Modeling and managing the patients’ need for clinical care: Enhancing evidence-based practice and management
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NURSE STAFFING ISSUES

ARE JUST THE TIP OF THE ICEBERG: A qualitative study about nurses’ perceptions of nurse staffing

Catharina J van Oostveen, Elke Matthijssen, Hester Vermeulen

Submitted
ABSTRACT

OBJECTIVE: To obtain in-depth insight into the perceptions of nurses in the Netherlands regarding current nurse staffing levels and use of nurse-to-patient ratios (NPRs) and patient classification systems (PCSs).

BACKGROUND: In response to rising health care demands due to aging of the patient population and increasing complexity of healthcare, hospital boards have been implementing NPRs and PCSs. However, many nurses at the unit level believe that staffing levels have become critically low, endangering the quality and safety of their patient care.

METHODS: This descriptive phenomenological qualitative study was conducted in a 1000-bed Dutch university hospital among 24 wards of four specialties (surgery, internal medicine, neurology, gynecology & obstetrics and pediatric care). Four focus groups (n=44 nurses) were organized and 27 interviews (20 head nurses, 4 nurse directors and 3 quality advisors) were conducted. Data were collected from September until December 2012. Data-analysis was done by coding.

RESULTS: Nurse staffing issues appear to be merely the ‘tip of the iceberg’. Below the surface three underlying main themes became clear – nursing behavior, authority, and autonomy – which are linked by one overall theme: nurses’ position. In general, nurses’ behavior, way of thinking, decision-making and communication of thoughts or information differs from other healthcare disciplines, e.g. physicians and quality advisors. This results in a perceived and actual lack of authority and autonomy. This in turn hinders them to plead for adequate nurse staffing in order to achieve the common goal of safe and high-quality patient care. Nurses desired a valid nursing care intensity system as an interdisciplinary and objective communication tool that makes nursing care visible and creates possibilities for better positioning of nurses in hospitals and further professionalization in terms of enhanced authority and autonomy.

CONCLUSIONS: The perceived subservient position of nurses in the hospital appears to be the root cause of nurse staffing problems. It is yet unknown whether an objective PCS to measure nursing care intensity would help them communicate effectively and credibly, thereby improving their own position.

KEYWORDS: INTER-PROFESSIONAL RELATIONSHIPS; NURSE STAFF HOSPITAL/ORGANIZATION & ADMINISTRATION; QUALITATIVE RESEARCH; PROFESSIONAL AUTONOMY

INTRODUCTION

Nurses represent the single largest group of healthcare professionals in hospitals, and nursing care consumes a substantial proportion of hospital costs. Therefore, it is important that nurses’ time is used efficiently and effectively. Cost containment demands and budget restraints underscore the need for adequate nurse staffing to ensure high-quality care in the most economical way. Ideally, the demand for care and personnel staffing match perfectly and influence patient outcomes positively (e.g. nurse-sensitive outcomes and adverse events) as well as personnel outcomes (e.g. job satisfaction and absenteeism). However, nurses have reported that their staffing levels are inadequate to provide high-quality care. Indeed, nurse staffing levels and patient outcomes are positively correlated, while in hospitals with high patient-to-nurse ratios (NPRs), higher mortality and failure-to-rescue rates are reported. Furthermore, nurses are more likely to suffer from burnout experiencing high workload.

The economic formula to match the demand for care to nurse supply was found far from simple in clinical practice. This explains the many staffing models used on the patient interaction, health care organization, and policy levels. The NPRs in California are an example of a nurse staffing model on the policy level. In 1999, California adopted legislation mandating minimum licensed NPRs, with specific ratios for different types of hospital wards. Since then NPRs have spread to other states in the USA and other countries, even without legislation or policy regulations. In Australian hospitals nursing hours per patient day (NHPPD) are generally legislated on the policy level and used on the health care organization level for allocating nursing resources. Twigg & Duffield classified hospital wards based on their patient case-mix into NHPPD categories to allocate resources. Another attempt to match nursing supplies with patient demand was the development of patient classification systems (PCSs). These instruments consist of objective and subjective critical indicators and nursing tasks regarding patients’ health status. Based on this information patients can be categorized and the required nursing resources as well as the number of patients assigned to an individual nurse can be determined. This usage indicates that PCSs are used as a management tool on the patient interaction level. In Finland, the use of a PCS is recommended at the policy level by the Finnish government to determine an optimum staffing ratio. These ratios are based on aggregated administrative data of nursing care intensity measures by a PCS, nursing resource assessment, and a professional assessment of optimal nursing care.

