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Postgraduate nurses' self-assessment of clinical competence and need for further training. A European cross-sectional survey

Sigrid Wangensteen⁎, Elisabeth Finnbakk, Annsofi Adolfsson, Gudrun Kristjansdottir, Petrie Roodbol, Helen Ward, Lisbeth Fagerström

ABSTRACT

Background: Nursing practice requires application of knowledge, skills and values in various combinations and has undergone substantial changes over the last decades. An increased focus on inter-professional collaboration and possible new and more independent roles for nurses are described in the Scandinavian countries (Kunnskapsdepartementet, 2012) as well as internationally (Affara, 2009; Delamare and Lafortune, 2010). Nurses have to meet expectations from health care authorities, managers, inter-professional colleagues, from patients as well as from their own profession. It is reported that for example top level managers and politicians have worries about

1. Introduction

Nursing practice requires application of knowledge, skills and values in various combinations (Cowan et al., 2005) and has undergone substantial changes over the last decades. An increased focus on inter-professional collaboration and possible new and more independent roles for nurses are described in the Scandinavian countries (Kunnskapsdepartementet, 2012) as well as internationally (Affara, 2009; Delamare and Lafortune, 2010). Nurses have to meet expectations from health care authorities, managers, inter-professional colleagues, from patients as well as from their own profession. It is reported that for example top level managers and politicians have worries about...
critical care nursing and anesthetics nursing are increasingly provided. Development has been seen in the Nordic countries where for example the graduate education at master’s level and that it may be beneficial to nurses to undertake post-graduate education at master's level and that it may be beneficial to nurses. Significantly higher critical thinking scores have been reported among graduates from a master's program compared to nurses commencing the same degree program (Drennan, 2010), and critical thinking has been found to be a significant predictor to nurses' perception of competence (Wangensteen et al., 2012). Applying critical thinking, enhanced professional confidence and a more equal position within the professional team are described to increase during post-graduate education at master's level (Graue et al., 2015). Working as an APN is described to develop a more holistic view of patients, and a more independent and responsible manner of working and in admitting to own limits (Wisur-Hokkanen et al., 2015).

Several studies focusing on the assessment of RNs' competence have been published (Cowan et al., 2008; Istimona et al., 2011; Nilsson et al., 2014; Wangensteen et al., 2012; Meretoja and Leino-Kilpi, 2003) and various instruments have been developed in different countries and contexts to measure professional competences. Four such instruments emerged in recent years in European contexts, the Finnish Nurse Competence Scale (NCS) (Meretoja et al., 2004), the European Healthcare Training and Accreditation Network (ETHAN) Questionnaire Tool (EQT) (Cowan et al., 2008), the Nurses Clinical Competence Scale (NCCS) (Nieminen and Fagerström, 2006) and the Swedish Nurse Professional Competence Scale (NPC) (Nilsson et al., 2014). The NCS is the most widely used and has been used in different countries around the world, e.g. Australia (Lima et al., 2014), Iran (Bahreiini et al., 2011), Switzerland (Müller, 2013), Finland (Meretoja et al., 2004) and Norway (Wangensteen et al., 2012). The NCS was however designed to measure competence at a basic level (Meretoja et al., 2004). Measuring competence at an advanced level nursing requires a more advanced competence measure. In search for such an instrument the first version of the Professional Nurse Self-Assessment Scale of clinical core competencies (PROFFNurseSAS I) was developed; a result of validating a questionnaire based on the NCCS (Nieminen and Fagerström, 2006) with a sample consisting of RN's working in long term and home care contexts (Finnbakk et al., 2015). The NCCS, originally developed in Swedish, was translated into Norwegian according to the steps recommended by Wild et al. (2005). For the purpose of measuring competence among Norwegian RN's working in long term and home care contexts the original 67 items version was thoroughly discussed, resulting in seven items to be added, i.e. in total 74 items. A validation of this questionnaire by means of Exploratory Factor Analysis resulted in 51 items in six components, named Direct Clinical Practice (19 items), Professional development (5 items), Ethical decision making (11 items), Clinical leadership (6 items), Cooperation and consultation (6 items) and Critical thinking (4 items). The questionnaire was named the PROFFNurseSAS I. Cronbach's alpha values varied from 0.772 (lowest; Critical thinking) to 0.940 (highest; Direct clinical practice) (Finnbakk et al., 2015).

