Master or doctorate paper

Nordic Journal of Nursing Research

Compliance between registered nurses' clinical judgment and documentation in homecare for older patients with COPD: A multiple case study

Nordic Journal of Nursing Research
2023, Vol. 43(1) 1–8

DOI: 10.1177/20571585221149865
journals.sagepub.com/home/njn
SAGE

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Abstract

Registered nurses (RNs) play a crucial role in the clinical judgment (CJ) and documentation of the health conditions and the healthcare of patients diagnosed with chronic obstructive pulmonary disease (COPD). Using a multiple case study approach, the aim of the present study was to explore and describe RNs' CJ in homecare visits for older patients with COPD as they appeared in the electronic patient records (EPRs) and how well the content corresponded to what the RNs explained verbally was important to report. Data were collected through observations of 16 homecare visits, interviews with RNs, and retrospective reviews of EPRs. The study is reported in accordance with COREQ. Quantitative and qualitative content analysis revealed that the RNs' CJs in homecare visits were represented only to a small extent in the documentation in the EPRs. The documentation was mainly about procedures and tasks performed and did not correspond to what the RNs explained verbally was important to report. This knowledge contributes to improvements to ensure patient safety in this research field.

Keywords

content analyses, electronic patient record, home healthcare, nursing, older adults

Accepted: 15 December 2022

Background

Most patients diagnosed with chronic obstructive pulmonary disease (COPD) are home-living and older; they are also often diagnosed with multiple diseases and need homecare services on a regular basis.[1,2] The health status of these patients is often associated with a risk of acute changes due to upper respiratory tract infections that may cause an acute life-threatening state where immediate action is required and admission to a hospital is needed.[2–5] Registered nurses (RNs) working in homecare services therefore play a central role in clinical judgments (CJs) and in the documentation of patients' health status and functioning, in order to provide proper treatment and to prevent exacerbations.

In nursing research, terms such as critical thinking, decision-making, and clinical reasoning are used synonymously with CJ. In this study, CJ is defined as 'an interpretation or conclusion about a patient's needs, concerns, or health problems, and/or the decision to take action (or not), use or modify standard approaches, or improvise new ones as deemed appropriate by the patient's response'.[6–8]

Documentation of CJs is important for detecting changes in patients' health conditions in order to ensure continuity of care and patient safety, as well as fulfilling professional and legal demands.[9,10] Accurate documentation makes nursing actions visible[11] and is crucial to the transfer of information between health professionals.[12]

Several studies claim that the documentation of patient records in healthcare is inaccurate and inadequate, despite the relevant legal requirements.[13–17] A qualitative study investigating factors that influence the quality of vital signs documented in electronic patient records (EPRs) in a district hospital in Sweden identified poor documentation of vital signs due to inadequate routines and poor facilities.[18] Furthermore, Facchinetti et al.[19] concluded that improvements are needed in RNs' documentations of hospital discharges of patients with chronic diseases. Studies carried out in municipal health services show that RNs struggle with attitudes and barriers regarding documentation in EPR.[20,21] A qualitative study investigating the characteristics of nurses' information practice in municipal healthcare claims that the complexity of the nurses' information practice affects their documentation in EPR.[22] Previous studies also call for research that provides

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deeper insights into RNs' documentation practices with regard to patient safety.[13,15,17,21]

Although the number of older patients diagnosed with COPD receiving homecare is increasing,[23] most research on this patient group is related to hospital care.[3–5] There is also limited literature available regarding documentation of homecare RNs of providing healthcare to older patients diagnosed with COPD. To our knowledge, no research has followed the whole process from CJs completed at patients' homes to the documentation in EPRs. The aim of this study was therefore to explore and describe how RNs' CJs in homecare visits for older patients with COPD appear in EPRs and how the documentation corresponds to what the RNs explained verbally was important to report. The following research questions guided the study: 1) What proportion of CJ, represented via VIPS keywords, can be identified during the RN's homecare visits and which is later stated as important to report and finally documented in EPRs? and 2) What did the nurses' CJ in the homecare visit contain, what significance was given to it, and how did this correspond to the content that was actually documented?

