Newly graduated nurses' clinical competencies and need for further training in acute care hospitals

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Abstract
Aim: To assess self-reported clinical competence and the need for further training among newly graduated registered nurses (NGRNs) working in Swedish acute care hospital settings.

Background: NGRNs are expected to take full responsibility for patients' nursing care in an increasingly complex clinical context, and professional nurses' clinical competence is critical in providing high-quality and safe nursing care.

Design: A cross-sectional design.

Methods: Data were collected using the 50-item ProffNurse SAS II. A total of 85 NGRNs who had recently commenced working with direct patient care at three hospitals in central Sweden participated in the study. The response rate was 69%. The STROBE cross-sectional reporting guidelines were used.

Results: The NGRNs assessed their clinical competence as being highest in areas relating to team collaboration and ethics and lowest in areas relating to professional development and direct clinical practice. The need for further training was greatest in areas such as direct clinical practice and patient safety and lowest in areas such as team collaborating and ethics.

Conclusion: The use of instruments to identify NGRNs' self-assessed clinical competence is of value when designing and evaluating introductory programmes for NGRNs taking on positions in acute care hospital settings. The availability of experienced nurses from whom NGRNs can gain clinical competence and learn from is of importance, both from the perspective of the NGRNs themselves and patient safety.

Relevance to clinical practice: An understanding of NGRNs' clinical competence and their need for further training may assist in both planning and organising nursing programmes and in making clinical policy decisions when designing introduction programmes in acute care settings.

Keywords
acute care, competencies, graduate nurses
1 | INTRODUCTION

The goal of health care is to provide safe, high-quality care, and this places nurses’ competence in focus (ICN, 2013, 2019). An important challenge is that newly graduated registered nurses (NGRNs) are expected to take on the same responsibilities and duties as experienced nurses (WHO, 2015). The clinical context of nursing care is rapidly changing with regard to where it is carried out (Lima, Newall, Kinney, Jordan, & Hamilton, 2014), patient morbidity is becoming more complex (Dharmarajan et al., 2016), and there is a seemingly constant shortage of nurses (ICN, 2017), particularly of experienced nurses (National Board of Health & Welfare, 2015). Therefore, it is of great importance that NGRNs’ clinical competence is adapted to current contexts so that they can offer safe, high-quality care in changing healthcare systems, including acute care hospital settings.

2 | BACKGROUND

In several western counties (Buchan, O’May, & Dussault, 2013), including Sweden (National Board of Health & Welfare, 2015), the complexity of the clinical context of nursing is increasing (Disch et al., 2016). This is due to several factors including patients’ length of hospital stays decreasing (Buchan et al., 2013) and the increase in the number of patients with acute disease status or chronic and complex co-morbidities (WHO, 2015). New medical advances and technologies (Buchan et al., 2013), health care-associated and nosocomial infections (Musau, Baumann, Kolotylo, O’shea, & Bialachowski, 2015), and older and frail patients with several chronic diseases (Zwijnen, Nieuwenhuizen, Maarsingh, Depla, & Hertogh, 2016) further increase complexity. Today’s healthcare systems also face difficulties with nursing shortages (ICN, 2017) among other issues caused by an extensive generation shift in healthcare providers (National Board of Health & Welfare, 2015). Dissatisfaction and high workloads among NGRNs have led to increasing numbers leaving the profession. Furthermore, unsatisfactory working conditions and unreasonable workloads can result in burnout and increased turnover among nurses in their first years of working life (Aiken et al., 2012; Rudman, Gustavsson, & Hultell, 2014). Despite this, NGRNs have the same professional responsibilities and demands placed on them as experienced registered nurses (WHO, 2015). In order to meet these demands, such as providing nursing care for patients with complex needs, clinical competence is crucial to providing safe, high-quality care (Aiken et al., 2012; Sturmberg & Lanham, 2014).

2.1 | The concept of competence in nursing practice

In recent years, a holistic definition of the concept of competence in nursing has emerged (Yanhua & Watson, 2011). Competence in nursing is a dynamic process rather than the sum of individual competencies (Gardiner & Sheen, 2016). Further, in a review of the concept of competence, Kajander-Unkuri (2014) identified the following three approaches towards the concept: (a) knowledge regarding tasks and skills, (b) a generic focus on problem-solving and critical thinking and (c) a holistic approach that brings together knowledge, skills, attitudes and judgements.