In Dutch hospitals, NPRs and PCSs are both frequently used for nurse staffing. However, there is no uniformity in the nurse staffing models used, resulting in
variability within and among hospitals. Policy and guidance for nurse staffing are lacking at the policy and health care organization levels. Due to the current spiraling healthcare costs and economic crisis, frontline nurse staffing in Dutch hospitals is under scrutiny, resulting in what is perceived by whistle blowers as “critically low” nurse staffing levels. Insufficient information exists about the perceptions of nursing directors, their policy advisors, head nurses and frontline nurses concerning the current nurse staffing levels and the use of NPRs and PCSs in Dutch hospitals. Thus, decisions at the health care organization and policy level could be made without taking the perceptions and preferences of nurses into account. Insight into these aspects would facilitate a consensus at the health care organization level and could fuel a national discussion on nurse staffing.

To obtain in-depth insight into the perceptions of nursing directors, their policy advisors, head nurses and frontline nurses on the current nurse staffing levels and the use of NPRs and PCSs.

**METHODS**

**Design**

We used a descriptive phenomenological approach to reduce individual experiences by describing what participants have in common. We organized focus groups of frontline nurses and interviews with nursing directors, their policy advisors and head nurses. Both methods are effective to get rich data from nurses and nurse managers and were held contemporaneously to enable ‘cross-pollination’ between the two methods. The design and execution of our study complied with the CONSORT criteria for Reporting Qualitative studies (COREQ) checklist.

**Setting, Organizational structure and Staffing model**

The study was conducted in a 1000-bed university hospital in the Netherlands. The hospital board of directors consisted of two medical directors and one financial director. Each specialty division was also managed by a three-person board, a medical officer, a nursing director, and a financial officer. Each division consisted of a number of nursing wards, managed by Chefs de Clinique and head nurses. The medical and financial officers managed the budgets. On the ward level, the Chef de Clinique was formally positioned above the head nurse. All medical and financial officers and Chefs de Clinique had master’s level qualifications or higher. Nursing directors, quality officers and head nurses were qualified nurses with additional management training. A few held master’s qualifications, but this was not a requirement. The nursing skill mix consisted of nurses with bachelor degrees (BSN) and licensed vocational nurses (LVN).

The nurse staffing model is since 2012 formulated by NPRs; 1:4, 1:6 and 1:10 as maximum ratios for respectively the day, evening and night shift. Head nurses use their experiences, gut feeling and self-designed PCSs to allocate nurses and assign nurses to patients on operational level.

**Participants**

Five general medical specialties (surgery, internal medicine, neurology, gynecology & obstetrics and pediatric care), supported by 24 hospital wards, were involved in this study. A multimethod approach was used for sampling due to the complexity of the nurse staffing process and the different managerial levels involved.

A convenience sample was used to select 44 nurses who participated in four focus groups, stratified by the five specialties involved in this study. These nurses were nominated by their head nurses. They were expected to have a wide range of views on staffing, were both men and women, and had different levels of education and years of working experience.

For the semi-structured, in-depth interviews (n=27), a purposive sample was used. The interviewees included 20 head nurses, 4 nursing directors and 3 policy advisors. This sample maximized the diversity relevant to the research question of this study as all head nurses, nursing directors and policy makers from the five specialties were involved. Two senior nurses who replaced their head nurses were initially selected for participation, but were excluded because they were unable to discuss nurse staffing on the health care organization level.

All participants were informed about the aim of the study and were invited to participate by e-mail.

