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CLINICAL DECISION-MAKING PROCESS OF EARLY NONSPECIFIC SIGNS OF
INFECTION IN INSTITUTIONALIZED ELDERLY PERSONS: EXPERIENCE OF
NURSING ASSISTANTS

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KEY WORDS: Decision-making process, elderly, infection, non-specific signs.

ETHICAL APPROVAL

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CONTRIBUTIONS

Study design: M S-L and P T

Data Collection and analysis: M S-L and P T

Manuscript preparation: M S-L and P T

CONFLICT OF INTEREST

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Clinical Decision-Making Process of Early Nonspecific Signs of Infection in Institutionalized Elderly Persons: Experience of Nursing Assistants

ABSTRACT

AIM: To illuminate nursing assistant's experiences of the clinical decision-making process when they suspect that a resident has an infection and how their process relates to other professions.

BACKGROUND: The assessment of possible infection in elderly individuals is difficult and contributes to a delayed diagnosis and treatment, worsening the goal of good care. Recently we explored that nursing assistants have a keen observational ability to detect early signs and symptoms that might help to confirm suspected infections early on. To our knowledge there are no published papers exploring how nursing assistants take part in the clinical decision-making process.

DESIGN: Explorative, qualitative study.

SETTING: Community care for elderly people.

PARTICIPANTS: 21 nursing assistants, 22–61 years.

METHODS: Focus groups with verbatim transcription. The interviews were subjected to qualitative content analysis for manifest and latent content with no preconceived categories.

FINDINGS: The findings are described as a decision-making model consisting of assessing why a resident feels unwell, divided into *recognition and formulation* and *strategies for gathering and evaluating information*, influenced by *personal experiences and preconceptions* and *external support system* and, secondly, as taking action, consisting of *reason for choice of action* and *action*, influenced by feedback from the nurse and physician.

CONCLUSION: Nursing assistant's assessment is based on knowing the resident, personal experiences and ideas about ageing. Nurses and physician's response to the nursing assistant's observations had a great impact on the latter's further action. A true inter-professional

partnership in the clinical decision-making process would enhance the possibility to detect suspected infection early on, and thereby minimize the risk of delayed diagnosis and treatment and hence unnecessary suffering for the individual

RELEVANCE TO CLINICAL PRACTICE: In order to improve the clinical evaluation of the individual, and thereby optimise patient safety, it is important to involve nursing assistants in the decision-making process.

KEY WORDS: Decision-making process, elderly, infection, non-specific signs.

INTRODUCTION

Non-specific signs and symptoms and lack of specific ones are common with regard to infection in frail elderly persons (1-3). Changes in physical and/or cognitive behaviour may actually be the only clue to an ongoing infection. Therefore, the assessment of possible infection in elderly individuals is difficult and contributes to a delayed diagnosis and treatment (3). At the same time, healthcare staff are obliged to ensure good care, i.e. evidence-based, safe, patient-centred, effective and equal care within reasonable time (4). In 2009 the Swedish National Board of Health and Welfare (5) clarified quality indicators to further ensure good health care, such as actions that prevent admission to hospital and mortality, safe nursing care, a culture that promote patient safety, is health- economical and effective. In order to achieve these quality indicators, methods and routines that secure cooperation and communication within and between health care professionals are necessary (5), i.e. there is a need of inter-professional practice that can improve care processes and outcomes (6). In clinical care the registered nurse is responsible for taking notes on the individual status of the patient on a daily basis and to decide whether to contact the physician or not. However, nursing assistants provide most of the daily care of elderly individuals in the community settings (7, 8) and therefore have many opportunities for early observations on subtle changes that may be signs of infection. In Sweden nursing assistants have 2-3 years education in secondary upper class and are trained to observe and assess residents' conditions.