What does this paper contribute to the wider global clinical community?

- The newly graduated registered nurses (NGRNs) reported high clinical competence for the components “Professional team collaboration” and “Ethical decision-making,” which also scored the lowest need for further training. The NGRNs reported low clinical competence in “Reporting all incidents regarding patient safety system” and “Knowledge of interactions of medication and side effects,” which were also seen as the areas with the highest need for further training.
- NGRNs not only need to participate in a customised introduction programme once employed, but in the challenging working environment of acute care settings, they should also have experienced nursing colleagues available for questioning, support and stability on a day-to-day basis.

2.2 | Clinical competence in nursing

Clinical competence is the ability to perform a task and achieve a desirable outcome under certain circumstances within a clinical context (Benner, 2001). Studies of NGRNs’ clinical competence in the past 6 years have focused on their self-assessment of competence (Lima et al., 2014; Theisen & Sandau, 2013). Clinical competence has also been investigated in association with variables such as ethical climate—a nurse’s ethical relationship with patients and peers (Numminen, Leino-Kilpi, Isoaho, & Meretoja, 2015), educators’ and managers’ assessments of NGRNs’ competence (Numminen et al., 2014), and occupational commitment, practice environment and NGRNs’ competence (Numminen et al., 2016).

2.3 | Research overview of measuring nurses’ competence

Competence in nursing practice is complex and therefore difficult to assess (Cowan, Wilson-Barnett, Norman, & Murrells, 2008), and there is no consensus regarding the definition of competence. In recent years, different instruments have been developed to assess competence in clinical settings (Yanhua & Watson, 2011). The Finnish Nurse Competence Scale (NCS) (Meretoja, Isoaho, & Leino-Kilpi, 2004), which has been primarily used in Europe but also in North America, Asia and Australia (Flinkman et al., 2017), measures
centre; lifelong learning and dynamic perspective of nursing at differ-

tic, lifelong learning and dynamic perspective of nursing at differ-

tent educational levels and is constructed so that the nurse–patient

knowledge because NGRNs' professional development, quality of care

and patient safety are all dependent on their clinical competence.

There is a lack of research into NGRNs' clinical competence in this

increasingly complex healthcare context (Kentischer, Kleinknecht-

& Szweda, 2017). Clinical competence assessment is of great impor-

tance because NGRNs' professional development, quality of care

and patient safety are all dependent on their clinical competence.

According to a systematic review by Walker, Costa, Foster, and
de Bruin (2017), NGRNs' nursing responsibilities are greater than

what their actual level of competence can cope with. Further, Shaw,

Abbott, and King (2018) found that NGRNs had difficulty managing

complex patient situations. From a novice NGRN's perspective, a pa-

tient's need for care is fragmented. An experienced nurse, however,
can interpret complex situations and patient needs based on the sit-

uation and context (Benner, 2001). Research shows that NGRNs can

handle routine tasks in their daily work, but their advanced clinical

skills remain deficient (Missen, McKenna, Beauchamp, & Larkins,

2016). In light of this, NGRNs might not be fully prepared for nursing

practice in this complex context (Gardiner & Sheen, 2016; Kavanagh

& Szweda, 2017). Clinical competence assessment is of great impor-
tance because NGRNs' professional development, quality of care

and patient safety are all dependent on their clinical competence.

There is a lack of research into NGRNs' clinical competence in this

increasingly complex healthcare context (Kentischer, Kleinknecht-

Dolf, Spirig, Frei, & Huber, 2018), and little is known about what

further training is needed to strengthen and support NGRNs in the
development of their clinical competence. Therefore, the aim of this

study was to assess the self-reported clinical competence and need

for further training of NGRNs working in Swedish acute care hospi-
tal settings.

3 | METHODS

3.1 | Research design

This study used a cross-sectional design. The study conforms to the
STROBE cross-sectional reporting guidelines (Von Elm et al., 2014).

3.2 | Sampling and settings

All NGRNs (n = 124) employed by a county council in 2016 (cohort
1, n = 52) and 2017 (cohort 2, n = 72) in central Sweden were invited
to participate in the study. In total, 85 NGRNs agreed to participate
and were included in the study, resulting in a response rate of 69%
(cohort 1, 86% and cohort 2, 55%). During the NGRNs' first year of
employment, they participated in a mandatory clinical development
programme. The programme consisted of the following three areas:
(a) the new profession, (b) clinical skills and (c) patient safety. It took
place over 12 separate days spread throughout the year. The NGRNs
worked with direct patient care and were employed either at the
central regional hospital or at one of the two district hospitals in the
area. They worked with different specialties, including medical, sur-
gical, gynaecological, paediatric, psychiatric and oncological care.