**Data collection**

Data were collected between September 2012 and December 2012. In our hospital a model for managing complex changes is used for shaping or screening quality improvement implementations, because of its insightfulness and simple clarification of usual problems with changes. This model is a modification of the model for Managing Complex Change developed by Lippitt (Enterprise management Limited), and describes a straightforward model with a matrix of five requirements for successful complex change: vision, skills, incentives, resources and action plan. The lack of one or more requirements can, for instance, lead to frustration or a false start, i.e. implementation problems.

Because nurses were familiar with this model we used it as underlying framework to obtain insight into nurses’ perceptions of changes in nurse staffing. As the
Focus groups
The focus groups were conducted in the last hour of the nursing day-shift (15:00 to 16:00 PM) and consisted of a brown-paper session (concepts emerging were directly written on a brown-paper during the session) structured by the five requirements of the model for managing complex change. To acquire insight in the perceptions of the attendants each requirement was discussed for 10 minutes with the use of open-ended questions and a topic list, based on available literature (Table 1). Additional topics, found during the focus groups, were added to the topic list and used for the subsequent focus groups and interviews. One researcher (CO) moderated the focus groups and another researcher (HV) observed and took notes. The focus groups were also audio-taped to complete the notes.

Interviews
The interviews, conducted by one researcher (CO), took place at a time and location according to the participants’ wishes and took between 30 and 60 minutes. All participants were interviewed once. To get insight into the perceptions of the interviewees, the same open-ended questions were asked as in the focus groups (Table 1). Interviewees were encouraged to describe their lived experiences in nurse staffing. Probes and prompts were used as questioning techniques. The interviews were audio-recorded, and notes were made immediately following each interview. Participants were asked whether they wanted to receive the completed transcript of their interview. The quality of the interviewer’s (CO) technique was judged during the first interview by an interviewing expert (RS) and was found appropriate.

Role of the researchers
The two researchers involved in the process of data collection (CO, HV) can be considered as ‘insiders’. HV is a clinical epidemiologist and positioned as assistant professor. She has longstanding experience in research and evidence-based quality improvement in which qualitative research plays a role. CO is a PhD candidate trained in nursing science, in which qualitative research is a substantial part of the curriculum. Prior to their academic careers, they both worked as nurses in the hospital that was the setting for this study. The focus groups and interviews were conducted with participants the researchers often worked with as a nurse or as a researcher and academic nurse role model. This insider role allowed the researchers more rapid and more complete acceptance by the participants. On the other hand, the participants may have given socially desirable answers. To avoid bias, both researchers set aside their experiences as much as possible.

Table 1 Focus group and interview questions and topics structured by current model for managing complex change

<table>
<thead>
<tr>
<th>VISION</th>
<th>QUESTIONS AND TOPICS</th>
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<tr>
<td>1 Q</td>
<td>What do you think the organizational vision on nurse staffing is about?</td>
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<tr>
<td>T</td>
<td>nurses/ patients/ quality &amp; safety/ evidence-based/ patient centered/ personnel centered</td>
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<tr>
<td>2 Q</td>
<td>How is the organizational vision, regarding nurse staffing, operationalized on your ward, in your profit area, or in the hospital?</td>
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<tr>
<td>T</td>
<td>nurse patient ratios/ patient classification systems/ nursing care intensity/ nurse sensitive outcomes/ ward policies and tactics/ benefits or disadvantages for organization, nurses and patients</td>
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<tr>
<td>3 Q</td>
<td>What is your personal vision on nurse staffing?</td>
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<tr>
<td>T</td>
<td>organization/ nurses/ patients/ evidence-based/ quality &amp; safety/ patient centered/ personnel centered</td>
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<tr>
<td>4 Q</td>
<td>What would be the operationalization of your personal vision?</td>
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<tr>
<td>T</td>
<td>nurse patient ratios/ patient classification systems/ nursing care intensity/ nurse sensitive outcomes/ ward policies and tactics/ benefits or disadvantages for organization, nurses and patients</td>
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<tr>
<th>SKILLS/ RESOURCES (CONSTRAINTS)</th>
<th>QUESTIONS AND TOPICS</th>
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<tr>
<td>5 Q</td>
<td>Which nursing skills, knowledge and resources are needed to realize that vision or policy?</td>
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<tr>
<td>T</td>
<td>budget/ nursing habits/ nurses’ position/ professionalization/ behavior/ academic nurse: evidence-based practice, interprofessional collaborator, organizer and quality improver/ leadership</td>
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<tr>
<td>6 Q</td>
<td>How do you feel about current skills, knowledge and resources?</td>
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<th>INCENTIVES</th>
<th>QUESTIONS AND TOPICS</th>
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<tr>
<td>7 Q</td>
<td>What are the incentives of the current nurse staffing model according to the organization, the head nurse, nurses on the ward, and the patient?</td>
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<tr>
<td>T</td>
<td>quality of care/ finances/ ward production/ nursing culture/ team culture, behavior, other disciplines</td>
</tr>
<tr>
<td>8 Q</td>
<td>How do you feel about these incentives?</td>
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<td>T</td>
<td>opposite/ equivalent/ empowering/ quality</td>
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<th>ACTION PLAN</th>
<th>QUESTIONS AND TOPICS</th>
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<tr>
<td>9 Q</td>
<td>What do you hope the outcome or continuation of this study will be?</td>
</tr>
<tr>
<td>T</td>
<td>implementation nurse staffing model/ good/ vision on nursing/ practical advices: start, actions, best experiences, best practices by nurses, strategies, strategic choices</td>
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Q = question; T = topic; vs = versus; irt = in relation to
Data analysis