Methods

A qualitative multiple case study[24] was conducted using non-participatory observations of homecare visits, individual semi-structured interviews with RNs, and retrospective reviews of nursing documentation in EPRs. The case study methodology is relevant for studying a phenomenon in its natural context, in order to explore depths and nuances using several sources of information. A multiple case study was conducted to illustrate the study issue using several bounded cases, as well as to explore what is common and different within and between the cases.[24] The Consolidated Criteria for Reporting Qualitative Research (COREQ)[25] checklist was used for reporting (see Appendix).

Setting and participants

In Norway, long-term care is provided as the responsibility of local municipalities and includes nursing homes and homecare services. As a result of political national strategies and an increased number of older patients with chronic health conditions, municipal healthcare services have assumed greater responsibility for patients being frailer and presenting with more serious, complex, and treatment-demanding issues.[26,27] This study was conducted from October 2017 to October 2018 and took place in homecare services in four municipalities, both urban and rural, in mid-Norway. Written information about the study was sent to the management of homecare services in each municipality, and nursing leaders assisted with dissemination and contact with potential RNs. The inclusion criteria were that participants should be RNs employed in homecare services for at least six months. A total of 15 RNs consented to participate; ultimately, 12 participants (11 women; mean age = 41 years) were included in this study.

The participating RNs were asked to identify relevant patients for whom they provided homecare services. The inclusion criteria for patients were being diagnosed with COPD, aged 70 years or older, living in their home (sheltering house or ordinary home), and receiving homecare services daily. A total of 10 patients (4 men, 6 women; mean age = 81 years) consented to participate. Most patients lived alone in their own homes, while some lived in sheltered housing. Some patients received homecare services more than once a day for medication, hygiene, and nutrition supervision. Characteristics of the RNs and patients are shown in Figure 1.

Data collection

The first author collected the data through non-participatory observations of RNs' homecare visits to patients, individual interviews with the RNs immediately after the visits, and retrospective reviews of the patients' EPRs.

Observation

Observations were made in 16 homecare visits, of which three RNs made homecare visits to two patients. The remaining RNs visited one patient each. The RNs were encouraged to verbalize their thoughts according to the think-aloud method during the homecare visit.[28,29] The think-aloud method was used to identify the RNs' CJs. The think-aloud method is a qualitative technique used to collect verbal data; it is effective in identifying problem-solving processes.[29,30] The observations of the homecare visits were audio-recorded and later transcribed verbatim. Field notes were taken during the visit as supplements to the recorded interactions.

Interviews

An interview with the RN immediately followed each homecare visit. Following a semi-structured interview guide, the interviews were conducted either in the RN's company car or at their office and lasted approximately 10–15 minutes. RNs were asked about first impressions as they entered the patient's home, their focus during the visit, knowledge of the patient, and what they thought was necessary to document or report according to the patient. The interviews were audio-recorded and later transcribed verbatim.

Patient record review

The EPR system used by the included municipalities was Visma PROFIL, and the part for nursing documentation was based on the VIPS structure. The first author accessed de-identified patient record documentation from the relevant homecare visits and patients. The same author received information about the individual patient's decision on help, e.g., help with daily morning care or evening care.