BACKGROUND

One condition that influences the outcome of good care is problem-solving strategies used in clinical practice. The two main underpinning theoretical perspectives is either decision theory, e.g how the individual should make the decision, or information processes theory focusing on the clinical-decision making process itself (9). Also the impact of intuitive reasoning on the

diagnostic process has been emphasised (10). The process of the nurse's clinical decision-making is well described in the literature. In a study of home care nurses' inferences and decisions, the foundation for their clinical decisions was explored as being based either on rationality and selection of the best alternative, or as being intuitive. The process was described as being divided into two parts: the first part being clinical inference, defined firstly as an evaluation of the patient's health status and secondly as a determination of therapeutic actions (11). Bryans and McIntosh (12) outlines seven stages for decision-making: recognition, formulation, alternative generation, information search, judgment or choice, action and feedback. Recognition and formulation was described as a less conscious phase involving exploration and classification of the situation. Alternative generation involved creating a hypothesis as a basis for judgment and choice of alternative. In addition, Larsson Kihlgren *et al.* (13) found that being able to feel secure as a nurse was the basis for nurses' decisions regarding referrals from home care to hospital care. They concluded that to rely on one's own competence, knowledge about the patient and a supportive working environment were considered necessary to be able to feel secure in one's professional position.

Another prerequisite for improving good care is effective communication between professions (7). However, the focus of the communication may differ between professions, i.e. physicians focus more on diagnostic terminology, whereas nurses tend to describe the clinical condition and symptoms when assessing the patient's condition (14). Physicians are aware of the fact that the hierarchical structure in the organisation may influence the information and dilute or filter it before it reaches them (13).

Nursing home residents are depending on a team of caregivers and their ability to detect signs and symptoms of suspected infections (15). In the teamwork the nurse has a key role in

planning and implementing high-quality nursing care, which require a skilled diagnostic practice (10). Nursing assistants may have an important role in this process. In a recent study we show that nursing assistants may have keen observational skills to detect behavioural changes that might help to confirm suspected infections early on (16). Nursing assistants perform virtually all daily care duties in the community care organisation and are close to the residents; therefore, it is possible for them to detect early non-specific signs and symptoms of infection. We think that in order to optimise the clinical evaluation of the individual, it is important to involve nursing assistants in the decision-making process. All professionals make judgements and decisions about how to work. However, often it is not certain that they have access to all information needed or they may have problems to value the information. Also nursing assistants probably act in this way (17). To the best of our knowledge there are no published papers exploring how nursing assistants take part in the clinical decision-making process. Therefore, the aim of the present study was to further analyse the data from our previous study (16), in order to illuminate nursing assistants' experiences of the clinical decision-making process when they suspect that a resident has an infection and how their process relates to other professions.

METHODS

This study is part of a prospective, longitudinal project with the aim of studying early signs of infections among institutionalized elderly persons. The explorative, qualitative study design including the method of focus group with nursing assistants has been described elsewhere (16). In that previous paper we performed a manifest analyses and focused on observations by nursing assistants as possible early signs of infection. The present latent analysis aimed to explore how nursing assistants act on the information, by analyzing the questions regarding how they think about acting on such information and what they actually do when they suspect

an infection. The advantage of group dynamics was considered to be useful for obtaining a wealth of information (18-20). Participants in a group can be stimulated by one another to remember situations in which they had handled the suspicion of an elderly person having an infection. Focus group discussions can also be useful for studying cultural values (19), in this specific case the values within the nursing assistant group about how to decide what to do when an elderly does not feel well. We also assumed that a group of participants with similar training and working in the same organization would feel more comfortable and secure since both moderators (M S-L and PT) were nurses, but not employed in the same organization as the nursing assistants.

Setting

The setting was an urban community care organisation for elderly people in a small town with 15,000 inhabitants, comprising either individual in need of daily care living in their own flat or in non-profit nursing homes. Roughly 75% of the elderly residents in the community care organisation were ≥ 80 years of age, with high-level dependency in their functional activities of daily living (ADL) status. Many of the elderly suffered from chronic diseases, such as obstructive pulmonary disease, chronic heart failure, dementia and stroke (21). The nursing assistants caring for individuals living in their own flat were supervised by a primary care nurse and those in the nursing homes by the community nurse, responsible for approximately 60 to 200 elderly residents. Both the community nurses and the primary care nurses consult the general practitioner (GP) at the primary care centre for medical advice, prescriptions, etc.