Four researchers were involved in the process of data analysis (CO, EM, SB, HV) using Colazizzi’s analytic method. From December 2012 through June 2013, the interviews were transcribed verbatim and reviewed independently to ensure accuracy. To grasp the context, the transcripts were read several times. Data analysis was conducted in Dutch, using MAXQDA version 11. Each transcript was analyzed independently by two researchers.

The process of data analysis started with breaking down the data into meaningful segments, which were labelled with codes. The codes were based on the words the participants used. Next, the codes were clustered into categories and themes, and finally the themes were integrated into an exhaustive description of the phenomenon. To increase transparency, memos were used in which meanings were written down about the emerging themes. Consensus about the codes, categories, themes and their meanings was reached during joint meetings. Discrepancies were resolved by discussion between the researchers. This process of researcher triangulation was used to increase this study’s reliability and validity. The focus groups were directly coded from the notes and statements on the brown papers, following the same process as the interview coding. Audio recordings were used to check the notes and codes. During the process of data analysis, data saturation confirmed that the sample size was sufficient. All nursing directors from the hospital under study, along with two nursing directors from other academic hospitals, were asked to reflect on the investigators’ interpretation of the results regarding validity and generalizability. They recognized the results and confirmed that the same themes were applicable to their situation.

Ethical considerations

Our local medical ethics review board (Academic Medical Center, Amsterdam, The Netherlands) approved the study but waived the need for ethical approval as the study had no effect on the participants’ or patients’ wellbeing.

Permission for this study was obtained from the nursing directors. Participants were given a full explanation of this study prior to the focus groups and interviews and gave oral informed consent and permission for audio-recording. Assurances were given that all data would remain confidential and that the anonymity of the participants was guaranteed by disassociating their names. Data were saved under identification numbers, which were safeguarded by one of the researchers (CO).

RESULTS

The result of the data analysis was that nurse staffing – as tip of the iceberg – comprised three underlying main themes – nursing behavior, authority, and autonomy – which were linked by one overall theme: the nurses’ position (Figure 1).

The main themes influenced the nurses’ perceived and actual position in a positive or negative way. Several subthemes were identified: narrow vision on high-quality patient care, nurses’ problem solving, different communication style, different work ethic, conflicting interests, nurses’ value, quantifying nursing care, and desire for more autonomy (Table 2).