Analysis

The data were analyzed with quantitative[31] and qualitative content analysis.[32] All authors participated in the entire analysis process. The VIPS model for nursing documentation[33,34] was used as an overarching framework for identifying and sorting the content. The VIPS model is a widely used problem-oriented approach to

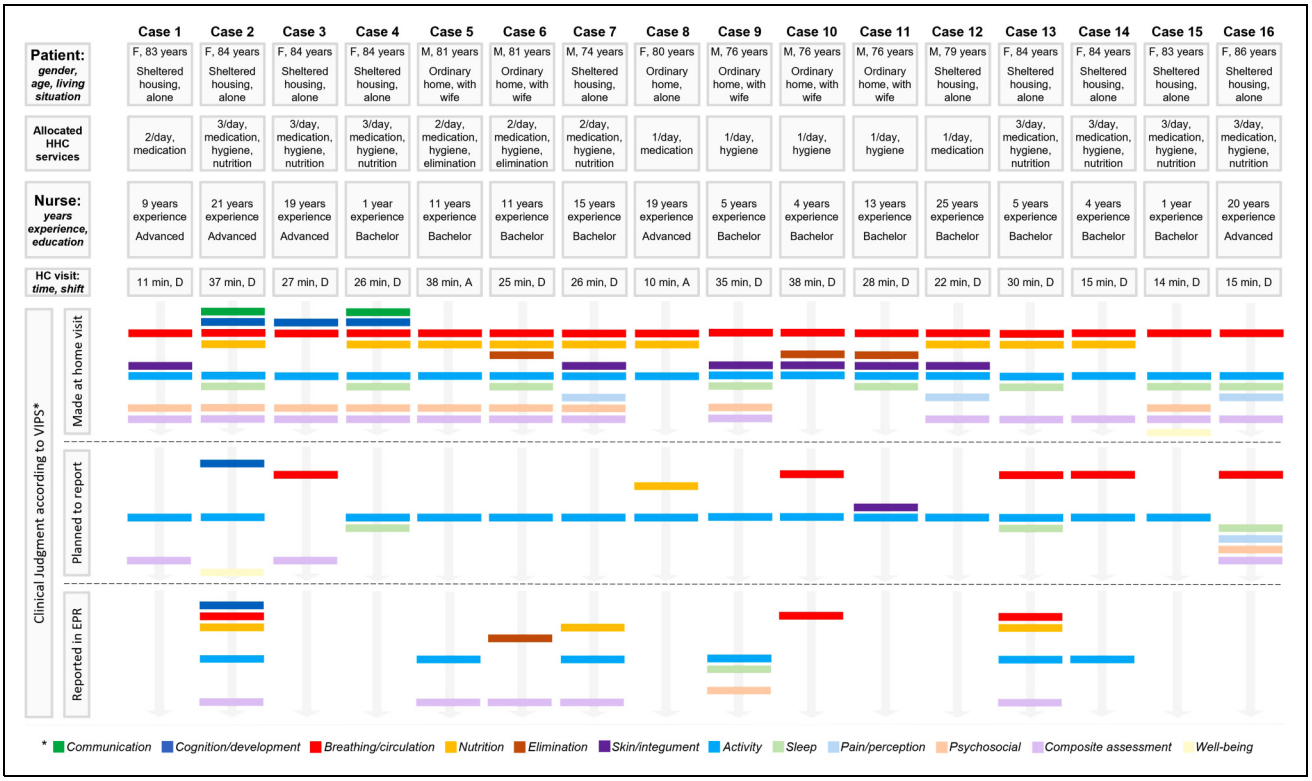

Figure 1. Overview of patients, allocated services, nurses and clinical judgments identified in 16 cases.

documenting nursing care in a structured way,[16] and consists of a system of keywords on two levels. The first-level keywords correspond to the nursing process, while the second-level keywords refer specifically to nursing history, nursing status, and nursing intervention. In the analysis, only the keywords referring to nursing status were used, including 'communication', 'cognition/development', 'breathing/circulation', 'nutrition', 'elimination', 'skin/integument', 'activity', 'sleep', 'pain/perception', 'sexuality/reproduction', 'psychosocial', 'spiritual/cultural', 'well-being', and 'composite assessment'.