Participants in the focus groups

Approximately 100 nursing assistants were invited to participate in the study. They received written information about the study by the community care managers. Twenty-one female nursing assistants, median age 50 years (range 22–61 years), were interested and participated in four focus groups. Ten worked in home care and 11 in nursing-homes. Their working experience in community care for the elderly amounted to a median of 18 years (range 4–34 years). They were all born in Sweden and Swedish was their first language.

Data collection

Focus groups took place at two different nursing-homes and lasted between 50 and 90 minutes. Three to six nursing assistants participated in four different focus groups. Due to working schedule for the nursing assistants all groups were mixed with nursing assistants from home care and nursing-homes. All sessions were audio-taped and transcribed verbatim. One of the researchers acted as a moderator and the other one observed the process and took notes on initial impressions (22). Three questions concerning suspected infection in elderly individuals, constituted the framework during the session: ‘what facilitates or hinders the assessment if the elderly person does not feel well?’, ‘what do you do when the elderly person does not feel well?’ and ‘what do you think when the elderly person does not feel well?’ Probes like ‘What do you mean?’, ‘Can you explain in more detail?’ and so on were used to expand the answers.

Data analysis

A qualitative conventional content analysis (23) was used. We analysed the transcribed text according to Graneheim and Lundman (22). Each focus group was regarded as one unit of analysis. The analytical process focused on both the manifest content, i.e. the visible and obvious outcome of the text, and the latent content, referring to the underlying meaning in the text (22), in order to explore how the nursing assistants detected, thought about and acted on early non-specific signs and symptoms of infection in elderly people. In order to emphasise the nursing assistants own wording no preconceived codes were used. Firstly, both researchers read the transcripts individually several times to become familiar with the text. Meaning units related to the topic were selected and condensed (24). To take advantages of focus group data we looked for meaning units not only as a single participants' opinion but also as opinions viewed within the group during the discussion (19). An example, resulting in quotations about body temperature, is the discussion from focus group (FG) 1.

4: You do not know their normal temp really.

6. You should rely on their individual, normal temp because we are so different. I've always had a low temp.

2. But you understand after this study you had.... I mean, some had 36 and, oh, there is something wrong here, so we measured a second time, it was 36 again, but then you understood that some have so in the morning

3. But that's normal for that person.

2. It is normal, yes. But I did not know that before. Then it was 37 degrees. More than that is fever, then.//....

5. So that's really important to know one's normal temp. That you ask for it instead, what do you have in normal temp? Do I have 37.5, or the one who has 36 normally, then 37.5 is a temperature, really.

2: It should be in everyone's medical records. What you've got.

3: So that one can start from that, yes.”

Secondly; the condensed meaning units were coded with labels emerging directly from the text. Then abstraction of codes into subcategories and main categories took place (18, 22).

Finally, the coding and category system was discussed to reach a consensus, with the goal of achieving mutually exclusive categories (22, 25). An example of how codes and subcategories resulted in one main category is presented in Table 1. Once the category system had been developed the process of reflection on and discussion of the underlying meaning, i.e. the latent content, took place and a model of the nursing assistants' clinical decision-making process was constructed from the category system.

