

“Looking for Deviations”: Nurses’ Observations of Older Patients With COPD in Home Nursing Care

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Abstract

Nurses working in home care play a significant role in observing and identifying changes in the health status of patient with chronic obstructive pulmonary disease (COPD). The aim of this study was to explore and describe nurses’ observations of older patients with COPD when providing home nursing care. In this qualitative explorative study, data were collected through observations of 17 home care visits using the think-aloud technique, followed up with individual interviews with the nurses. Qualitative content analysis was used to analyze the data. The findings showed that the nurses’ observations (focus, methods, and interpretation) were characterized by their search for deviations from what they judged to be the patient’s habitual state. The nurses did not use any tool or guidelines, nor did they follow a standard procedure. Instead, when observing and interpreting, they performed a complex process guided by their experience and knowledge of the patient, and the patient’s individual and contextual circumstances. This knowledge contributes to warranted reflection on nurses’ practice in this context to secure COPD patients’ safety and quality of life.

Keywords

home nursing care, primary care, older patients, nonparticipant observation, monitoring, clinical judgments, COPD, Norway

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Introduction

Chronic obstructive pulmonary disease (COPD) is a progressive, life-threatening lung disease that is expected to be the third-leading cause of death, worldwide, by 2030 (World Health Organization [WHO], 2017). COPD patients experience increasing vulnerability and unpredictable deteriorations, making them increasingly dependent on others for practical assistance. Episodes of acute breathlessness are an especially terrifying aspect of living with COPD (Disler et al., 2014), during which patients can sometimes experience the fear of sudden death (Giacomini et al., 2012). COPD exacerbations are also associated with increased probabilities of recurrence, hospital admissions, and death (Esteban et al., 2016; Suissa et al., 2012).

Most COPD patients live in their own homes and receive help from primary health carers (Schermer et al., 2008). Among older patients, COPD often exists in addition to an already challenging life situation, with multimorbidity, polypharmacy, and multiple functional limitations (Marengoni et al., 2011). Thus, these patients experience increased symptom burden and impaired quality of life. Common acute illnesses, such as upper respiratory tract infections, may also

have more severe impacts on patients with COPD (Schermer et al., 2008). The close observation of the health status of COPD patients is, therefore, especially important because a change in condition can signal an acute, life-threatening disease, requiring immediate action, which poses a major challenge for municipal health care services.

As frontline health care professionals, nurses play important roles in detecting patients’ needs and providing and delivering appropriate care to older patients with COPD. Nurses meet with patients on a regular basis and can observe their functional and health statuses, in their regular environments. Home care nurses are described as having a “specialist generalist role” (Dahl & Clancy, 2015) and are expected to care for patients with various diagnoses, sometimes with a

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limited experience base. Nurses have reported concerns regarding the consequences of COPD deterioration and can experience helplessness when watching patients struggling to breathe (Goodridge et al., 2008). Home care nurses can also experience barriers associated with the unpredictability of COPD, and they may lack disease insight (Scheerens et al., 2018).

According to Florence Nightingale (1860/1992), the most important practical knowledge that can be given to nurses is to teach them what and how to observe. Observation and monitoring belong to the first step in the nursing process of practice—a process that is synonymous with the newer concept of “clinical judgment” (Tanner, 2006). Clinical judgment is an essential skill for nurses. According to Tanner (2008), clinical judgment is based on a nurse’s knowledge, experience, reasoning, intuition, clinical thinking, and evidence-based practice skills. Nurses use these skills to assess and interpret patient information to identify and fulfill patient needs (Tanner, 2006).

A literature review of 14 studies that investigated nursing assessment practice in hospital wards (Odell et al., 2009) indicated that nurses detect patient deterioration primarily through intuitive judgment and pattern recognition. A more recent review reported that nurses’ clinical monitoring skills varied considerably depending on individual levels of professionalism (Bunkenborg et al., 2013). In the field of psychiatric nursing, nurses use three identified modes when observing patients: scanning, obvious and direct probing, and discreet and hidden observations (Hamilton & Manias, 2007).

Recognizing the early signs of patient deterioration has been a priority of The Norwegian Patient Safety Program (2014–2019). However, most activities related to patient safety have been examined and evaluated in hospitals (WHO, 2013). In primary care, the patient safety has focused on nursing homes (Vincent & Amalberti, 2016). Research studies examining COPD care at home have focused on telemedicine (Sorknaes et al., 2013), hospital at home (Ram et al., 2004), and nurse-led interventions (Yin et al., 2018). Although growing evidence has demonstrated the benefits provided by these interventions (Fletcher & Dahl, 2013), limited literature remains available regarding the generalist nurse in a home care situation when caring for older home-living patients with COPD. Therefore, this study aimed to explore and describe nurses’ observations of older patients with COPD when providing home nursing care.