The multiple case study design allowed us to analyze within and across all of the cases.[24] The analysis was carried out using both qualitative[32] and quantitative content analysis.[31] Transcripts of observations in home visits, field notes, and interviews with the nurses were read through to get an overall impression. The transcripts were then analyzed with deductive content analysis[32] to identify VIPS keywords that could represent CJ. EPR transcripts were similarly reviewed to detect CJ in terms of VIPS keywords. All keywords were counted and sorted (quantitative content analysis) in the various phases: identified in the home visit; stated as important to report in the subsequent interview; and documented in the EHRs. The quantitative results were compiled and left a pattern, as shown in Figures 1 and 2. Furthermore, the transcriptions of observations in home visits, interviews with the nurses, and patient records were analyzed using qualitative content analysis.[31]

Guided by research question 2, the approach was now inductive. The text was reviewed to extract units of meaning which were then condensed. The condensed content was abstracted and sorted into codes based on similarity/dissimilarity, which provided the starting point for formulating three themes.

Ethical considerations

The study was approved by the Norwegian Centre for Research Data (no. 54983). Initially, the study was presented to the Regional Research Ethics Committee (REK, registration no. 2017/1090) and was found not to require registration or further approval from REK. The permission to perform data collection was obtained from the health administration in the municipality. All participants received information about the study's purpose and procedures and gave written consent before data collection began. The patients were informed that the homecare visits would be audiotaped and that the study aimed to explore RNs' CJs and documentation, not directly involving patients or their care. All participants were ensured that their participation was voluntary and that they could withdraw from the study at any time without any consequences.

Findings

The findings are organized into two parts corresponding to the research questions.

Quantitative results

The quantitative content analysis of the data material as a whole (i.e. observations at homecare visits, interviews with the RNs, and documentation in EPRs) revealed that the RNs' CJs were represented by 12 of 14 VIPS keywords, as shown in Figure 2.

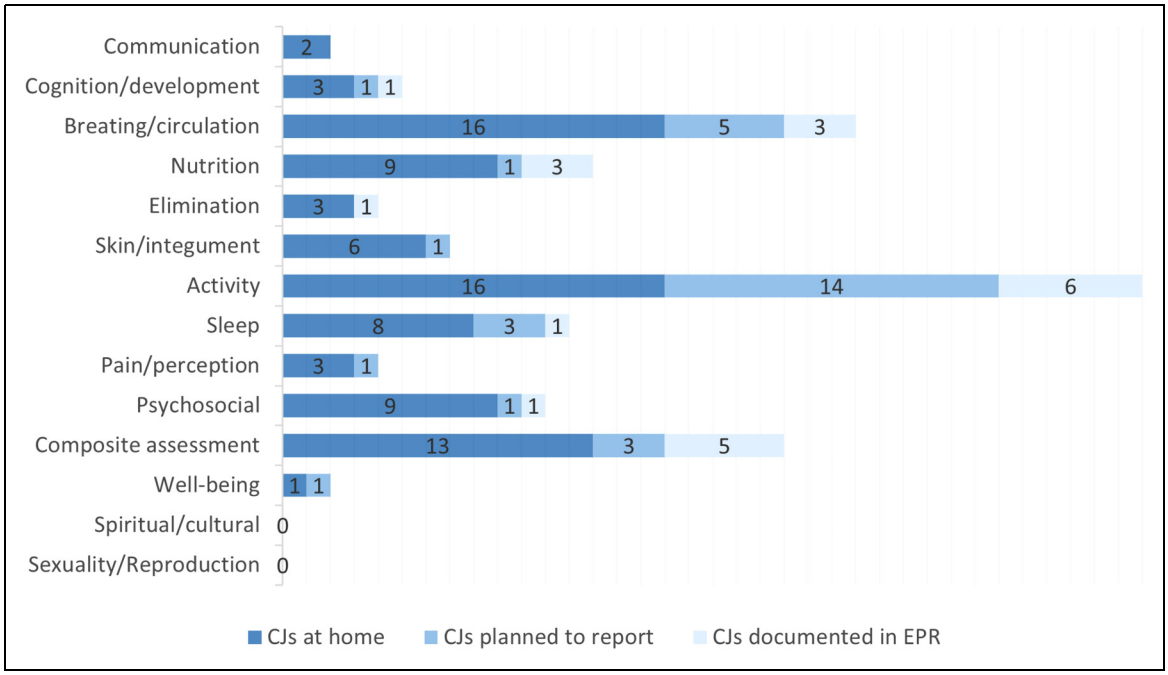

Figure 2. Cases with clinical judgments in conformity with VIPS keywords.