Table I. An example of the relation between codes and subcategories, resulting in the main category strategies for gathering and evaluating information

Main category	Strategies for gathering and evaluating information			
Subcategory	Clinical experience	Asks and observes	Measures	Discuss with each other
Codes	<p>The reason does not need to be disease</p> <p>Also small changes can be serious</p> <p>It is a feeling you have</p> <p>The symptoms vary over time</p> <p>The symptoms last several days</p> <p>You wait and see</p> <p>Sees the whole over time</p> <p>Difficult to assess the reason to the discomfort</p> <p>Urgent symptoms facilitate</p> <p>When it is diffuse it is difficult</p>	<p>To ferret out and ask questions</p> <p>Asks if they feel well</p> <p>Consider what the have eaten</p>	<p>Standard is to check urine samples, body temperature and often CRP</p> <p>Standard that the temperature is measured before the nurse is contacted</p> <p>If the symptoms remains it perhaps is an infection</p>	<p>Wants to have your view verified by fellow-worker</p> <p>We confirm with each other before we contact the nurse</p> <p>Reports to each other three times a day</p>

Ethical considerations

All the participants gave both their oral and written informed consent. The study was conducted in accordance with the Declaration of Helsinki and was approved by the Ethics Committee for Human Research at the Faculty of Health Sciences, Linköping University.

RESULTS

The findings are described as a decision-making model of the process, consisted of the steps assessing why a resident feels unwell, divided into recognition and formulation and strategies for gathering and evaluating information and, secondly, as taking action, consisting of reasons for choice of action and choice of action (Figure 1).