3.3 | Data collection

Prior to the data collection, which took place during September
2016 (cohort 1) and August 2017 (cohort 2), the first author (AW)
contacted the county council's department of human resources to
provide information about the study for the NGRNs. They were
informed of the study prior to graduating from their nursing pro-
gramme and were invited to participate on the first day of their cli-

cal development programme, when they had been employed by the
county council for about two months. The Professional Nurse Self-
Assessment Scale of clinical core competencies II (ProffNurse SAS II)
was answered by participating NGRNs on the first day of the clinical
development programme, and the questionnaire was sent by post to
any absent participants. Two reminders were later sent two weeks
apart.

3.3.1 | Professional Nurse Self-Assessment Scale of clinical core competencies II (ProffNurse SAS II)

The ProffNurse SAS II, which derives from ProffNurse SAS I, has 50
items and aims to measure nurses' clinical competence from a holis-
tic, lifelong learning and dynamic perspective of nursing at differ-

tent educational levels and is constructed so that the nurse–patient
relationship is central (Wangensteen et al., 2018). The theoretical
framework of the original ProffNurse SAS is based on NCS (Meretoja
et al., 2004) and the Nurse Clinical Competence Scale (NCCS)
(Finnbakk, Wangensteen, Skovdahl, & Fagerström, 2015). The NCS
scale was further developed from Benner's novice to expert com-
petency framework (Meretoja et al., 2004), and the Nurse Clinical
Competence Scale (NCCS) covers the central competence domains
in nursing (Hamric, Spross, & Hanson, 2009).

ProffNurse SAS I has been psychometrically tested by Finnbakk
et al. (2015), and explorative factor analyses and principal component
analysis suggest that the 51 items of ProffNurse SAS I can be sorted
into the following six components: Direct clinical practice, Professional
development, Ethical decision-making, Clinical leadership, Cooperation
and consultation, and Critical thinking (Table 1). In addition, the fol-
lowing six items are included: "I assess patients' health needs by tele-
phone," "I give health promotion advice and recommendations to
patients by telephone," "I give health promotion and illness preventive
recommendations in accordance with national guidelines to patients,""I have a supportive ongoing dialogue with patients about their needs
and wishes," "I focus on relatives' needs for support and guidance," and
"I report all incidents in accordance with the actual patient safety sys-
tem." In the version written by Wangensteen et al. (2018), the response
B-scale for the self-assessed need for further training was added and
the survey was renamed ProffNurse SAS II. ProffNurse SAS II contains 50 items with two response scales; the A-scale for self-assessed clinical competence and the B-scale for self-assessed need for further training. The items in both scales have 10 response alternatives ranging from 1 = poor to 10 = very good. In ProffNurse SAS II, 44 of the 50 items are included in the six components and the Cronbach's alphas of the six components are presented in Table 1.

### 3.3.2 Internal consistency

In Finnbakk et al. (2015), the A-scale Cronbach's alpha ranged from 0.77 to 0.94. In a study conducted by Wangensteen et al. (2018) including specialists and master's degree postgraduate nurses using ProffNurse SAS II, the A-scale showed good reliability (0.96). In the present study, Cronbach's alpha for the 50 items in the A-scale was 0.93 and for the B-scale was 0.96. In ProffNurse SAS II, the A-scale Cronbach's alpha ranged from 0.68 for the component "Clinical leadership" to 0.89 for the component "Direct clinical practice" and the B-scale Cronbach's alpha ranged from 0.79 to 0.92 for the six components (Table 1).

### 3.4 Ethical considerations

The study followed the ethical principals in accordance with the Declaration of Helsinki (Helsinki Declaration, 2013) and was given ethical approval by the Ethical Review Board (reg. no. 2011/071 and 2011/071/2). Written informed consent was obtained from each participant in connection with the clinical development programme. Study participants received both oral and written information about the aim of the study that their participation was voluntary and that they could end their participation at any time without explanation.