CJs related to 'spiritual/cultural' or 'sexuality/reproduction' were not found in the data material. CJs related to 'breathing/circulation' and 'activity' were the most common occurring in all 16 cases. On the other hand, CJs related to 'communication' and 'well-being' occurred in two cases.

When counting the total number of CJs in conformity with VIPS keywords for each of the three data sources, the most CJs were identified at *homecare visits*, totaling 89 CJs across all cases, as shown in Figure 2. Here, CJs related to 'breathing/ circulation' and 'activity' were identified in all cases. In contrast, 'communication' occurred in only two cases.

When looking at what the RNs *considered to be important to report* from the homecare visits, the total number of CJs identified by VIPS keywords decreased by 65%, from 89 to 31 CJs. Here, the largest decrease was found for CJs related to 'psychosocial' and 'nutrition', which dropped 89%, from occurring in nine cases at homecare visits to one case as being considered important to report. 'Activity' was the CJ most often considered important to report by the RNs, found in 14 of the cases, reduced by 12% compared to the homecare visits.

RNs' CJs made at homecare visits were to a small extent visible in the *documentation* in EPRs; for half of the cases, there was no documentation related to the homecare visit at all in the EPRs. The total number of CJs identified by VIPS keywords in the documentation was 21, a decrease of 76% compared to the homecare visits, and 32% from being considered important to report. When comparing types of CJs important to report with CJs documented in EPR, both a decrease and an increase in numbers were found. The largest decrease in number was related to 'activity', which dropped 57%, from being considered important to report in fourteen cases to documented in six cases. Conversely, a higher number of CJs related to 'nutrition', 'elimination', and 'composite assessment' was identified in the documentation than what the RNs had found important to report. Of these, CJs related to 'composite assessment' had the greatest increase: 60% from being considered important to report in three cases to documented in five cases.

Qualitative results

Three themes were obtained from the analysis, representing CJs made at the homecare visits, what the RNs had considered important to report, and what the RNs documented in EPRs. The three themes were 1) attention to somatic health and daily functioning, 2) deviation from normal conditions is important to report, and 3) reporting the nursing tasks performed. The themes are presented below, along with significant quotations from the texts from observations, interviews, and EPRs.

Observations in homecare visits: attention to somatic health and daily functioning

Similar to our quantitative analysis, the qualitative analysis showed that the RNs had a prominent focus on the patients' somatic health status during homecare visits. CJs corresponding to the VIPS keywords 'respiration/circulation' and 'activity' were related to breathing expressions and how the patients' mastered their everyday activities. The RNs were looking for signs of deterioration of the COPD; as one RN said:

> Every time I come here, I observe if his breathing has become worse, if there is some infection coming, if he has caught a cold. That's how I usually think when I go to this house. (RN, case 5)

CJs of somatic health also related to the patients' nutritional state, where a lack of appetite could be a sign of deterioration

due to COPD. CJs related to mental health were typically linked to physical functioning. For instance, a patient's use of humor and body language, as well as the atmosphere a RN might sense in the room, could say something about the patient's self-care abilities:

> The patient is in a good mood compared to earlier. He was not in shape some days ago. But now he has humor and guts and wants to do most activities by himself. (RN, case 7)

CJs in conformity with the VIPS keyword 'composite assessment' were related to patients' needs for help with medication and RNs' observations of how patients handled their nebulizers, as well as the observed effects of the medication, and the RNs' assessments of whether the stock of medicines was sufficient.