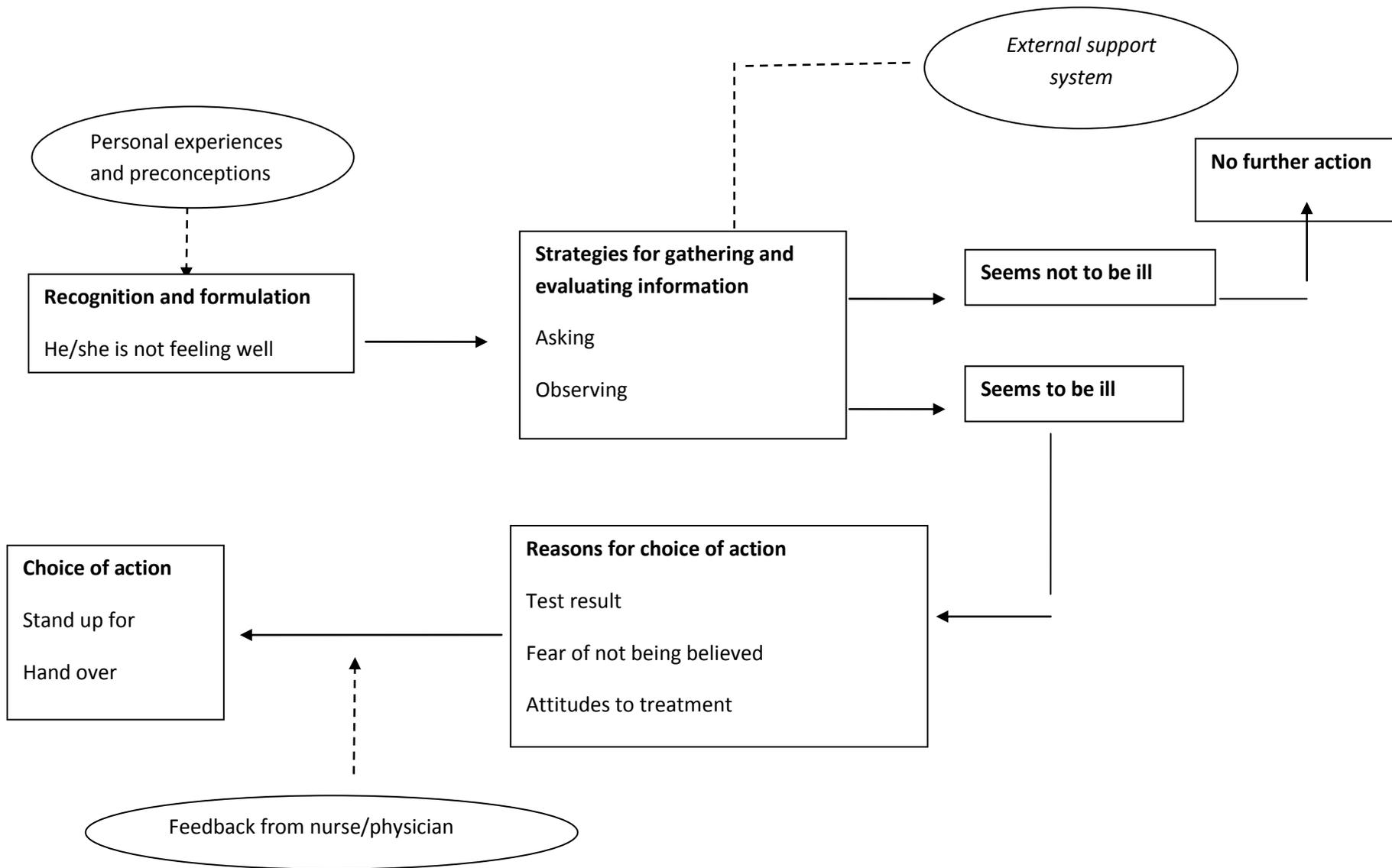


Figure 1. A model of the nursing assistants' clinical decision-making process.

Recognition and formulation

The analysis revealed that personal experiences and preconceptions influenced the process of recognising and formulating why a resident felt unwell. The category contained four subcategories: knowing the resident, personal experiences, ideas about ageing and the personnel's current mood. Knowing the resident was a crucial factor. If the resident suffered from dementia it was of the utmost importance that the nursing assistants had known them for a fairly long period to be able to assess an incipient infection. If they knew them, they could compare with earlier incidents and then decide what was going on.

'We only have eight residents... // ...you get to know them so well... // ...very typical, he becomes so social and he, well, he is not the same as usual we think. When we have checked it actually have been the case... //... urinary tract infection'. (FG 1 and 2).

Nursing assistants used experiences from their own lives when they assessed what was wrong with the resident, i. e. experiences involving themselves or their children when they had suffered from infectious diseases. Another factor influencing the assessment was ideas about ageing. Sometimes they thought that it was natural to deteriorate in the ageing process but also that the elderly are often unnecessarily patient and do not want to complain. They also stated that if they did not feel well themselves, it was more difficult to assess others. On the other hand, when they felt happy and satisfied with life they could more easily assess the resident's condition.

Strategies for gathering and evaluating information

When the nursing assistant had come to the conclusion that the resident did not feel well, they

gathered and evaluated information by using their clinical experiences, asking and observing the resident, measuring and discussing with one another to confirm if the condition was caused by illness or not. Their clinical experiences gave them tools to judge how serious the non-specific sign or symptom they observed might be. Experience helped them to recognise what was important and to compare with earlier events to understand why the resident was not as usual, quoted as *'does not always need to be a disease'* (FG 1) and *'small changes can be serious'* (FG 2). They actively used different kinds of measurements such as body temperature or a urine sample. Combined with a systematic use of confirmation and discussion with fellow-workers, they could take advantage of clinical experiences of their own or of others to confirm their view of the residents' problems, and to decide how to interpret the outcome of measurements.

Objective measurements, documentation, verbal report and work organisation was described as an external supportive system for gathering and evaluating information. Objective measurements indicated how nursing assistants used different types of physiological measurements to assess whether the resident had a suspected infection or not. Blood or urine tests were regarded as facilitators when they verified the nursing assistant's observation, but as frustrating when they were negative. Body temperature was considered to facilitate when the temperature reached 38°C or more, thereby confirming the presence of fever according to general practice. On the other hand, a body temperature below 38°C was not regarded as fever by the nurses and physicians and was therefore considered to be a hindrance factor. The nursing assistants reflected that frail elderly persons may have fever at a lower degree due to a low normal body temperature:

'We do not know their normal temperature...//.....lower levels for normal temperature should be valid for the elderly'. (FG 1, 2 and 4)