### 3.5 Data analysis

The data in the descriptive analyses are represented as per cent, range, mean and standard deviation. Cronbach's alpha (Cronbach, 1951) was calculated to assess the internal consistency of the scale. Student's t-test was used to assess the statistical significance between two sample means to compare age, sex and cohort, and Pearson's chi-square test was used to examine person-related conditions between participants (Field, 2013). The significance level was set at $p < .05$ (Pallant, 2013). Data were analysed using IBM SPSS version 24.0. In both the items "assessing the patients' needs for health care using the telephone, e-mail or computer" (item 46) and "promoting and prevention health using the telephone, e-mail or computer" (item 47), there was an internal dropout of 8% with missing answers in both the A-scale and B-scale.

### 4 RESULTS

Participating NGRNs (N = 85) had a mean age of 26.2 years (SD 5.3) with a range of 21–47 years. There were 77 women (90.6%) and 8 men (9.4%) included in the study. The NGRNs had been working in the field for 0–2 months. In cohort 1, the participants had a mean age of 25.5 years (SD 4.5) with a range of 21–39 years, and there were 42 women (92.9%) and 3 men (7.1%). In cohort 2, the participants had a mean age of 26.9 years (SD 6.0) with a range of 22–47 years, and there were 35 women (85.8%) and 5 men (14.2%). There were no significant differences regarding age, sex or work experience between the two cohorts.

### 4.1 Self-assessed clinical competence and need for further training

The NGRNs' mean score for the total group concerning clinical competence on the A-scale was 6.82 (SD 0.93), and the equivalent score for the B-scale (need for further training) was 6.60 (SD 1.51). Figure 1 presents mean scores for the six components in the A-scale and B-scale, for the total group of NGRNs. In the A-scale, the highest mean scores were found for the components "Clinical leadership" and "Cooperation and consultation," and the lowest mean scores were found for "Professional development" and "Direct clinical practice." In the B-scale, the highest mean scores were found for the components "Direct clinical practice"
4.1.1 | Highest and lowest self-assessments of clinical competence (A-scale)

Table 3 presents the NGRNs' mean scores for the ten highest and lowest mean scores on the item level in the A-scale. The NGRNs self-assessed their clinical competence highest on the following items: "consulting other professional experts when required" (item 37; mean 8.92, SD 1.82), "acting ethically in caring for the patients" (item 24; mean 8.51, SD 1.44), "co-operating actively with other health professionals when coordinating patients' nursing care and treatment" (item 38; mean 8.32, SD 1.67), "incongruous of when medical knowledge was insufficient when assessing patients' health conditions" (item 39; mean 8.29, SD 1.85) and "acting ethically towards colleagues" (item 28; mean 8.26, SD 1.62).

The NGRNs self-assessed their clinical competence lowest for "health-promoting and prevention" (item 46; mean 3.76, SD 2.41), "to assess the patients need for health care using the telephone, e-mail or computer" (item 45; mean 3.87, SD 2.52), "medications interaction and side effects" (item 15; mean 4.27, SD 1.94), "creating a learning environment for staff members" (item 16; mean 4.54, SD 2.52) and in "reporting all incidents in accordance to the patient safety system" (item 50; mean 4.59, SD 2.50).

4.1.2 | Highest and lowest self-assessments of need for more training (B-scale)

Table 4 shows the ten highest and lowest self-assessed scores on the item level. The NGRNs self-assessed their need for further training highest for "reporting all incidents according to the patient safety system" (item 50; mean 8.35, SD 2.02), "medication, interaction and the side effects of medication" (item 15; mean 8.15, SD 2.05), "differential diagnoses when assessing patients' health conditions" (item 7; mean 7.77, SD 2.03), "knowledge about the effect and treatment of medication" (item 11; mean 7.72, SD 2.34) and to "assess patients' health using the telephone, e-mail or other electronic devices" (item 45) (mean 7.6, SD 2.31).

The lowest mean scores in the B-scale (the least need for further training) were for the items "acting ethically towards colleagues" (item 28; mean 5.04, SD 2.74), "active responsibility for creating a good working environment" (item 29; mean 5.21, SD 2.57), "consulting other professional experts when required" (item 37; mean 5.25, SD 1.82), "acting ethically when caring for patients" (item 24; mean 5.32, SD 2.74), "taking independent responsibility for health assessments examinations" and "treatment of patients with uncomplicated medical conditions" (item 2; mean 5.58, SD 2.71).