Thus, the PROFFNurseSAS I has two preceding scales; the Nurse Competence Scale (Meretoja et al., 2004) and the Nurse Clinical Competence Scale (NCCS) (Nieminen and Fagerström, 2006). The NCCS aimed at capturing a wider span of clinical aspects of advanced nurse competence, including the core skills of APN. The theoretical framework of the NCCS and the PROFFNurseSAS I is grounded upon the Nordic APN model, which again is founded on the ICN (Schober and Affara, 2006; Affara, 2009) and Hamric et al., 2009 descriptions of central competence domains of advanced nursing practice. Furthermore, the epistemological fundament is grounded on a life-long perspective of learning and covered by the three dimensions of knowledge described by Aristotelles; epistémē, understood as nurses' scientific knowledge, technē, understood as the knowledge in doing, and phronesis, understood as the practical wisdom, and most important that advanced nurse practice is based on the synthesis of these dimensions of knowledge (Fagerström, 2011; Nieminen et al., 2011). The present study further develops this scale for the use in advanced nursing competence evaluation, resulting in the PROFFNurseSAS II.

The aims of the present study were to describe nurses' self-assessment of clinical competence and their need for further training among nurses in Post-graduate specialist nursing- and APN programs by means of the PROFFNurseSAS II. Furthermore, the aim was to explore whether there were differences with respect to self-assessment of own competence and in perceived need for further training between nurses in specialist programs and nurses in master's programs in some European countries.

2. Method

A cross-sectional survey design was chosen.

2.1. Sample

A convenience sample consisting of nurses enrolled in various postgraduate programs in Iceland, the Netherlands, Sweden, Norway and United Kingdom was determined. 217 post-graduate students from all included study programs were invited to participate and 97 responded (i.e. response rate 45%). The respondents in master's programs were from the Netherlands (n = 39), United Kingdom (n = 15) and Iceland (n = 6), while the respondents in specialist programs were from Norway (n = 24) and Sweden (n = 13). Sixty respondents were in master's programs while the remaining were in various post-graduate nursing specialist programs. Out of the 37 nurses in specialist programs the majority (n = 24) were in palliative nursing, nurse anesthesia, intensive care nursing or operating theatre nursing programs.

2.2. Questionnaire

When developing the present study all the items in the PROFFNurseSAS I were thoroughly discussed and revised to reflect the competencies required in advanced nursing practice. Six of the items, which were excluded in a previous study (Finnbakk et al., 2015) were added to the questionnaire (in total 57 items at that stage). Furthermore, after discussions in the research group, a few items were revised, and 7 items were removed because the items' content were covered in...
other items. The PROFFNurseSAS II – which was used in the present study - contains 50 items and asks for two responses; A-scale for self-assessment of competence and B-scale for perceived need for further training. Both scales range from 1 to 10 where 1 indicates a low level and 10 a high level.

The author group, representing English, Swedish and Norwegian researchers, translated the PROFFNurseSAS II into English for the purpose of the present study. Initially the plan was to do the data collection electronically. A pilot study where some nurses in APN programs from some of the countries were invited to respond electronically was carried out in December 2013 and January 2014 revealed a very low response rate. Reasons for the low response rate may have been lack of access to electronic device and language challenges (English).

After further deliberations in the research group, it was decided to employ a printed hand out of the PROFFNurse SAS II in the data collection of the present study. The English version was used for English speaking respondents, a Swedish for Swedish nurses and a Norwegian version for Norwegian nurses, i.e. three versions. All translations were carried out with persons having the target language as their mother tongue and followed by discussions in the research group where several languages are represented. No revisions of the questionnaire, other than use of different languages, were carried out.

2.3. Data Collection

Study program managers for the included study programs at each university or university college were responsible for the handing out and returning the questionnaires. The data were collected during spring and early autumn in 2014.