They were all aware of the fact that you may have a fever even if the measured body temperature has not reached 38°C and felt frustrated concerning the general practice. They also felt unsure about the measuring technique and when a resident living in his or her own flat did not own a thermometer it was difficult to assess whether they were ill or not. Still, they meant that objective measurements could be an aid if there was a clear policy about how to interpret the outcomes. Concerning documentation, they claimed that it was difficult to know what to notice but also that it was easier if everybody working with the residents documented all sorts of observations. Lack of time or that they forgot to document were hindrance factors. Although they stated that written documentations were better than oral reporting, verbal reports were still of importance. This made it possible for them to discuss their observations and confirm their suspicions with others and decide what to do. If more than one had observed an unusual behaviour, it was easier to contact the nurse to report or to document. Work organisation was of importance. If they had good contact with the primary care nurses, phoning them was no problem. They also thought that they should participate in the regular round because they knew the resident best. If the organisation of the work restricted their visits time with the residents, it made it more difficult to assess whether they were feeling well or not. It was also of importance that the environment was quiet and peaceful. If the work was organised so that the nursing assistant had to leave the unit to be able to document observations, there was a risk that this could be forgotten.

Reasons for choice of action

The step reasons for choice of action was influenced by test results, attitudes to treatment, fear of alarming unnecessarily, fear of not being believed, feeling of being powerless, and feeling of being the residents' spokesperson. All results of different standard tests were included as

reasons for the choice of action. A negative test result caused frustration as it did not confirm their observed suspicion of infection, and hence was regarded as of no importance for the nurse and physician. Therefore, to make things happen, they might say that the resident had a fever even if the temperature was below 38°C.

'Although we actually had such a case in our work where [the resident] had a urinary tract infection and the doctor asked if she had a temperature. And the nurse said no. So then we don't treat. And the next time we say that she has [a temperature] because she was severely affected'. (FG 1).

The nursing assistants' attitudes to treatment also played a part in their reasons for action, e. g. they argued that treatments were not always necessary and claimed that there should be a balance between acting and waiting described as *'do not want to do too much or too little'* (FG 1). The nursing assistants' also described a fear of alarming and not being believed. To be sure of not alarming unnecessarily, they felt that there *'must be several symptoms'* (FG 3, 4) and they had a feeling that the nurses thought they were calling them too often. If the resident denied symptoms the nursing assistants were afraid of not being believed and they also felt that their descriptions were not as valuable as those of the nurses and physicians. They stated, *'what we reported was not taken seriously'* (FG 2) and they expressed that *'the nurses and doctors do not listen to us'* (FG 1, 2, 3 and 4). This could cause a feeling of being powerless and lead to uncertainty when deciding what to do. Still, the nursing assistants regarded themselves as the residents' spokesperson and that it was their duty to speak for them because,

'the residents tell me more than they tell the nurse or the doctor' (FG 4) .

Choice of action

The nursing assistants' choice of action was described as stand up for your-self, hand over, wait and see and give up. The category stand up for your-self was about how to be consistent with the decision to act when a resident did not feel well. They stressed that it was important not to hesitate when reporting to the nurse and to *'clearly describe the symptoms in order to be listened to'* (FG 4). Another choice of action was to hand over all kinds of decisions to the nurse due to a feeling of not being allowed to make decisions. They also thought that *'the process taking place before something happens is too long'* (FG 3). If the nursing assistants felt a lack of energy, they preferred to give up and not act at all.

Of most importance for the nursing assistants choice of action was the feedback they received from nurses or physicians. If they felt no response they described this as a feeling of *'what we report is regarded as signs of ageing'* (FG 1) and *'the nurses and doctors do not want to treat because they [the residents] are too old'* (FG 2). They also stated that nurses did not think in the same way as they did. When the nursing assistants' views were really considered to be important they felt that they were participating in the decision-making process. They asserted, *'we are important because the nurse cannot have control of everything'* (FG 1). If they felt like important members of the team, taking part in the whole process, they could communicate their observations with the nurse and GP and thereby enhance inter-professional learning, which they thought would benefit the residents.