Method

A qualitative explorative study was performed, using non-participant observations of home visits, field notes, and follow-up interviews with nurses. Nurses were encouraged to think aloud during patient visits and to verbalize their thoughts during observations of the patient (Ericsson & Simon, 1998). The think-aloud method is a qualitative

technique used to collect verbal data, which has proven to be effective for identifying problem-solving processes (Fonteyn & Ritter, 2008; van Someren et al., 1994). This method assumes that the amount of information that can be stored in short-term memory is limited, and that information processed in short-term memory using preexisting knowledge from long-term memory results in verbalized decisions (Ericsson & Simon, 1998; van Someren et al., 1994). Ericsson and Simon (1998) suggested that the information that is attended to in short-term memory during task performance is the only cognition-related information that is accessible and can be verbalized. Several nursing studies have been conducted using the think-aloud method, particularly studies that have examined clinical reasoning (Simmons et al., 2003). In the present study, the think-aloud method was used to collect verbal data during nurses’ tasks when visiting COPD patients at home.

Setting

The nurses were recruited from home care services in four municipalities, both rural and urban, in Mid-Norway. Health care services in Norway are a public responsibility that are tax-financed and have two levels. The Ministry of Health and Care Services has supervisory responsibility for hospitals and specialist care, whereas primary care is provided by local municipalities, including home care services that consist of both practical help (e.g., house cleaning and laundry) and home health nursing (e.g., wound care and hygiene). Home nursing care is performed by registered nurses (with at least a bachelor’s degree), assistant nurses, and other employees, with little or no formal training. Nurses are responsible for administering patient medications, performing medical procedures, and consulting with other health care professionals. This study focused on home nursing care provided to older patients with COPD, and only registered nurses were recruited to participate in this study.

Participants

An invitation including study information was emailed to the district nursing management of nine municipalities. The emails were followed up with telephone calls. Four municipalities responded positively, indicating a desire to participate in the study. The home care district management for these four municipalities were asked to recruit a purposeful sample of nurses. Because this study aimed to explore nurse observations of COPD patients in a naturalistic setting (during home visits), eligible patients were identified and included as a third party during the data collection process.

The inclusion criterion for nurses was employment in home nursing care for at least 6 months. The inclusion criteria for patients were receiving home nursing care on a daily basis, being diagnosed with COPD, and being 70 years or older. All participants received written and oral information

regarding the study and gave written consent before the data collection began.

One male and 14 female nurses consented to participate. Their work experiences ranged from 8 months to 35 years (mean 14 years). Five of the nurses had advanced educations: three with geriatric educations, one with both cancer and management educations, and one with a psychiatric education.

Ten patients (six women and four men), aged between 74 and 86 years (mean 81 years) consented to participate. Eight patients lived alone, and two lived with a spouse. All patients were followed up with medical treatments using an inhaler, a nebulizer, or both. Some of the patients were visited by several nurses (17 visits in total).

Data Collection

The data were collected between October 2017 and October 2018, in four municipalities, in Mid-Norway, through the observation of 17 nurse–patient interactions, during regular visits to the patients' homes. The observed nurse–patient interactions included in total 10 patients and 15 nurses, in the following order: six of the patients were visited by one nurse each, one patient was visited by two different nurses, and three patients were each visited by three different nurses. In addition, two of the nurses each visited two patients, whereas the remaining nurses (13) each visited only one patient. Individual follow-up interviews with the nurses were conducted immediately after the visits. Both the nurse–patient verbal interactions during the home visits and the follow-up interviews were audio-recorded. Handwritten field notes were taken during the patient visits.

Observation of nurse–patient interactions. A nonparticipant observation of the nurse–patient interaction was conducted during each home care visit. The nurses were introduced to the think-aloud method in advance of the patient visit. They were encouraged to verbalize their thoughts and actions when observing the patient, according to the think-aloud method, which aimed to identify the observations made by the nurses during the patient visits.

Patients were notified when the voice recorder was turned on. During assistance with personal hygiene, patients were asked for permission to allow the nurse to use the voice recorder in the bathroom. Each patient visit was audio-recorded and later transcribed, verbatim. The visits lasted, on average, 25 minutes. Field notes were taken to supplement the recorded interactions.