Following interviews: deviation from normal conditions is considered important to report

During the interviews after the homecare visits, the RNs focused primarily on the importance of reporting whether the patients were in their habitual state. This was typically linked to how well the patients managed daily activities and CJs related to the VIPS keyword 'activity'. As one RN explained, regarding a patient's habitual state:

> I'll document that she is in her normal condition. Although this is vague wording and may not make sense to outsiders, it is understandable to colleagues who know the patient. When we give a handover report, we say 'she's in her habitual state', and report in more detail if there are any changes. (RN, case 1)

Deviations from the normal condition could mean either that the patient's health or functional status had deteriorated or that it had improved. Both types of deviations were considered important to document by the RNs, as exemplified by the following quotes related to the VIPS keyword 'respiration/circulation':

> I'll report that she is short-winded because it's important to follow-up if this does not improve. And I noticed she was cyanotic tonight, and that's something new. This patient is quite calm, and does not exert herself so much physically, so when she is breathing heavily, it is not due to exertion. (RN, case 14)

> I'll report that the patient was in good shape. The breathing was okay, no gurgling sounds that she usually struggles with, and she was not strained when she talked. She can be very short-winded, but not today. (RN, case 16)

Deviations from normal conditions could also be manifested by a patient's changing behavior. This was exemplified by a RN who considered it important to report observations related to the VIPS keyword 'cognition/development':

> I will report that the patient went outdoors early in the morning, before 8 o'clock, which is unusual for her. We have to observe if it repeats itself, because if it happens and winter comes, we have to mount some door sensors that monitor if she goes out. (RN, case 2)

Documentation in EPRs: reporting the nursing tasks performed

Documentation made by the RNs in the EPRs was mainly about procedures and tasks they had performed during the homecare visits, and this was most often described without any assessment of health status or needs of the patient. The most common tasks described were the administration of medication relating to the VIPS keyword 'composite assessment', for instance, '*Mixed medicine for administration in nebulizer*' (EPR, case 5). Tasks performed were typically described in short phrases, without any details of about the way the care was performed or the extent to which the patient was involved. For example:

> Assistance personal hygiene. Change of panties. Arranged breakfast Morning medicine and inhalations provided. (EPR, case 7)

The patients' subjective experiences were almost absent in the documentation, even when it came to descriptions of COPD-related symptoms that often are accompanied by feelings of fear and anxiety. For example: '*Shower: shortness of breath during shower today*' (EPR, case 13).

Discussion

The aim of the present study was to explore and describe how RNs' CJs in homecare visits for older patients with COPD appear in EPRs, and how the documentation corresponds to what the RNs considered to be important to report. The analysis showed that the RNs' CJs in homecare visits were to a small extent visible in their documentation in their EPRs. In half of the 16 cases, there was no documentation of the CJs made. In the remaining eight cases, CJs were omitted despite being defined as being important to report. The RNs' somatic focus on the respiration/circulation challenges of patients with COPD during homecare visits was not prominent in the EPR documentation. CJs documented in the EPRs were essentially based on the RNs' subjective data, rather than on objective data, even though the main purposes of nursing documentation in EPRs are to make nursing care visible, to take care of patient safety and information exchanges, and to fulfill legal and professional demands.[10,13] Our results show that CJs documented in EPRs do not always appear as consequent documentation of CJs from the actual patient situation or as documentation of changes in patients' health status, or as a statement on actual health status.