Overall it was outstanding that the nursing assistants desired partnership in the decision-making process with nurses and the physician, and at the same time often described themselves as 'we' and nurses and physicians as 'the others'. If the nursing assistants received a positive response when they perceived that a resident was feeling unwell, a sense of partnership was established. That also made them feel that they could stand up for their

knowledge of the resident and feel secure to hand over the responsibility for further action to the nurse.

'You get to know the doctors..//.... as well as the nurse. All three can discuss matters. Of course we know the care recipients and they know what treatment has the best effect. And of course we don't, but by working together, things may turn out pretty well' (FG 1).

If they did not feel they were part of the decision-making process, they stated that they gave up trying to be the residents' spokes-person vis-à-vis nurses and physicians, resulting in no action being taken.

'You can't spend all your energy on one care recipient, you can't fight on your own... and when things worsen and nothing happens it's easy to just stand there and play along instead of saying, "No, it simply can't go on this way. Now we have to do something. But it stops there and it's easy just to say OK and nothing else happens, although you really think its wrong (FG 1).

DISCUSSION

The present results show, in line with research on the clinical decision-making of home care nurses (11), that the nursing assistants use rationality as the basis for their clinical inferences, e.g. when evaluating whether the resident seems to be ill or not. Furthermore, in accordance with O'Neill (11), the nursing assistants' decisions were either autonomous, i.e. self-directed, consultative or collaborative. Cohen-Mansfield (14) reported that physicians focused on diagnostic terminologies, while the nurses described clinical conditions and symptoms with regard to the patient's condition. In the present findings, the nursing assistants stressed that

both nurses and physicians were more interested in medical terminology than descriptions of behaviour, which might complicate communication about the patient's condition. The nursing assistants' experiences of the clinical decision-making process is almost similar to how community nurses describe the process (12), although the result is not a nursing care diagnosis or decision about actions, but a statement of passing the observation to the nurse or not. The stages of recognition and formulation correspond to a pre-decisional activity, leading to the conclusion that the resident is not feeling well, which triggers an alternative generation and information search. The phase judgment or choice can be interpreted as taking action. The use of personal experience and preconceptions in the decision-making process can be compared with the physician's and nurse's approach to matching their memory of patients to determine the diagnosis and treatment. Strategies for gathering and evaluating information also shows that nursing assistants, as well as physicians and nurses, use different strategies to solve different problems (11). According to information processing theory the nursing assistants try to understand why the resident is not feeling well and, after testing the hypothesis of suspected infection, to reach a solution (passing on to the nurse or not) (9, 10). However, as for nurses the decision-making process described by the nursing assistants also have element of intuition (26) based on personal experience and knowing the patient, resulting in the feeling of "he/she is not feeling well today".

As we have described earlier, nursing assistants provide the vast majority of the direct daily care of frail elderly persons and possess a keen ability to observe changed behaviour (16). Their information is a crucial part of the nurses' clinical decision-making process, although the nurses are not always aware of its significance. In addition, nursing assistants mostly communicate their observations to medical staff only informally (27) or have their own system of verbal reporting and social records, which neither the nurses nor the physician

usually read. As a consequence, the responsible nurse and/or physician may not further assess important information about suspected infections that nursing assistants have actually observed (16)

Feedback on their observations from nurses and physicians was crucial for the nursing assistant's feeling of being a part of the decision-making process. The nursing assistant's feelings of powerlessness and a sense of giving up may have serious consequences for the elderly resident. Important information about the resident's condition may not be recognised causing a delayed diagnosis and treatment and hence unnecessary suffering. A fear of not being believed could sometimes have the consequence that the nursing assistant in frustration falsified observations of the resident's body temperature, to enforce treatment regimes. On the other hand, the opinion that they were the resident's spokesperson determined them to speak out and persist in informing the nurse that the resident did not feel well. These situations illustrate the significance of how profession and clinical context act as determinants of clinical decision (10, 26). Lopez (28) described nurses position as "playing the middleman" between residents, families and doctors. Kihlgren et al (29) also describes how deficiencies in the organisation make community care nurses feel insecure in their decision-making process. The nursing assistants in our study seem to feel to be in the same position and if there are two categories of staffs balancing their decisions the risk for ineffective, unsafe care increase. A supportive working environment with positive feedback from nurses and physicians seems to be of great importance for nursing assistants' ability to rely on their own competence and be able to feel secure in their profession. Such an atmosphere might also lower the risk of nursing assistants falsifying observations in order to be believed.