Interviews with nurses. A semi-structured follow-up interview was conducted, either in the nurse's official car or at the home nursing care office. Participants were interviewed according to the interview guide, and notes were made by the researcher during the nurse–patient interaction. The nurses were encouraged to explain their thoughts

while in the nurse–patient setting. The purpose of the interview was to provide and confirm the thoughts and actions observed during the nurse–patient interaction and to provide a venue for any thoughts that could not be spoken aloud during the nurse–patient think-aloud sessions, due to ethical considerations.

The nurses were asked to explain any actions or dialogue that the researcher noted. They were asked about their first impressions and what they first noticed during the patient visit. They were also asked which aspects were the most important to focus on with the patient during the visit, about their knowledge of the patient, and about what events they found important to report or document during each patient visit. The 17 interviews lasted 15 minutes, on average, and were audio-recorded and later transcribed, verbatim.

Data Analysis

The audio recordings from the nurse–patient interactions and the nurse interviews were transcribed into text and analyzed by an inductive and text-driven approach (Krippendorff, 2018), using qualitative content analyses, according to Graneheim and Lundman (2004). The transcripts were read several times, to obtain the whole picture of the nurses' observations of the patients. Each observed home care visit and the corresponding nurse follow-up interview was treated as one unit of analysis. The analysis began by carefully reading the first observation/interview, and meaning units were identified in accordance with the aim and condensed. The condensed meanings were then abstracted into codes, in accordance with the aim of the study. Then, the second observation/interview was analyzed in the same way and codes were compared with the codes in the first observation/interview. When all data (i.e., each observation/interview) had been processed the same way, the codes were analyzed across all observations/interviews to reach a higher level of abstraction of the data. Similar meanings in the codes were identified and grouped into eight subcategories that were later sorted into three categories. Finally, a main theme was identified, representing the latent and underlying meaning, through the analysis of subcategories and categories.

Ethical Considerations

The study was approved by the Norwegian Centre for Research Data (Number 54983). Approval by the Regional Committees for Medical and Health Research Ethics (REK, 2012) was not necessary (Number 855851), as the project did not concern health research on the participants. Permission to perform data collection was obtained from the health administration of each municipality. The researchers discussed the possible ethical challenges posed by using the think-aloud method, such as the ethical dilemmas that could occur when nurses are required to verbalize their thoughts in front of their patients. Before the interviews began, the

Table 1. Overview of the Main Theme, Categories, and Associated Subcategories.

Main Theme	Categories	Subcategories
Looking for deviations from habitual state	Focus of observation	Physical symptoms related to COPD Daily functioning Medication Mental state
	Methods for observation	Communicating with the patient and family members Looking for clues in the environment
	Basis for interpreting observation	Knowledge about the patient and their story Nurse education and experience

Note. COPD = chronic obstructive pulmonary disease.

informants were encouraged to discuss their observations aloud while simultaneously fulfilling their ethical responsibilities to the patient. The patients were informed that the interview conducted in their home would be audio-recorded and that no personal information would be recognized in the study. The patients were also informed that the study focused on nursing, and would not involve the patient directly.

Findings

One primary theme, three categories, and eight subcategories emerged from the analysis of the data. An overview of the analysis is shown in Table 1. The primary theme, *looking for deviations from habitual states*, was found to represent the underlying and latent meanings of the three identified categories: *focus of observations*, *methods for observations*, and *bases for interpreting observations*. The theme, categories, and subcategories are presented below, along with quotations from the interview text.

Main Theme: Looking for Deviations From Habitual States

The nurses did not seem to follow a plan when observing the patients. However, their focus, methods, and interpretations of observations appeared to be driven by the search for and recognition of patterns in the patient's health and functioning. Although they had difficulties explicitly expressing what they were looking for, or what they reacted to, the common denominator was *change*. The sense that something was different or changed about the patient was based on their preunderstandings of the patients' usual or habitual state. Habitual states are not static states or states that are strictly defined by their physical data but are spacious and dynamic, constituted by the nurse's knowledge of and experience with patient interactions, the patient's context, and the patient's own experiences of health and disease.

Focus of observation. Although none of the nurses appeared to apply any systematic approaches when observing patients, their observations seemed concentrated around four areas:

physical symptoms related to COPD, daily functioning, medication, and mental state.

Physical symptoms related to COPD. The patients' breath appeared to be a primary focus for all home care visits. Nurses explained that they focused on both breathing sounds and frequency, as well as posture, to observe whether the patients' conditions were as usual or exacerbated. One nurse said, "It is important to observe the breathing, the colour of the face, if the patient is breathing heavier, or if the patient looks tired or looks ill." Another nurse said that she observed how the patient talked and whether the patient appeared strained, exhausted, or tensed. Although being short of breath was a common state for most of these patients, the nurses said that they could tell whether the condition had worsened. One nurse's statement exemplified this type of observation:

He is always short-winded, but worse if he has been drinking the whole weekend . . . then, he doesn't eat much either . . . but today he was like . . . (the nurse puts up a big smile) . . . yeah, he really was . . . it's hard to explain.