5 | DISCUSSION

The aim of the study was to investigate how NGRNs assessed their clinical competence and their need for further training in Swedish acute care hospital settings. The NGRNs assessed their clinical competence to be highest in the items "consulting other professional experts," "co-operating with other professionals" and "acting ethically." The clinical competences rated lowest were "health promotion in terms of not seeing the patient, using the telephone, and other electronic devices" and "knowledge about interactions between various medications and medications side effects." The greatest need for further training was in regard to "reporting all incidents in accordance with a patient safety system" and "interaction between various medications and medication's side effects." The item with the lowest need for further training was "maintaining an ethical approach towards colleagues."
TABLE 2  Self-assessed clinical competence for the six components of the ProfNurse SAS II in relation to background factors of age (based on mean values of the total group), sex and cohort among NGRNs

<table>
<thead>
<tr>
<th>Components</th>
<th>Self-assessed clinical competence</th>
<th>Sex</th>
<th>Cohort</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>21–26.2 years**, n = 59</td>
<td>26.3–47 years**, n = 24</td>
<td></td>
</tr>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
<td>p-values</td>
</tr>
<tr>
<td>Direct clinical practice</td>
<td>6.80 (1.08)</td>
<td>6.64 (1.20)</td>
<td>.559</td>
</tr>
<tr>
<td>Professional development</td>
<td>5.77 (1.70)</td>
<td>5.53 (1.41)</td>
<td>.540</td>
</tr>
<tr>
<td>Ethical decision-making</td>
<td>7.48 (1.24)</td>
<td>7.42 (1.32)</td>
<td>.884</td>
</tr>
<tr>
<td>Clinical leadership</td>
<td>7.72 (1.44)</td>
<td>7.56 (1.49)</td>
<td>.644</td>
</tr>
<tr>
<td>Cooperation and consultation</td>
<td>7.63 (1.33)</td>
<td>7.61 (1.06)</td>
<td>.941</td>
</tr>
<tr>
<td>Critical thinking</td>
<td>6.50 (1.39)</td>
<td>6.43 (1.51)</td>
<td>.838</td>
</tr>
</tbody>
</table>

Note: Mean values (M), standard deviations (SD) and p-values (Student’s t test) are shown.

*Statistically significant p-values.

**Age distribution is based on the mean value of the total group.
was found to be in line with another study (Numminen et al., 2016) that found that collaboration and working with clinically competent nurses was associated with higher competence. Recent studies have also shown that support is essential for professional growth and clinical competence among NGRNs (Gardiner & Sheen, 2016; Pasila, 2018; Lima, Jordan, Kinney, Hamilton, & Newall, 2016). This might indicate that supportive colleagues play an important role in competence development in NGRNs. Gardiner and Sheen (2016) found that nursing colleagues who were not interested in sharing their knowledge and experience provided inadequate supervision and caused increased stress levels among NGRNs. Leaving complex patient situations unaddressed could lead to learning deficits among NGRNs, and this could result in poor patient care and negative patient outcomes. Research also shows that NGRNs often lack the time needed to utilise feedback from peers to improve their own competence (Phillips, Esterman, & Kenny, 2015). Lack of time for reflection and for discussion with experienced nurses might reduce the opportunities for NGRNs to reflect on nursing care for patients with complex nursing needs. Feedback that is often given in an ad hoc manner and primarily focuses on solving acute problems leads to only concrete, isolated and detailed nursing problems being solved. A consequence of this might be that NGRNs are “doing” nursing without being given the possibility to think critically, which is essential to deepening their understanding or further developing their clinical competence with patients’ unique needs in focus. Another issue, especially in times of nursing shortages (ICN, 2019), is that there might not always be experienced nurses available to consult with. In order for experienced nurses to choose to remain in their positions on acute care hospital wards, a comprehensive approach is required that includes strong hospital leadership and ward management and to actively work to find out what they need to stay, which may include aspects such as offering different career paths, higher pay and/or better working conditions. NGRNs also need to commit to the ward they start on