2.4. Data Analyses

The IBM SPSS Statistics 21 was used for data analysis. An overview of the data showed that 54% (n = 52) of the respondents had responded to all items in the questionnaire. The percentage of respondents responding to all items was somewhat higher (66%) for self-assessment of competence (A-scale) than for the need for further training (56%) (B-scale). Respondents with up to 9 (18%) missing items were included in the study. For these respondents the case mean substitution technique was used, as this method for imputation is reported to be applicable for self-reported measures (Fox-Wasylyshyn and El-Masri, 2005). As a result of the aforementioned exclusion of respondents with high level of missing items 92 respondents were included when calculating total score for self-assessment of competence and 87 for total score for need for further training.

The total score for self-assessment of competence (A-scale) and need for further training (B-scale) were both normally distributed (p = 0.061 for A scale and p = 0.279 for B scale; Kolmogorov Smirnov test). These values gave reason for parametric tests for analyses.

For regression analyses, the forward method was used. Dependent variables, hereafter named outcome variables (Field, 2013), were total score for self-assessment of competence (A-scale) and total score for need for further training (B-scale). Independent variables, hereafter named predictor variables (Field, 2013), were age, experience as a nurse (in years), master’s program vs specialist program, total A-scale (when total B-scale was output variable) and total B-scale (when total A-scale was output variable).

The reliability of the ProffNurse SAS II was tested by means of the Cronbach’s alpha test resulting in a value at 0.963 for the A scale.

2.5. Ethical Considerations

The study was carried out in accordance with the Declaration of Helsinki (WHO, World Health Organization, 2008) and the Ethical Guidelines for Nursing Research in the Nordic Countries (Northern Nurses’ Federation, 2003). Access was obtained by the study program managers. The respondents were informed orally and in writing about the study and the right to withdraw from the study. Returning the questionnaires was regarded as consent to participate. The study was approved by the Norwegian Social Science Data Services (ref no 35670).

3. Results

The respondents’ mean age was 39 years (range 27–59) and their mean experience as a nurse was 12 years (range 1–35). With respect to age, there was no difference between nurses in specialist programs and those in master’s programs. The nurses in master’s programs had 14 years working experience as nurses while the corresponding value for those in specialist programs was 10.

The nurses rated their competence highest in taking full responsibility, cooperation with other health professionals and in acting ethically (Table 1). The respondents rated their competence lowest for items related to health promotion, managing health care without seeing the patient physically (i.e. using telephone, e-mail or other electronic devices), medications and quality development (not shown in table).

With respect to the need for further training, the highest mean scores (i.e. greatest need for training) were found for competence on medications, interaction and side effects and differential diagnoses (Table 2). The lowest mean scores for need for further training (i.e. competence they needed the least) were found in items related to cooperation and ethical responsibility.

Splitting the sample in a) nurses in post-graduate specialist programs and b) nurses in master’s programs demonstrated that nurses in master’s programs for all items rated their competence higher than nurses in the specialist programs. Furthermore, higher SD values among nurses in specialist programs indicated a wider range of self-assessed competence in this group. Looking further into differences between these two groups’ independent samples t-test demonstrated statistically significant differences in self-assessed competence (A-scale) between nurses in specialist programs and master’s programs for 17 items (Table 3). The content of the items where significant differences were found covered various competence elements, such as quality development, documentation, and health promotion advice.

With respect to need for more training (B-scale) the nurses in specialist programs rated their need for more training for all items higher than nurses in master’s programs. Studying these differences further by means of independent samples t-test showed statistically significant
Table 2
Need for more training (B-scale) – top 10 items (i.e. competence needed most).