Other nurses appeared to focus on the patients' facial expressions, "wild eyes," and expiration sounds. In the follow-up interviews, the nurses stated that they would collect data, such as blood pressure, temperature, or blood samples, only in reaction to something unusual. In one case, during which the patient's health status appeared to be deteriorating, the nurse observed skin temperature by palpating the patient's skin.

Although COPD was the primary focus during nurse observations of physical status, they also looked for signs and symptoms of other diseases, depending on each case. Examples included edema, diuresis, wounds, and blood sugar levels.

Daily functioning. When the nurses first entered the patient's home, they evaluated the patient's appearance, at a glance. They observed whether the patients had risen from bed, done their hair, and gotten dressed. One nurse said,

I saw her standing in the kitchen. She had arranged her hair and put on newly washed clothes. The apartment looked nice and the

bed was made. She was in good condition and was on schedule with her daily routines.

Any changes to the patient's self-care management made the nurses more attentive and vigilant. A patient's ability to maintain personal hygiene could be an important indicator of daily functioning. One nurse described the following:

She washed her face and under her arms herself, but I helped her with the back and private parts, 'cause she was very fast breathing this morning. I watched her standing there, clinging to the sink . . . hanging with her head in a way, trying to save her breath. She said nothing, but I noticed she thought it was heavy.

A conversation between a patient and a nurse demonstrates how the nurse realizes that the patient's daily function has improved:

Patient (P): "Then we go to the bathroom . . ."

Nurse (N): "We do? I think it's the first time we go to the bathroom together. Earlier, you have always had help with the morning care lying in the bed."

P: (laughs)

N: "It's something new . . ."

P: "It's good to get up in the morning."

Medication. The nurses paid close attention to patients' medication adherence and supply. They observed how the patients managed techniques with inhalators and how they followed up with oral and dental hygiene after taking medications. One nurse explained difficulties with observing the actual intake when the patient used a nebulizer:

I prefer to be present when she takes the medicine, but it takes its time . . . At least I try to be there, to see that she is able to start the machine. She may have episodes of dyspnoea . . . and we are not always here . . .

In another case, the lack of effect of a new dose was a significant observation. One nurse said, "It worries me that she still isn't improving, despite the new regime of medicines. When I visited her last evening, she had dyspnoea . . . she was even cyanotic . . . and today, she is not much better."

The correct dosing of prescribed medications was observed, and nurses sometimes had to manage confusing or conflicting information. Sometimes they discovered defects with the nebulizer or that the patient was having problems using the equipment effectively.

Mental state. The patient's cognitive and emotional state was also within the scope of the nurse observations. Some nurses said that they were looking for the "twinkle" in the patient's eye, a peaceful look, or the patient's ability to joke. One nurse explained, "Normally, this woman likes to joke; if she is not joking, she is not feeling well." In other cases, the

patient's use of humor and irony were taken as observations of cognitive functioning.

Patient body language, movement, and voice were other essential observations related to mental state. One nurse described the following:

When you know the person, the body language and voice will tell a lot about [their] mood and thoughts at the moment. Sometimes you just feel that the patient is not ready or doesn't want to talk about ill-health.

Several nurses reported they were also attentive to the atmosphere in the room. They described subtle elements, such as silence, hesitation, or the choice of words, which could provide information regarding the patient's feelings that day.

Methods for observation. Nurses described two primary methods of observation: communications with the patient and family members, and searching for clues in the environment. No tools or clinical guidelines were used for patient observations. The nurses said that instruments for measuring clinical parameters, such as temperature, blood pressure, or oxygen saturation, were seldom brought to home care visits. They did not bring such equipment with them when they went out to the patient without having planned to check for specific symptoms. Some of the nurses regretted this and thought they had too little equipment.

Communicating with the patient and family members. When collecting information regarding the patient situation, the importance of communication was obvious, both during the observations of home care visits and during the follow-up interviews. Verbal conversations were used to obtain an overview of the situation and to verify impressions. Commonly, during home care visits, nurse observations of the patient's respiration were followed up by control questions, exemplified by this dialogue:

Patient (P): "My breathing is not good . . . and otherwise, my body isn't that good either . . ."