Figure 1  Nurse staffing: the tip of the iceberg
Table 2 Definitions of Main Themes

<table>
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<th>THEME</th>
<th>DEFINITION</th>
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| Nursing behavior | Actions and reactions of nurses:  
- narrow vision on high-quality of care as nurses prefer direct patient-related nursing tasks. Moreover, are inwardly focused and feel administrative tasks to control quality of care and innovation projects keep them away from their patient;  
- ad hoc behavior; making short term solutions instead of constructive long term solutions (downsizing number of beds, re-scheduling);  
- reactive behavior as being dependent on other disciplines and processes instead of being proactive and self-controlling (e.g. admission scheduling, innovation projects);  
- different communication style: feelings and opinions are dominant in nurses’ communication, while other disciplines are more sensitive to facts or evidence (e.g. talking about patient’s health status, nursing care intensity);  
- different work ethic: nurses think of themselves as hardworking people, while others think they spend their time inefficiently (e.g. taking long breaks, taking care of colleagues, return on investment is low on support of developing skills). |
| Authority | Degree of power and control:  
- conflicting interests: nurses interests are ignored, lacking arguments for high workload (e.g. admitting patients to wards);  
- nurses’ values: nurses are not involved in decision-making concerning nurse staffing, which makes them feel like they do not matter. |
| Autonomy | Freedom or privilege to act independently:  
- difficulties in quantifying nursing care: no measure is available for nurses proving they experience high workload;  
- desire for more autonomy: nurses suggested a patient classification system is needed to earn autonomy in balancing nurse staffing with nursing care intensity, and eventually earn authority by getting into dialogue and decision-making about nurse staffing with constructive and objective arguments for long-term solutions. |

Nurses’ professional behavior

Narrow vision on high-quality of care
Quality of patient care appeared to be the driving force with respect to nurse staffing levels for all participants, i.e., nurses, nursing directors, head nurses and policy makers. Nurses viewed this from the perspective of the patients; the patients and their families must be satisfied with the quality of care.

Nursing director, 28 “[…] so that you have enough time to spend on patient care. You can fulfil all your nursing tasks. That feels like; ‘Oh, I’ve completely finished everything and everybody is satisfied’.”

The workload on the nursing wards of an academic hospital is high due to the complexity of patient care and non-patient related tasks. Nursing directors and head nurses mentioned that, due to shortage of time and resources, nurses are prioritizing their duties leaving some tasks unfinished, which can lead to undesirable or unsafe situations.

Head nurse, 25 “It is tragic that a nasogastric tube must remain in because the nurse does not have enough time to feed the patients. That is seriously wrong.”

Nurses and head nurses reported experiencing a shift away from their primary task of direct patient care. In particular, administrative burden and top-down implemented innovation projects kept nurses away from patients. One of the head nurses said that it was disappointing when she discovered that nurses spend much less time on patient care than she thought. However, the head nurses accepted that administrative tasks to control quality of care and innovation projects are part of the nursing profession. Nursing directors and quality advisors indicated that nurses are inwardly focused, struggling with organizational changes, and that some (head)nurses have a narrow vision on quality of care, overvaluing direct patient care and underestimating all other competencies which are important to deliver high quality and safe care.

Head nurse, 23 “I think 100% of the nurses want to provide good care, they want to be there for their patients. […] I got an e-mail yesterday from a colleague who is now working overseas for three months. The gist of her wonderful e-mail was: no disturbing monitors, no disturbing emergency admissions. She could just provide patient care. In my opinion this is what nurses want. It would be desirable to provide 100% direct patient care. Just like overseas…”

Nurses’ problem solving
Nurses and head nurses both mentioned that inefficient processes keep them away from direct patient care and cause a high workload. They not only feel they are, but in fact are made responsible for, solving many malfunctioning processes. Nursing directors and policy advisors also mentioned that, due to inefficient processes, the workload they experience is much higher than it ought to be.

Nursing director, 24 “There was a patient who came to our ward for chemo. […] But the chemo was not on our ward. The nurse searched, called, and checked again. She called the responsible physician, but he was abroad,
and his deputy was asleep after his nightshift, and so he could not be reached. It turned out that the responsible physician had filled out another ward on the request form, instead of our ward. Just the wrong ward. […] The nurse had been busy for 45 minutes to correct the physician’s mistake, and to make sure that the patient received the chemo. In the 45 minutes the nurse spent sorting this out, she could not do anything else.”