<table>
<thead>
<tr>
<th>Item</th>
<th>Content</th>
<th>Group</th>
<th>Mean (SD)</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>15 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>Specialist 7.67 (1.42)</td>
<td>−2.006</td>
<td>0.048</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>11 I have knowledge of the effects of medication and treatment for the patients I am responsible for</td>
<td>Master 8.22 (1.18)</td>
<td>−2.379</td>
<td>0.003</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>7 I exclude differential diagnoses when assessing patients' health conditions</td>
<td>Specialist 6.41 (2.09)</td>
<td>−1.994</td>
<td>0.049</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>1 I am independently responsible for health assessment (systematic physical examination), examinations and treatment of patients with complicated medical conditions</td>
<td>Master 7.14 (1.48)</td>
<td>−2.168</td>
<td>0.034</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>6 I evaluate and modify patients' medical treatment</td>
<td>Specialist 6.46 (2.61)</td>
<td>−3.547</td>
<td>0.001</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>8 I interpret, analyse and reach alternative conclusions about patients' health conditions after a detailed mapping of health history and health assessment (physical examination)</td>
<td>Master 7.61 (1.78)</td>
<td>−3.567</td>
<td>&lt; 0.001</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>16 I generate a creative learning environment for staff at my workplace</td>
<td>Specialist 6.54 (2.48)</td>
<td>−2.496</td>
<td>0.015</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>17 I participate in quality development at my workplace</td>
<td>Master 7.91 (1.32)</td>
<td>−3.574</td>
<td>&lt; 0.001</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>9 I apply both subjective and objective methods when examining, treating and caring for patients</td>
<td>Specialist 6.40 (2.25)</td>
<td>−2.045</td>
<td>0.045</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>12 I identify changes in patients' health and medical conditions</td>
<td>Master 7.40 (1.55)</td>
<td>−2.377</td>
<td>0.001</td>
<td></td>
</tr>
</tbody>
</table>

Items in bold – significant differences between nurses in specialist programs (highest scores) and nurses in master's programs (lowest scores).

⁎ p < 0.05.
⁎⁎ p < 0.01.

The differences between scores for nurses in specialist programs and master's programs for 47 out of the 50 items (not shown in table). The three items where no significant differences were found neither for the A-scale nor for the B-scale contains statements about responsibility for health assessment (systematic physical examination), examinations and treatment of patients with a) uncomplicated and b) complicated medical conditions, and c) exclusion of differential diagnoses when assessing patients' health conditions.

Studying the respondents' total score for self-assessment of competence (A-scale) revealed a mean score at 7.85 (SD 0.998) and the corresponding value for need for further training (B-scale) was 4.60 (SD 1.983). There was a significant negative correlation between responses on A-scale and B-scale (r = −0.455). Consequently, the r² value was 0.2070 indicating that 21% of the variance in the respondents' scores was explained by scores on the A- and B-scales respectively.

For the total competence score a significant difference between the respondents in master's programs and post-graduate specialist programs was found in that Master students rated their competence higher (8.08; SD 0.747) than those in specialist programs (7.50; SD 1.215) (p = 0.013). With respect to the need for further training (total score) the students in specialist programs rated their need for further training significantly higher (5.72; SD 1.864) than the students in master's programs (3.84; SD 1.691) (p < 0.001).

Multiple linear regression analyses (Table 4) revealed that the need

Table 3
Self-assessment of competence – significant differences between nurses in Specialist vs nurses in Master's programs – item level. Independent sample t-test.