Nurse (N): "No . . . but you are not worse than you were last week? Yes? No . . . same as before? Yes? Not that shape you were in last summer . . . No?"

P: "No . . ."

Nurses also used elaborating questions to validate or invalidate their impressions or understanding:

Nurse (N): "Early today (patient name)?"

Patient (P): "Yes, but I went to bed early yesterday."

N: "Yes . . ."

P: "And I get up early to watch TV."

N: "Was that why you went to bed early?"

P: "No, it was because I was tired and it was time to lie down. It must be because of the age?" (chuckles)

N: "Yes."

P: "No, I don't know I . . . It just became that way."

N: "It just became that way, yes. Not a direct cause for it, other than being tired?"

P: "No."

Along with verbal conversation, nurses explained that they interpreted patients' nonverbal communications. One nurse explained how she understood the situation in a specific home care visit:

I can see it all over . . . his skin, the way he breathes, the way he greets. I also see it very well if he is willing to get up and start going to the bathroom. It's the first indication. It actually took a while for me to understand and learn that he is sitting until he is ready to go, and it can actually take five minutes. Therefore, I do other things for him until he summons up the energy to get out of his chair.

Nurses were also very aware that their own communication was a factor in their interactions with the patient and the quality of their observations. Their ability to behave calmly was frequently mentioned, as one nurse described:

I just try to be calm, so the patient can decide the speed. I'm very concerned about that. Be calm, do not show the patient that you are stressed or in a hurry. Just sit down a bit and talk, and then consider a little, how is the patient today? When it comes to COPD patients, it is important to show that you take it easy, remain calm, do not stress . . .

Communication with family members was also an important source of information. After a home care visit, one nurse said,

The patient has a lot of support from his wife. If she had not been there . . . it wouldn't work. If the flat had been messy and the Christmas curtains had not been hung up now, I would have to talk a little more with the wife to find out if there were something wrong. Today she said a lot was good, and then I feel reassured. She is the mainstay, because I know how their interaction is, and I am very grateful that she is the type she is.

Looking for clues in the environment. Nurses looked for signs in the home surroundings that could confirm or disprove impressions of patient behavior or condition. One nurse discussed what she immediately focused on:

The first impression when entering a room is important. Is the house or apartment tidy, is the waste box full, are the beds made? If it's messy, it could have something to do with the patient's cognitive functioning, or maybe deterioration of the disease. I want to see the room, if the waste is emptied, if the bathroom is okay, if things are fine. Just to see if they manage themselves.

Assessing the refrigerator for amounts of old and new food could be informative in terms of both appetite and

cognitive function. Several nurses mentioned the importance of using all senses, not only vision, such as checking whether the coffee in the pot is still hot, or whether the temperature in the room is remarkable. One nurse described conducting an olfactory check:

Yeah, I sense if it is a particular smell, it could be a hygienic matter—well, she is very hygienic, so that's not a case, really . . . Or if it smells burnt—I used to put the kettle on, brew some coffee, and then I see if she has brewed coffee earlier in the morning and if it smells burnt. Maybe she placed something on the stove, or forgotten a saucepan, for instance.

Signs in the environment could explain changes in patient function or behavior. One nurse described how these signs could help her resolve suspicions of COPD deterioration:

When I came to the house, I met the patient standing on the doorsteps with the newspaper in her hand. I thought she only had picked up the paper right outside the front door, which is her morning routine and requires little effort. But she was heavily breathing, trembling a little, and I could feel that she was sweaty on her back. Some years ago, this patient was very stressed and anxious and could get such sweating attacks. But not nowadays. So, my first reaction was that pneumonia was on its way . . . Then I became aware of the walker tracks in the snow, leading to the garbage bin . . . She had been on a longer trip this morning, explaining the heavy breathing and sweaty back.

For patients who receive assistance with medication administration, nurses were attentive to any changes in the consumption of medication. Therefore, the assessment of medical supplies in kitchen drawers, living rooms, bathrooms, and bedroom nightstands was common. Increased medication intake could be considered a sign of possible deterioration.

Basis for interpreting observation. The usual situation, or "habitual state," was the benchmark against which any observations were interpreted. Knowledge regarding the habitual state could be obtained both through knowledge of the patient and their story and through nurse education and experience.

Knowledge about the patient and their story. Familiarity with the patient was essential when the nurses interpreted their observations. One nurse expressed, "I can see it immediately when I enter the room if he's okay or not. That's because I know him so well, know how he used to look, behave. . . talk and laugh, and so on." Another nurse talked about the challenges she experienced when she lacked knowledge about a patient:

Her situation is very complex because she has a history with serious anxiety before she got COPD . . . and anxiety and COPD both leads to poor breathing. That's what is difficult, to know what is what here . . . In the beginning, when I didn't know her,

and I thought she was a very difficult patient. I still think she is a difficult patient, but now I know more about what is normal for her and how she used to behave.