All participants indicated that nurses contribute to inefficient processes by making ad-hoc decisions instead of constructive, long-term decisions. One of the head nurses said that making ad-hoc decisions is the nature of nursing care. Policy advisors confirmed that making ad-hoc decisions is something nurses naturally do; quickly assess and act to save someone’s life. However, nurses acknowledge that making ad-hoc decisions influences the workload negatively; it causes severe fluctuations in the workload that nurses experience.

Nursing director, 28 “Sure, a part of nursing care consists of firefighting [making ad-hoc decisions]. That is the nature of nursing care. But many fires occur at places where they should not, where we could have done some fire prevention.”

Head nurses used ad-hoc strategies to solve staffing problems, i.e. reducing bed capacity when there is a lack of personnel or excessive nursing intensity on the ward. They also said that their behavior is reactive instead of proactive. Therefore, nurses’ problem-solving behavior hampers sustainable solutions.

Head nurse, 16 “Our workload is determined by the physicians’ operating program. We do not know how many resources we will need for the next week. We just respond afterwards.”

Different communication style
Nursing directors and policy advisors indicated that nurses’ communication is different from other disciplines, which may cause misunderstandings about what nurses do and what the essence of their message is. The reason specified is that feelings and opinions are dominant in nurses’ communication on nurse staffing, while other disciplines are more sensitive to facts or evidence.

Head nurse, 21 “Nurses are often not taken seriously because it is all about emotion.”

Different work ethic
Nursing directors, head nurses and policy advisors believed that nurses do not spend their time efficiently. While most nurses think of themselves as hardworking people who do not have enough time for professionalization due to a heavy workload, policy advisors said that when their workload is light, nurses do not spend this time on professional development or quality improvement projects, but instead take longer breaks.

Head nurse, 11 “I will tell you something… I do not think our nurses behave like an academic nurse. It is my opinion, but when they have time to innovate and do some work for projects, the return on investment for me is very low.”

Lacking authority
Conflicting interests
Another underlying cause of inefficient processes is conflicting interests between different disciplines. Nurses and head nurses said that they bear the brunt of decisions made by others. They do not have enough power to argue for more resources, which results in disregarded interests. When it comes to the admission of patients to the hospital wards, nurses mentioned that physicians may even change the rules somewhat to get a patient admitted, and in the end nurses always draw the short straw.

Nurse, focus group 3 “Dirty games are played to admit a patient to a ward.”

Nurses’ value
Nurses are not involved in decision-making concerning strategic goals and policies, such as staffing policies, even if they indicate that they want to contribute. Decisions are simply made in a top-down fashion by chairpersons and directors, which makes nurses feel like they do not matter.

Head nurse, 21 “From each group a representative was selected to speak about reorganizing our division. They formed a think tank. However, no nurses were chosen! […] You cannot exclude such an important discipline and simply say that they do not have a comprehensive view. That is nonsense! […] So, I made it clear that this was not a desirable situation.”

There is still a rigid hierarchy in hospitals, placing the physicians in charge. Nurses said that, although nurses are indispensable, their work is still not valued.
Nurse director, 24 “What would you be without a nurse! [...] How is it possible that a physician, standing so close, does not see the adding value of a nurse...”

Enhancing autonomy

Quantifying nursing care

Nurses and head nurses indicated the number of patients is not the main factor causing high workload, but rather the complexity of nursing care for these patients. Patient characteristics, outcomes, mental state (e.g. multi-morbidity, complications, anxiety) and administrative burden play an important role in nursing workload. Psychosocial activities and administrative tasks are particularly hard to quantify. Some nurses and head nurses mentioned they tried to develop their own PCS to quantify their nursing care intensity. However, as these systems are not validated or tested for reliability, the intensity scores are inconsistent and lead to unexpected nursing care intensity scores.

Head nurse, 21 “We have discussed it with several hospital wards... How can we demonstrate that we are busy, and how can we decide how many resources we need? Do we have too few, or too many resources?”