### TABLE 3 The NGRNs' highest and lowest self-assessed clinical competences on the A-scale

<table>
<thead>
<tr>
<th>Item</th>
<th>Content</th>
<th>M</th>
<th>SD</th>
<th>Item</th>
<th>Content</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I consult other professional experts when required</td>
<td>8.92</td>
<td>1.82</td>
<td>1</td>
<td>I give health promotion advice and recommendations to patients by telephone</td>
<td>3.76</td>
<td>2.41</td>
</tr>
<tr>
<td>2</td>
<td>I act ethically when caring for patients</td>
<td>8.51</td>
<td>1.44</td>
<td>2</td>
<td>I assess patients' health needs by telephone</td>
<td>3.87</td>
<td>2.52</td>
</tr>
<tr>
<td>3</td>
<td>I cooperate actively with other health professionals when coordinating patients' nursing, care and treatment</td>
<td>8.32</td>
<td>1.67</td>
<td>3</td>
<td>I have knowledge of the interactions of various types of medication and what side effects they may cause for the patients I am responsible for</td>
<td>4.27</td>
<td>1.94</td>
</tr>
<tr>
<td>4</td>
<td>I am cognisant of when my medical knowledge is insufficient when assessing patients' health conditions</td>
<td>8.29</td>
<td>1.85</td>
<td>4</td>
<td>I generate a creative learning environment for staff at my workplace</td>
<td>4.54</td>
<td>2.52</td>
</tr>
<tr>
<td>5</td>
<td>I maintain an ethical approach towards my colleagues</td>
<td>8.26</td>
<td>1.62</td>
<td>5</td>
<td>I report all incidents in accordance with the actual patient safety system</td>
<td>4.59</td>
<td>2.50</td>
</tr>
<tr>
<td>6</td>
<td>I take full responsibility for my own actions</td>
<td>8.19</td>
<td>2.00</td>
<td>6</td>
<td>I improve routines/systems that fail to meet the needs of patients at my workplace</td>
<td>4.71</td>
<td>2.43</td>
</tr>
<tr>
<td>7</td>
<td>I take patients' physical health needs (illness, pain, disabilities, etc.) into account when assessing and planning for the health and life situation of patients</td>
<td>8.07</td>
<td>1.79</td>
<td>7</td>
<td>I participate in quality development at my workplace</td>
<td>4.73</td>
<td>2.48</td>
</tr>
<tr>
<td>8</td>
<td>I put emphasis on patients' own wishes when assessing and planning for nursing care and medical treatment</td>
<td>7.88</td>
<td>1.81</td>
<td>8</td>
<td>I exclude differential diagnoses when assessing patients' health conditions</td>
<td>4.93</td>
<td>1.79</td>
</tr>
<tr>
<td>9</td>
<td>I take active responsibility for creating a good working environment</td>
<td>7.82</td>
<td>1.77</td>
<td>9</td>
<td>I have a vision of how nursing should be developed at my workplace</td>
<td>5.38</td>
<td>2.12</td>
</tr>
<tr>
<td>10</td>
<td>I have a supportive ongoing dialogue with patients about their needs and wishes</td>
<td>7.79</td>
<td>1.69</td>
<td>10</td>
<td>I have knowledge of the effects of medication and treatment for the patients I am responsible for</td>
<td>5.52</td>
<td>1.95</td>
</tr>
</tbody>
</table>

Note: Values ranging from 1 to 10, where 1 = poor and 10 = very good. Mean values (M) and standard deviations (SD) are shown.
and not "jump" from one ward to another. Further, nursing teams need to be stable and consist of both experienced nurses (with more than two years of working experience on the same ward) and NGRNs. If clinical competence among NGRNs is insufficient and not well supported, it can be difficult for them to judge what nursing actions are needed in complex and rapidly changing clinical situations, which in turn can put patient safety and quality of care at risk. In addition, feelings of having positive experiences of providing good quality of care have proven to be important for NGRNs' competence and their desire to continue in the nursing profession (Numminen et al., 2016).

The issue of clinical competence has also been raised with regard to patient safety and the overall competence of the healthcare team (National Board of Health & Welfare, 2015), and the overall clinical competence of the healthcare team can be insufficient if clinical competence in NGRNs is lacking. To support patient safety and competent practice, the ICN (2013) highlights that healthcare managers should not allow inexperienced NGRNs to practice beyond their level of competence.