Taking together the present results indicate that the clinical decision-making process does not differ between nursing assistants' and nurses. However, the nursing assistants' part in the

process is more of involvement/collaboration and sometimes participation than partnership. The results underscore that in order to improve the clinical evaluation of the individual, and thereby optimise an evidence-based, safe, patient-centred, effective and equal care within reasonable time (5), it is important to involve nursing assistants in the decision-making process. A hindrance to this goal might be a hierarchical organisation and therefore it would be interesting to study whether an organisation based on inter-professional practice (6) improves a decision-making process based on partnership.

When choosing focus groups as the data collection method we were aware of the fact that the information obtained was retrospective and could be influenced by experiences of what actually happened with the elderly resident after the assessment and decisions made by the nursing assistants. Therefore, the focus group format was chosen so the informants could help one another to remember but also to illuminate culture values within the nursing assistant group (19). We also assumed that a group of nursing assistants could feel more secure together since both researchers were registered nurses and that this fact might influence the frankness of each individual nursing assistant. As retrospective reporting relies on long-term memory it may not always be accurate. Therefore, further studies is needed to explore the cognitive strategies involved, by verbal protocols, during daily care of the residents (9). It is important to recognise the invisible hierarchical structure that might be present in a situation like the present one when collecting data. We have no reason to believe that this was the case in any of the four focus groups. All participants spoke very frankly about their feelings and how they worked together. One of the researchers (M S-L) has prior experience of working in the community care organisation where the study took place. She knows the organisation and therefore could challenge the informants with specific questions when they were describing a phenomenon in order to strengthen the trustworthiness of the data. The other researcher (P T)

had no experience of the setting and could act as an observer and take notes on the processes occurring in the group in order to act on unanswered questions during the session.

A critical issue in qualitative content analysis is the selection of the most suitable meaning units (22). When it comes to FG data it is a balance to choose meaning units illustrating individuals' opinion as well as group consensus. In this study we selected both types of data (19). In order to increase the trustworthiness in our study, the researchers first read the text and marked meaning units independently. During the selection of meaning units the aim was constantly reconsidered to ensure that the chosen meaning unit was suitable. After that we compared the markings and discussed the differences until agreement was reached. In addition, when the codes and categories (the manifest content) had been labelled the actual words expressed by the informants were used to the greatest possible extent in order to stay close to the experiences of the nursing assistants. In the reflection phase aiming at revealing the latent content, both researches discussed the categories to see how they emerged in a clinical decision-making process and the meaning units were used once again to ensure that our impression had a solid ground in the nursing assistants' descriptions. It should also be noted that this study is performed in Sweden, where nursing assistants perform most of the daily care duties in the care of elderly, which may not be the case in another context.

CONCLUSION

The findings show that nursing assistants' assessment is based on knowing the resident, personal experiences and ideas about ageing. When they chose action nurses' and physicians' response to the nursing assistants' observations had a great impact on the latter's further action. A true inter-professional partnership in the clinical decision-making process would enhance the possibility to detect suspected infection early on, and thereby minimize the risk of

delayed diagnosis and treatment and hence unnecessary suffering for the individual.

RELEVANCE TO CLINICAL PRACTICE

The present results underscore that in order to improve the clinical evaluation of the individual, and thereby optimise patient safety, it is important to involve nursing assistants in the decision-making process.

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