Therefore, nurses have difficulties showing other disciplines what their work entails. Some head nurses mentioned the lack of a valid system as the causative factor of misunderstandings in the communication with other disciplines.

Head nurse, 4 “They see five empty beds and wonder why we cannot admit more patients. That is because of the nursing care intensity and available nursing resources. However, we have no uniform measure for that. How can we sell that and how can we expect that they will agree with our refusal to admit more patients?”

Desire for more autonomy

Nurses and head nurses mentioned that they yearn for a valid nursing care intensity measure to give insight into their work, make their work visible, and create more respect for their profession. Nurses believed that a valid PCS to measure nursing care intensity would give them the opportunity to get involved in decision-making on nurse staffing, give them more autonomy and authority.

Head nurse, 4 “For nurses, I think, it is nice because nurses can... Now they can say very clearly: the ward is overcrowded or not. [...]”

With such a system, you give the nurse, and I think this is very important, their own autonomy.”

Although others state that lacking a valid PCS is just an excuse for the real problem, i.e. poor nursing leadership and communication.

Quality advisor, 29 “The problem is... it is not the system. The problem is, nurses do not dare to engage in the dialogue!”

Quality advisor, 30 “You have to earn autonomy. It is not something you just get, you have to enforce it by showing who you are and what you can do. That is how you get autonomy.”

Nurses want a valid PCS for interdisciplinary communication, to enable constructive and objective dialogue between nurses and physicians, frontline nurses and their head nurses, head nurses and their directors and policymakers. Head nurses and frontline nurses want to be fully engaged in the discussion about nurse staffing.

Head nurse, 25 “We have to start with a clear standard for nurse staffing and stay in dialogue about it. Top-down and bottom-up.”

DISCUSSION

Main findings

Experiences with nurse staffing comprise three main themes: nursing behavior, authority and autonomy. Nurse staffing therefore appears to be the tip of the iceberg, masking many and much larger problems beneath. All of these themes boil down to one focus: the position of nurses. This appears to be highly important for the professionalization of nursing and ultimately for the quality of patient care. Time to provide direct patient care is mentioned by the nurses as the most important factor to provide high quality of care and therefore adequate nurse staffing is considered crucial because it enables them to provide this care. According to the nurses in our study, current nurse staffing and inefficient processes adversely affect the quality of care. They believe that a valid nursing care intensity score, measured by a PCS, could be used as an interdisciplinary communication tool, i.e. providing insight in nurses’ work, aligning organizational processes on the ward (e.g. admitting patients), and tailor personnel and resources. This would also enhance autonomy in decisions about nurse staffing and help to establish a professional culture that values nurses more highly.
Asking nurses about their perceptions on nurse staffing led to valuable information on the nurses’ work situation. Apparently, nurses did not have specific visionary ideas on nurse staffing, but used the focus groups and interviews to express their dissatisfaction on issues related to workload. However, or results are confirmed by other studies that provided quantitative insight into the association between nurse staffing levels, a work system full of inefficient processes and negative patient outcomes\textsuperscript{6,22,23}. Surprisingly, none of the interviewees supported their beliefs about the necessity of adequate nurse staffing with scientific evidence. This confirms our findings on different communication styles among disciplines. Apparently, nurses still have to catch up with other disciplines when it comes to evidence-based decision making\textsuperscript{24,25}. Nurses think of themselves as hard working people who have to deal with a heavy workload. However, their self-concept differs from that in other disciplines. Their image has suffered from public stereotyping\textsuperscript{26} and, although the nursing profession has changed\textsuperscript{27}, it is still perceived as a profession serving other disciplines. Nevertheless, nurses have shown little proactivity to change this image. Instead, they continue to act in an ad-hoc and reactive fashion to processes (often inefficient ones) over which they have little influence.

Nurses in this study appear to be inwardly focused, even though they would be happy to be more involved in decision-making on staffing and professionalization on the health care organization level. The phenomenon of nurses complaining and struggling with physicians and management is not limited to the hospital in the present study\textsuperscript{28,29}. Part of this phenomenon can be traced back to pre-professional nursing history: motherhood, altruism, charity and piety\textsuperscript{30}. These values are reflected by the nurses in our study when they express their opinions about the quality of care, the time allotted for direct patient care and attention to the patients’ families. It seems likely that nursing history has made a position of powerlessness acceptable for nurses who are faced with the ‘impossibility’ of their role in the organizational hierarchy\textsuperscript{31}. This supports the finding that, even if nurses are supported to act professional, they sometimes choose not to do so.