### 5.2 Need for further training

Participating NGRNs rated their need for further training highest for items related to "reporting all incidents according to the patient safety system," "knowledge about medications, interactions and side effects," and "differential diagnoses when assessing patients' health conditions." These competences are required in complex nursing situations (Fagerström & Glasberg, 2011). Patients with complex nursing needs are defined by the Agency...
for Healthcare and Quality (AHRQ) as having two or more chronic conditions where health conditions can affect each other in a nursing situation (Agency for Healthcare and Quality (AHRQ, 2012). Complexity in nursing care also refers to the circumstances in a given situation and the different types of factors that can make the situation more difficult (Reed, 2013). The NGRNs self-assessed a high need for further training regarding “reporting all incidents in accordance with the patient safety system.” A recent study (Gallen, Kodate, & Casey, 2019), including RNs and midwives, showed that 42% of them were unaware that such safety systems existed. However, the results in the present study showed that NGRNs are conscious of their need to develop this clinical competence and their need for further training. Regarding their assessed need for further training for “medications’ effects, interactions and side effects,” dealing with patients’ medications is indeed a common intervention in the daily work of a nurse (Blank et al., 2011). It is concerning that research has shown that medication errors are frequent among nurses with less than five years of experience (Makary & Daniel, 2016; Treiber & Jones, 2018). It has also been reported that NGRNs experience the administration of medication as causing stress (Murray, Sundin, & Cope, 2019). Among NGRNs, medication errors are related to nursing care with heavy patient workloads and patients with complex medical diagnoses (Saintsing, Gibson, & Pennington, 2011). It is therefore timely to take this seriously to avoid the consequences of medication errors and to ensure that they do not develop further. Further training is important due to the connection between medication errors and lack of knowledge (Härkänen, Saano, & Vehviläinen-Julkunen, 2017). As indicated by a study including postgraduate nurses at master’s degree level and on specialist programmes, the clinical competence interaction, effects and side effects of various medication treatment are still assessed to be the area with the highest need for further training (Wangensteen et al., 2018). This issue also needs to be further addressed in nursing education programmes, when entering the nursing profession by way of clinical introductory programmes, as well as in daily working routines. Therefore, it is fundamental that hospital and ward management teams sanction time and resources for relevant introduction programmes based on NGRNs’ need for further training. The NGRNs included in this study did not have some of the specific topics they were interested in included in their introduction programme, for example the interaction, effects and side effects of various types of medication.

From the NGRNs’ point of view, the complexity of nursing situations is constantly increasing, and due to patient-centred care being a goal of nursing, NGRNs need to have time to meet and listen to their patients in order to be able to develop their competence further. It might be difficult to generate the best possible health outcomes with respect to nursing care in complex nursing situations when certain competences are not developed or if there are difficulties in knowing what competences are needed. Nursing actions in complex nursing situations should include professional judgement and experiences and not just nursing care plans or guidelines (Alexander & Kroposki, 2001). If NGRNs’ competence is low and their need for further training is high, they might not be aware of errors they have made in their nursing duties in complex nursing situations. It also seems that further complexity is added when nurses are alone with patients when preforming their duties and this both reduces quality of care and creates a potential risk to patient safety (Murray-Parahi, DiGiacomo, Jackson, & Davidson, 2016). Therefore, a safe and successful working environment would include experienced nurses that NGRNs can learn from and have the opportunity to ask questions, get feedback and accompany when treating patients. For the sustainable development and to support NGRNs’ clinical competence, multifaceted solutions are needed at different levels of the organisation at acute care hospitals. As it is not realistic for NGRNs to be fully competent in all competence areas, it is of great importance that experienced nurses stay on the wards where NGRNs are employed. To contribute towards a high standard of nursing care, it is important that NGRNs have a critical thinking approach and the ability to self-reflect; furthermore, it is of importance to have an experienced nurse available to answer questions and to use as a role model. In addition, NGRNs’ transition from student life to becoming an accountable nurse can be supported by continuously assessing their clinical competence by using instruments such as ProffNurse SAS II and by discussing his/her individual competence development by giving feedback and supporting individual competence development.