<table>
<thead>
<tr>
<th>Item</th>
<th>Content</th>
<th>Group</th>
<th>Mean (SD)</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>4 I identify patients' health problems</td>
<td>Specialist 6.73 (2.38)</td>
<td>−2.845</td>
<td>0.006</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>16 I generate a creative learning environment for staff at my workplace</td>
<td>Master 7.94 (1.39)</td>
<td>−2.518</td>
<td>0.001</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>17 I participate in quality development at my workplace</td>
<td>Specialist 6.79 (1.06)</td>
<td>−2.496</td>
<td>0.015</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>18 I take responsibility for competence development at my workplace</td>
<td>Master 9.09 (0.86)</td>
<td>−3.574</td>
<td>&lt; 0.001</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>19 I improve routines/systems that fail to meet the needs of patients at my workplace</td>
<td>Specialist 8.29 (1.31)</td>
<td>−3.547</td>
<td>&lt; 0.001</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>24 I act ethically when caring for patients</td>
<td>Master 9.17 (0.06)</td>
<td>−3.567</td>
<td>&lt; 0.001</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>26 I take patients' social health needs (leisure activities, friends, financial situation, etc.) into account when assessing and planning for the health and life situation of patients</td>
<td>Specialist 8.79 (1.06)</td>
<td>−4.625</td>
<td>&lt; 0.0001</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>30 I put emphasis on patients' own wishes when assessing and planning for nursing care and medical treatment</td>
<td>Master 7.82 (1.15)</td>
<td>−3.498</td>
<td>&lt; 0.001</td>
<td></td>
</tr>
<tr>
<td>34</td>
<td>34 I understand the consequences my decisions may have for patients</td>
<td>Specialist 5.35 (2.64)</td>
<td>−3.323</td>
<td>&lt; 0.002</td>
<td></td>
</tr>
<tr>
<td>36</td>
<td>36 I cooperate well with the physician</td>
<td>Master 7.02 (2.07)</td>
<td>−4.227</td>
<td>&lt; 0.0001</td>
<td></td>
</tr>
<tr>
<td>40</td>
<td>40 I document the steps taken in assessing patients' needs for nursing, care and treatment</td>
<td>Master 7.36 (2.30)</td>
<td>−3.498</td>
<td>&lt; 0.001</td>
<td></td>
</tr>
<tr>
<td>44</td>
<td>44 I have a vision of how nursing should be developed at my workplace</td>
<td>Specialist 6.73 (2.16)</td>
<td>−4.227</td>
<td>&lt; 0.0001</td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>45 I assess patients' health needs by telephone, e-mail or other electronic devices</td>
<td>Master 8.35 (1.13)</td>
<td>−3.498</td>
<td>&lt; 0.001</td>
<td></td>
</tr>
<tr>
<td>46</td>
<td>46 I give health promotion advice and recommendations to patients by telephone, e-mail or other electronic devices</td>
<td>Specialist 7.26 (2.05)</td>
<td>−2.168</td>
<td>0.034</td>
<td></td>
</tr>
<tr>
<td>49</td>
<td>49 I focus on relatives' need for support and guidance</td>
<td>Master 8.07 (1.37)</td>
<td>−3.287</td>
<td>0.002</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>50 I report all incidents in accordance with the actual patient safety system</td>
<td>Specialist 7.64 (1.77)</td>
<td>−3.287</td>
<td>0.002</td>
<td></td>
</tr>
</tbody>
</table>

⁎ Specialist program and Master's program.
Significant predictors for self-assessment of competence (A-scale) and for need for more training (B-scale) – the PROFFNurse SAS. Multiple linear regression analysis, forward method*.

<table>
<thead>
<tr>
<th>Outcome variables</th>
<th>Sign. predictor variables</th>
<th>Adjusted r²</th>
<th>Standardized B value</th>
<th>t-Value</th>
<th>p-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total A-scale</td>
<td>Total B-scale</td>
<td>0.254</td>
<td>0.219</td>
<td>-0.479</td>
<td>4.867</td>
</tr>
<tr>
<td></td>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total A-scale</td>
<td></td>
<td></td>
<td>-0.380</td>
<td>2.222</td>
</tr>
<tr>
<td>Total B-scale</td>
<td>Total A-scale</td>
<td>0.295</td>
<td>0.311</td>
<td>-0.311</td>
<td>3.097</td>
</tr>
<tr>
<td></td>
<td>Specialist program</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Predictor variables entered: Age, Experience as a nurse (in years), Master's program vs Specialist program, Total A-scale (when B-scale was outcome variable), Total B-scale (when A-scale was outcome variable).

for further training and participants’ age were significant predictors of self-assessment of competence, explaining together 25% of the variance in the participants’ self-assessment of competence. Multiple linear regression analyses with the need for further training (B-scale) as outcome variable resulted in two significant predictors – the participants’ self-assessment of own total competence (A scale) and whether the participants were in Master’s or Post-graduate specialist programs – explaining 33% of the variance.

