark & Department of Respiratory Medicine, Zealand University Hospital Næstved and Roskilde, Region Zealand, Denmark.

**Regner Birkelund**, Phil, PhD, MNSe, is a Professor at Institute of Regional Health Research, The University of Southern Denmark, Odense. Denmark & Vejle Hospital, Vejle, Denmark.

**Malene Beck**, PhD, MNSe, is an Associate Professor in Nursing at Aarhus University, Aarhus and Emdrup, Denmark & the Research Unit PROgrez, the Department of Physiotherapy and Occupational therapy, Naestved and Slagelse Hospital, Denmark.