According to studies that relate nursing organizational models or work systems to patient outcomes\textsuperscript{23,32}, the Dutch organizational model is a ‘basic functional model’: it lacks a supporting climate for nursing professionalization and dealing with inefficient processes and low NPRs. These deficiencies do not facilitate the aims of high-performance and reliable organizations, especially in a university hospital.

**Implications on the health care organization level**

Besides being responsible for direct patient care, nurses are also challenged to take responsibility to improve their work system and communicate adequately by using facts or evidence. Head nurses and nursing directors can help frontline nurses face this challenge through empowerment and role modelling, by being nurse leaders. Strong leadership leads to staffing adequacy, involvement in policymaking and better collaboration with physicians\textsuperscript{33}, and improves outcomes for patients (e.g. nursing-sensitive outcomes), organization (e.g. efficiency and quality) and personnel (e.g. job satisfaction, less absenteeism)\textsuperscript{34,35}. Aiken et al. attributed the better outcomes in high-performance organizations especially to professional nursing work systems, where nurses experienced more autonomy, more control over their practice and better relationships with other disciplines within the hospital\textsuperscript{36}. Adapting principles of high performance has proven successful in many countries, regardless of differences in financial and delivery systems\textsuperscript{37}. Therefore, as a future perspective, it is worthwhile addressing this issue more extensively in the Netherlands, in addition to implementing a valid nursing care intensity scoring system.

**Implications on the policy level**

Considering the American, Australian and British literature on nurse staffing and the effect on patient outcomes\textsuperscript{6,32,38}, it is clear that not only hospital boards and nursing directors should support frontline nurses regarding nurse staffing and positioning issues, but also politicians.

Little research is available on the current and optimal NPRs in the Netherlands. However, recent research has shown that lower NPRs, also in the Netherlands, will improve patient outcomes in surgical patients\textsuperscript{6}.

**Limitations**

Some limitations warrant consideration. First, this study took place at only one university hospital in the Netherlands. Although the findings can probably be generalized to other Dutch hospitals (the consulted nursing directors from other academic hospitals in the Netherlands agreed on the identified themes), they cannot be generalized to all other hospitals or hospitals in other countries. However, depending on their degree of professionalization, many hospitals will likely recognize the themes from this study. Furthermore, the message that nurses have to play an active professional role to provide high-quality patient care is valid for nurses worldwide.

Second, the role of the researchers may have influenced the data collection. However, the shared experiences were open-faced and authentic, probably because the participants assumed the researchers to understand and handle the information with integrity\textsuperscript{39}. 
CONCLUSION

Our study on the perception of nurses regarding nurse staffing shows that the positioning of nurses is crucial. On the patient interaction level nurses are challenged by a lack of authority and autonomy in decision-making on nurse staffing. They are hindered by their current communication skills, which can be improved if they would support their arguments with evidence on the association between nursing care intensity and the adverse effects on outcomes for patients and personnel. Further research is needed to explore whether an objective nursing care intensity score can influence nurses’ position and enable a constructive (interdisciplinary) dialogue on adequate nurse staffing.

On the health care organization level, nursing directors should discuss how they can move from a basic functional model to a professional functional model. Such a professional model creates a work environment that values and empowers nurses, and generates possibilities for evidence-based quality improvement. This will result in both personal growth for their staff and improvements in patient safety and quality. On the policy level, it would be helpful to re-open the discussion on formulating legislation regarding optimum nurse staffing levels. To support this discussion, more research on the relationship between nurse staffing levels and patient outcomes (i.e. nurse-sensitive outcomes and complications) is needed. In the meantime, nursing leaders should begin taking responsibility for transforming their own profession.

COMPETING INTEREST

The authors declare that they have no competing interests.

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