The patient must have confidence in the nurse to “open up” and allow the nurse to understand their real subjective needs and experiences. Such confidence takes time to establish. One nurse explained, using a patient example:

I don't think new or temporary employees can see the total picture . . . the entirety of the patient and (their) situation. They just do what they have to do, administrating medicine, preparing meals, and so on. For patients like her, who are anxious and worried, it's crucial that someone ask her how she feels. I used to ask her, and I'm sure she confide in me if something serious occurs.

Nurse education and experience. Both nurse education and work experience were necessary for nurses to be capable of making judgments based on their observations and to determine which measures should be implemented. Nurses showed concern regarding the consequences of COPD. During the interviews, they associated their observations with knowledge regarding known risk areas, such as infections, the adverse effects of drugs, immobility, and weight loss. One nurse said, “Sometimes, I ask about his appetite. Generally, COPD patients use a lot of energy . . . with the breath. But he is quite well-nourished . . . if they are thin, then it is important to ask about the diet.” Even though they referred to knowledge from their education, most interpretations and assessments appeared primarily based on their work experience and intuition. One nurse discussed her development since graduating 20 years ago:

In those days, the home care visits were more standardised. For example, the visits were calculated according to time spent . . . Now, you know that a visit calculated to ten minutes may take half an hour, because you may have to exceed your observations . . . Now, I rely more and more on my gut feeling.

Another nurse added,

I think it is important to be familiar with the patient and the setting that you work in . . . When you have been here over years, you may see other things than a new employee may see . . . Many times, you just sense something without being able to say what it is . . .

When nurses reflected on this knowledge, they admitted that their judgments were their own and that other nurses might reach different conclusions or perhaps use more time to observe and interpret the same observations if they were less familiar with the patient.

Discussion

The analysis showed that nurse observations of older, home-living patients with COPD were characterized by the search

for deviations from what they judged to be the patients' habitual states. This approach drew on various and complex knowledge, demonstrating the nurses' abilities to learn through pattern recognition, which is viewed as the foundation of intuition (Benner & Tanner, 1987). According to Pearson (2013), nursing may be considered an art that allows the use of intuition, combined with evidence-based practices. Unfortunately, intuition is often described in abstract terms, such as “gut feeling,” pattern recognition, and tacit knowledge, leaving the notion of something mysterious (Benner & Tanner, 1987). In addition, intuition is defined as “understanding without rationale” (Benner & Tanner, 1987, p. 23) and has been described as a lack of awareness of the processes engaged and highly influenced by emotions (Gobet & Chasse, 2008). However, intuition is valued by nurses in different settings (Odell et al., 2009; Rew & Barrow, 1987), although they often have difficulty discussing how they use this knowledge and skill in practice (Smith, 2007), and the use of intuition has not been legitimized by the nursing profession (Chilcote, 2016). Our findings provide insight regarding how nurses integrate intuition, as a core element of daily clinical work, which is consistent with Tanner (2006) because the nurses' backgrounds, the context of the situation, and the nurses' relationships with their patients are central to how nurses notice and interpret their observations. Reflective nurses are able to combine the rational perspective (analyzing objective and physical patient data) with the phenomenological perspective (perceiving and using patterns during the whole caring situation) when making clinical judgments (Tanner, 2006; Tanner et al., 1987).

The results of this study can be discussed using the framework of Tanner's (2006) five conclusions on expert nurses' clinical judgment. When the nurse observed the patients in relation to COPD, the patient's daily functioning and mental state, and medication issues, it was primarily their own experience that was the framework. They seemed to trust that they would recognize changes without necessarily measuring them objectively. This may be in line with Tanner's first conclusion, that says that nurses rely more on what *they* bring to the situation (knowledge regarding the patient's habitual state, and their own experiences and intuitions) than they do on objective data. Tools or checklists were not used in any of the home visits observed in this study. The nurses said that equipment to measure blood pressure, blood sugar, or temperature would only be used in the event that anything deviated from the usual. Nurses in home care act as lone practitioners and the use of standardized tools may facilitate the decision-making process and communications with other practitioners. However, the nurses in this study did not express uncertainty or any desire for a checklist; however, they often regretted the lack of measurement instruments during their home care visits. Checklists may have been regarded as being more useful if the nurses had been better equipped, with simple instruments designed to measure oxygen saturation, blood pressure, temperature, or infection status.