Our study also reveals a gap between CJs appearing as written information in EPRs and CJs considered to be important to report; this may reflect underlying reasons such as technological barriers (system usability and user interface), inadequate documentation routines, attitudes, events not recorded when they occurred and then forgotten, or an expression of the RN's view of information exchange.[10,20,35,36]

Østensen et al.[22] showed that RNs in long-term care in municipal healthcare who know their patients well carry patient information in their heads, which may, from the RNs' point of view, make some information in the EPR redundant. In light of their study, our findings may be a result of RNs carrying essential patient information within themselves, such that some information in EPRs therefore becomes redundant from the RN's point of view, and CJs therefore appear 'condensed' or 'reduced' in EPRs. In addition, this 'condensing and reducing' could be a product of how information is given orally to patients in handover situations by RNs knowing the patients, which Østensen et al.[22] also highlighted.

Our analysis showed that RNs were mainly addressing their CJs from homecare visits to the patients' clinical conditions related to COPD, i.e. CJs related to VIPS keywords such as 'respiration/circulation' and 'activity'. These CJs seemed to be based on the RNs' knowledge of COPD and the impacts of illnesses on patients. This finding can also be a consequence of the fact that no guidelines or tools were used in the observation of the patient. CJs about respiration and circulation did not refer to respiration frequency, saturation level, or blood pressure, but referred instead to patients' breathing challenges in their particular situation. When RNs do not use guidelines or equipment as they observe patients, the accuracy of information in communications with other groups of health providers, e.g. doctors, may be affected. This is in line with Håkonsen et al.,[37] who showed that unclear language, terminology, and lack of guidelines affects documentation in EPRs.

The psychosocial aspects of COPD are well-known.[38] CJs associated with the VIPS keyword 'psychosocial', as changes in mood, were addressed at homecare visits; however, this was not made visible in the relevant EPRs. This can be seen as an indication that somatic health problems are more visible and easier to put into words than health problems related to psychosocial aspects. This lack may also result from RNs' fear of failing to use the right words in the right way when documenting mental health,[39] focus of what is important to document or missing guidelines,[15] or unwillingness to exchange information when handling confidential information.[40] CJs related to the VIPS keyword 'communication' appear absent in EPRs and not considered to be important to report. As communication is important in the interaction between the RN and the patient, the RNs communicated verbally and non-verbally with the patients during every homecare visit, and obviously then automatically registered changes in the patients' ability to communicate. It is important to register changes in the patient's communication ability, as this can be affected by various factors.[41,42] CJs regarding VIPS keywords related to 'sexuality/reproduction' and 'spiritual/cultural' were not expressed in patient scenarios, nor did they occur in considerations of what is important to report or in EPR documentation. The absence of these CJs is in line with previous findings,[43] which naturally will raise questions of how RNs respond to this kind of question, when asked by patients.

Our study shows that the written documentation in EPRs mainly reflects RNs' tasks performed during homecare visits, which propose the meaning with nursing documentation. In addition, this could reflect a task-oriented culture, promoted by effectivity principles in community healthcare disguised as quality in nursing practice by the RNs dutiful reports of work done.[44,45]

Jefferies et al.[10] claimed that the importance of nursing documentation is to define the nature of nursing itself by documenting patient care outcome, and also to demonstrate what the RNs actually are doing for the patient. Accordingly, quality in nursing documentation must meet seven criteria: it must 1) be patient-centered, 2) contain the actual work of nursing, 3) reflect RNs' CJs, 4) be presented in a logical sequence, 5) be written in real time, 6) record variances in care, and 7) fulfil legal requirements.[10] Wilson et al.[46] claim that nursing documentation can serve as an indicator of quality in nursing practice. The findings in our study demonstrate that reflections of CJs in EPRs should not be seen as absolute indicators of quality in nursing. This is based on the seeming fact that every RN forms their own considerations and decides what is important enough to document.[34] In addition, these considerations also depend on each RN's competence, knowledge, experience, and reasoning,[8] as well as knowledge of the patient.[22,47,48]

Our findings also show that patients' subjective experiences were almost absent in the documentation, which therefore fails to reflect patients' participation in care, which has been stressed in decades.[49] These findings require innovation, given the fact that nursing documentation should also reflect patient participation. EPRs have been implemented in healthcare around the world in order to share reliable and accurate patient information for the sake of ensuring patient safety; they are also entrusted to improve quality in handover situations.[50,51] Our study also reveals a gap in information exchange, which may cause problems and even threaten patient safety. This is seen in light of the World Health Organization's[52] definition of 'patient safety' as the prevention of errors and adverse effects to patients associated with healthcare.