In this study, ProffNurse SAS II was used to assess self-reported clinical competence and the need for further training among NGRNs. ProffNurse SAS II is based on Benner’s (2001) theory regarding nurses’ clinical competence as well as core competencies for nurses, which departs from a holistic view of nursing. The dynamic perspective is that the instrument can be used for nurses of different educational levels as well as in relation to nurses’ lifelong learning. The results of this study can contribute to a basis for further research, where a longitudinal design could be used to track changes over time and identify when supportive activities are appropriate. In terms of known group validity, NGRNs’ scores on the ProffNurse SAS II can be compared with those of postgraduate master’s degree nurses. The NGRNs in this study self-assessed their clinical competence as being lower than postgraduate master’s degree nurses. The NGRNs in this study self-assessed their clinical competence as being lower than postgraduate master’s degree nurses in a previous study (Wangensteen et al., 2018), while the opposite was found regarding the need for further training where the NGRNs scored higher than postgraduate master’s degree nurses.

5.3 | Strengths and limitations

One strength of this study is the high response rate. In terms of known group validity, NGRNs’ scores on the ProffNurse SAS II can be compared with this of postgraduate master’s degree nurses. The NGRNs included in this study self-assessed their clinical competence to be lower than postgraduate master’s degree nurses in a previous study (Wangensteen et al., 2018), while the opposite was found regarding the need for further training where the NGRNs scored higher than the postgraduate master’s degree nurses. No extensive
psychometric analysis has yet been carried out due to ProffNurse SAS II being a relatively newly developed instrument. However, when components comparable to ProffNurse SAS I are examined, the results in this study look promising and the instrument shows good reliability and internal consistency.

The results of this study can be used as a basis for further research—a longitudinal design could be used to track changes in competence development over time and identify when supportive activities are appropriate. With respect to Cronbach's alpha, an acceptable score should be above 0.7 (Tavakol & Dennick, 2011). In this study, Cronbach's alpha for the component "Clinical leadership" was only 0.68, possibly due to the component only having four items.

The subjectivity of self-assessment should also be considered. Self-assessment, however, could start a reflective process that might lead to a development of the NGRNs' clinical competence. Thus, there is a lack of research measuring NGRNs' clinical competence in the context of acute care hospitals in different settings.

6 | CONCLUSION

Participating NGRNs assessed their overall clinical competence as being highest in the areas of professional team collaboration and ethical conduct, and these areas were scored lowest for the need for further training. The NGRNs assessed their overall clinical competence as being lowest in the areas of patient safety systems and knowledge of medication, and these areas scored highest for the need for further training. Identifying NGRNs' strengths and weaknesses in clinical competence is important when designing introductory programmes in hospital settings and nursing education programmes. It is concerning that NGRNs assessed their clinical competence to be low in key areas such as patient safety systems and knowledge of medication, where they found their need for further training to be the highest. This also shows the importance of experienced nurses being available to NGRNs, so they can gain clinical competence and learn from them, benefiting both the NGRNs themselves and patient safety. Findings from this study illustrate the usefulness of applying an instrument to identify the strengths and weaknesses in NGRNs' clinical competence and need for further training.

7 | RELEVANCE TO CLINICAL PRACTICE

The findings in this study have implications for policy decisions when designing introduction programmes for NGRNs and making sure nursing staffing is adequate in acute care hospital settings. Participating NGRNs in this study had only been practicing nursing for a few months and therefore needed further support and supervision in order for them to develop their clinical competence, especially in relation to patient safety systems and knowledge of medications. NGRNs need to practice nursing with the patients’ needs as their central focus within this complex, uncertain and unpredictable clinical context in order to develop their clinical competence. Supervision and time for reflection with both experienced nurses and in groups and the simulation of nursing care for patients in complex nursing situations are important support activities for NGRNs. With regard to patient safety and quality of care, it would be wise to consider the total clinical competence of nursing teams when staffing each work shift in acute care hospital settings. Taking full responsibility requires hospital management teams making it possible for NGRNs to consult with more experienced nurses. It is the responsibility of the healthcare management teams to ensure that staffing is adequate, especially in today's often stressful clinical healthcare settings, for example during periods when many staff members are on annual leave. The results of this study provide new knowledge concerning the importance of NGRNs having access to experienced colleagues in order to learn from them and to ensure good levels of patient safety in complex nursing situations.

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CONFLICT OF INTEREST

The authors declare that they have no competing interests.

AUTHORS’ CONTRIBUTIONS

Anna Willman involved in study design and data collection. Anna Willman, Kaisa Bjuersäter and Jan Nilsson involved in data analyses, drafting of manuscript and critical revisions for important intellectual content.

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REFERENCES


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Additional supporting information may be found online in the Supporting Information section.