Despite the significant attention paid to the importance of recognizing the early signs of patient deterioration (Odell et al., 2009; Winters et al., 2013), the use of tools and guidelines among nurses in home care remains uncommon (Husebø et al., 2017; Tucker & Lusher, 2018). Nurses primarily work alone in the patient's home and experience increased autonomy compared with those working in institutional care (Tummers et al., 2013). The unpredictability of tasks and workloads forces them to be flexible and skilled, to adapt their care to the home care setting while maintaining appropriate nursing standards (Barrett et al., 2016), which can include adapting to patient values and lifestyles, in a highly holistic and individualized context (Hvalvik & Dale, 2013).

The nurses in this study demonstrated their unique knowledge of individual patients within each specific context, both during the home care visits and during the interviews that followed, which agreed with Tanner's (2006) second and third conclusions, demonstrating that nurses' observation and judgments, to a great degree, rely on knowing the patient, the patient's typical response patterns and concerns, the situational context in the patient's home, and the culture of the nursing unit. As highlighted in the study by Björnsdóttir (2014), the nurses in the present study attached great importance to using their discretion, which primarily drew on their knowledge of the patient. In the nursing literature, the concept of "knowing the patient" has been described as an essential aspect of clinical knowledge (Jenny & Logan, 1992; Kelley et al., 2013; Luker et al., 2000; Radwin, 1996). In our study, "knowing the patient" referred to recognizing the patient's usual presentation and behavior, in terms of physical symptoms, medication adherence, daily activities, and mental states. This knowledge was developed through interactions with the patient and the patient's family, which occurred in the patient's home environment. These findings correspond with the findings of an integrated review (Zolnierek, 2014), which examined the concept of "knowing the patient" and explained that the process occurs within the relationship with the patient and in an environment that is temporal in nature. Furthermore, knowing the patient included knowledge not only of the pathophysiological aspects of COPD but also of the illness experience of the patient and the patient's physical, social, and emotional strengths, and coping resources. Tanner (2006) has described this knowledge as the basis for good clinical judgment.

The home environment was also a significant context, for both representing the patient's habitat and for providing physical evidence regarding the patient's behavior. The nurses sought signs in the home surroundings that could confirm or disprove their suspicions regarding patient behavior or condition. Compared with institutional care settings, home nursing care is associated with little oversight and few controllable factors. Entering a patient's home means encountering sensory impressions and being surrounded by the patient's personal objects (Devik et al., 2013). Thus, this

setting provides unique possibilities for absorbing the patient's history and context. The observations made by the nurses in our study showed that they were highly vigilant and made active use of what they heard, smelled, and saw in patients' homes. This observational method may require experience and continuity, necessitating that the same nurse visits the same patient over time. The nurses' attention to the environmental clues showed the extensive use of sensory awareness, practical wisdom, and judgment.

According to Tanner's (2006) fourth conclusion regarding clinical judgment, nurses use a variety of reasoning patterns, either alone or in combination. Although during the interviews, the nurses associated much of their knowledge with their nursing education and evidence-based knowledge regarding COPD patients, the most prominent reasoning pattern was their search for deviations from the patient's usual conditions or behaviors. Their reasoning appeared to be very intuitive, distinguished by their immediate apprehension of the situation, and appeared to be a function of experiences with similar situations. The importance of nurses' intuitions when responding to patient deterioration have been highlighted previously. Odell et al. (2009), in their systematic review, found that vital signs are often used to validate the intuitive feelings of nurses, which suggests, as Tanner (2006) also indicated, that intuition is one of at least three interrelated patterns of reasoning: analytic processes (e.g., hypothetic-deductive thinking), narrative thinking (thinking through telling stories), and intuition. We believe that the nurses in this study demonstrated skills in line with Benner, Tanner and Chesla's (2009, p. 211) description of an expert nurse:

... reasoning that relies also on intuition, including deliberative rationality, on a disposition toward what is good and right, on practical wisdom gained from experience, on involvement in the situation, and on knowing the particular patient through being attuned to his usual pattern of responses and through hearing narrative accounts of his illness experiences.

Several nurses indicated that their observations and judgments may be difficult to share or explain to their colleagues. The basis on which they reasoned was developed individually and over time, and they often faced challenges when verbalizing how and why they reached their conclusions. Some nurses also expressed uncertainty regarding the consistency among observations by different nurses, especially if new employees were hired. Despite sound arguments for applying a more flexible approach to home nursing care, relying solely on nurses' experiences and knowledge about the patient can also have adverse consequences. Østensen et al. (2019) found that nurses who worked full time in long-term care facilities often knew their patients well and, therefore, considered reading electronic patient records to be redundant. By extension, knowing the patient can become an implicit and obvious knowledge that may be overlooked, in terms of documentation in the patient record, which can result in some observations

being regarded as “private” information, and patient care may risk becoming person-dependent.