Ihlebæk[53] claims that relying solely on written information in handover situations falls short, because written information appears to be insufficient. It therefore needs to be supplemented with oral information in 'silent' handover situations intended to help RNs share sensitive information concerning patients' psychological health, and when attempting to resolve issues connected to patients' care.[53] In our opinion, errors may occur when orally sharing specific information regarding patients' health status, especially if existential information is not documented. This is because the message sent is not necessarily the same as the message received, because the decoding of a message is based on individual factors, such as knowledge and experience. Helder et al.[54] describe verbal communication as transitory, time-bound, and dynamic. Written information has great force, since it is available long after it has been written, because readers have access to the information long after the information has been written. In addition, written information is accurate and reliable, since the decoding of the information does not depend on the reader's memory for details.[54] Communication is crucial and is seen as informative continuity between caregivers to connect care from one episode to another. [13] Therefore, information through documentations in EPRs should be used as a basic element in care delivery to ensure continuity of care, to fulfill professional and legal demands, and to make nursing actions visible.[11,33] The gap

between the information considered to be important to report and the information written in the EPRs in this study demonstrates that written communication does not provide a complete picture of older home-living patients diagnosed with COPD, nor does it reflect RNs' CJs during home visits. Patient safety is thus unduly jeopardized.

Conclusion and implications

Older home-living patients diagnosed with COPD are vulnerable patients whose health conditions can change abruptly. Documentation that lacks accuracy and completeness regarding health status does not present a complete picture of the patient's health condition, nor does it reflect the nurse's CJs from homecare visits. Such deficiencies can jeopardize patient safety, continuity, and quality of care. In addition, the lack of routines can influence patient safety, particularly not using guidelines or missing facilities in documenting vital signs. Improvements to ensure patient safety and patient participation in the documentation practice are recommended.

This study will increase awareness of training according to good documentation practice, use of checklists, guidelines, and documentation tools, such as iPads, out in homecare, thus increasing awareness of the usability of the documentation systems in the municipalities.

Further research is recommended to follow up this research to explain the gap between RNs' CJs and the documentation in EPRs. In addition, other research about measuring the implementation effects of observation or/and documentation guidelines and checklists in homecare services could be impactful.

Strengths and limitations

A strength of this study was the use of a multiple case study design, which includes different methods of data collection in 16 cases, making it possible to describe the flow of change in the processes from CJs to EPRs. However, the researcher's presence during homecare visits may have influenced nurse–patient dialogues—and thus the RNs' CJs. According to an ethical aspect, using the think-aloud method could be a barrier. Regarding the patient, the VIPS keywords 'psychosocial' and 'communication' may result in less focus in CJs. That is, the method may have been challenging for the RNs in thinking aloud and the patients' communications skills, and can therefore be considered a limitation of this study. The authors did not observe oral handover reports, which means the RN may have exchanged information that is important to report, even if they had not documented the information.

The authors' pre-understanding as experienced RNs in the geriatrics field, in both hospital- and home-based care, can be seen as both a strength and a limitation. All data were collected by the first author, whose primary experience is within a hospital context. To address this, she frequently asked clarifying questions during follow-up interviews with the RN to gain a deeper understanding. She also discussed the observations and impressions with the other authors. The pre-understandings were discussed during the analysis and interpretations by all the authors, who had various experiences. All authors carried out the analysis.

To enable readers to judge the transferability of the findings to other contexts, descriptions of the participants and quotes from the interviews are included.

Acknowledgments

The authors would like to thank the participants for their kind contributions.

Conflict of interest

The authors declare that there is no conflict of interest.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

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