Tanner’s (2006) fifth conclusion stated that reflection on practice is critical for the development of clinical knowledge and the improvement of clinical reasoning. She also suggested that reflection is triggered by a breakdown or a perceived breakdown in practice. The nurses, in this study, expressed vague concerns regarding the reliability and communicability of their patient assessments. Trusting their discretion and their abilities to detect changes from the patients’ habitual states could represent a logical, but not entirely safe, strategy. Their approach placed significant responsibility on the individual nurse and demanded the organization of work, to ensure continuity. An organization that can facilitate continuity does not often characterize home care, which is largely unregulated and delivered by multiple providers, including personnel with limited health educations (Baker et al., 2018). More experienced nurses were found to have greater confidence in their intuition (Melin-Johansson et al., 2017), which allowed them to observe and examine the patient’s signs beyond what is deliberately expressed by the patient. Therefore, the patients’ problems might be discovered early, which could potentially increase patient safety (Melin-Johansson et al., 2017). To avoid intuition remaining a silent and private knowledge, visualization is required through reflection. Reflection on experiences and practice facilitates learning in the individual who reflects (Benner, 1984) and increases the validity and transferability of this knowledge (Benner & Tanner, 1987).

Another way to avoid knowledge becoming silent and private may be to introduce standardization. The study by Björnsdóttir (2014) showed that the introduction of assessment tools and guidelines was welcomed among home nursing teams; however, they also emphasized the importance of being able to use their own judgment when deciding when and how such tools were used. Because the understanding of standardization has moved toward evidence-based practices (Kitson, 2004), individualized care may not be regarded as contradictory to standardization. For example, a new individualized nursing care intervention for COPD patients in primary care has been introduced and was found to be feasible among nurses (Weldam et al., 2017).

Altogether, our findings demonstrated that the observations of older home-living patients made by nurses did not follow standardized procedures but, instead, were determined by individual and contextual circumstances. To safeguard this practice, more standardization can be considered, such as tools or guidelines, to ensure that vital observations specific to COPD are collected and can be shared by collaborating health professionals. However, the knowledge presented by the nurses in this study revealed a unique person-centered and contextual wisdom. Our results stress the importance of nurses performing reflection on their practices, their clinical judgments in the home care environment,

and how their reasoning may affect the patient’s safety and quality of life.

Strengths and Limitations

The use of two different data collection methods (observations and follow-up interviews) strengthen this study. Due to the qualitative design, the findings cannot be generalized; however, rich descriptions and the transparency of the data and the research process make it possible to transform and apply these findings to similar situations in other contexts.

When conducting an observational study, questions often arise regarding the potential influence of the researcher on the situation being observed. Although informants reassured the researcher that the home visits were “as usual,” most likely, the researcher’s presence affected the participants and interactions, which may have been augmented by the use of the think-aloud method. During the follow-up interviews, most nurses admitted to not verbalizing all of their thoughts regarding the signs of deterioration when observing the patients, to avoid upsetting the patients. If the nurses were thinking of what to say or not to say during the visit, interactions with patients may have been affected.

Another challenge when using the think-aloud method as a framework for observation was the limited time spent introducing the nurses to the method and engaging them in the technique. Some nurses also found it difficult to think aloud because it made their dialogue somewhat artificial.

The authors’ preunderstanding as experienced nurses within the field of geriatrics, in both hospital- and home-based care, could be seen as both a strength and a limitation. All data were collected by Ruth Øfsti, whose primary experience is within the hospital context. To address this, she frequently asked clarifying questions during the follow-up interviews with the nurses, to gain a deeper understanding, and discussed the observations and impressions with Siri Andreassen Devik, Ingela Enmarker, and Rose Mari Olsen. During the analysis, preunderstandings and interpretations were discussed by all the authors, who had various experiences.

These findings provide new insights and new questions that should be followed up. For example, the patient’s perspective was not explored in the current investigation. Patients’ perceptions of symptoms, treatment, and care requirements may differ from what nurses observe, interpret, and respond to.

Conclusion

The findings in the present study showed that nurse observations did not follow a standardized procedure, nor did they use any tools or guidelines. Instead, when observing and interpreting, nurses tended to perform a complex process, guided by their experience and knowledge of the patient, and the patient’s individual and contextual circumstances.

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