4. Discussion

The aim of the study was two-fold – firstly to describe nurses’ self-assessment of clinical competence and secondly their need for further training. At item level the nurses rated their competence from 6.36 (lowest: Giving health promotion advice and recommendations by phone, e-mail or other electronic devices) to 9.21 (highest: Taking full responsibility for own actions). Although the lowest as well as the highest score are in the upper part of the scale it is worth noticing which part of the competence are represented by the highest and the lowest scores.

The items where the respondents rated their competence highest contain statements of taking full responsibility, consulting other professional experts when required, cooperating with other health professionals, acting ethically, and taking responsibility for own professional development. These are all elements of phronesis (Nieminen et al., 2011) and key competence elements expected of nurses in their roles as professionals (Affara, 2009; Delamaire and Lafortune, 2010).

It is worth noticing that also items where the respondents rated their competence lowest - giving health promotion advice, knowledge of interaction of various types of medications, identification of differential diagnoses and items related to quality development - all are elements of epistemê, technê and phronesis (Nieminen et al., 2011). These are important elements of required competence for showing initiative in serving and taking care of patients with complex needs (Fagerström, 2011), and might account for parts of the worries reported among top level managers and politicians (Finnbakk et al., 2012). Our findings may indicate that the respondents failed in syntheses of the three dimensions of knowledge on which advanced nursing practice is based. Providing information on medications has been reported to be more important in community health care than in hospital care (Dilles et al., 2010). Furthermore Bing-Jonsson et al. (2016) concluded that nursing staff do not have sufficient competence in observation and systematic assessment of patients. Although the sample in the present study are RN’s in postgraduate specialist and master’s programs, our results similar shortcomings in their preparation as above. There is reason to ask whether these important competence areas to a sufficient degree have been considered when planning and carrying out advanced nursing programs.

On the other hand – the items where subjects rated their competence at the lowest were also among the items where their need for further training was most needed. This may indicate that even though their competence in these areas is low, they are conscious about their weaknesses. The value of self-assessment has been questioned (Polit and Beck, 2012). The correspondence between the respondents’ scores on the A scale (self-assessment of competence) and the scores on the B-scale (perceived need for further training) indicates that their self-assessment of competence might be reliable. Nurses in specialist programs and master’s programs report the need for further training, and employers are recommended to consider these aspects when developing education programs.

Discussions on advanced practice nursing competence are ongoing in Europe, and the need for improving standards for education are stated (Dury et al., 2014). Key concepts for evaluating advanced practice nursing roles are delineated (Bryant-Lukosius et al., 2016). The present study gives an insight into of how nurses in postgraduate specialist and master’s programs from some European countries assess their competence when measured with the same questionnaire, the PROFFNurse SAS II. The findings reveal a need for further studies on this subject.

The second part of this study was to explore if there were differences with respect to self-assessment of competence and need for further training between nurses in specialist- and nurses in master’s programs in some countries in Europe. The question whether master’s prepared nurses make a difference for patient care has been raised (Fagerström and Glasberg, 2011; Watkins, 2011; Hole et al., 2016). In this study, significant differences with respect to self-assessment of clinical competence were found in that students on master’s programs reported higher scores than students on specialist programs. These findings indicate support for findings reported by Watkins (2011) that education for a master’s degree might give more success in improving competence than traditional specialist programs. A recent study concluded that improved nurse competence at master’s level might lead to improved patient outcomes (Clark et al., 2015). Furthermore, master’s prepared nurses are reported to provide better expert nursing (Clark et al., 2015) and to be more likely to be change agents to improve clinical care (Hole et al., 2016). The ability to be change agents might be imperative in the years to come in order to meet the need for reorganization of work tasks among health care professionals.

4.1. Strengths and Limitations

The study was cross-sectional survey with a convenience sample. Although the number of respondents were < 100, they represented different countries and a variety of educational programs.

The correspondence between the scores on the A-scale (self-assessment of competence) and B-scale (need for more training) indicates an acceptable validity for the PROFFNurse SAS II. The Cronbach’s alpha value (0.963) indicate that there might be redundant items in the instrument (Tavakol and Dennick, 2011). We recommend testing the PROFFNurse SAS II with a larger sample, and factor analysis as contribution to further development of the instrument.

The results should be interpreted with some caution. The fact that the students in specialist programs were from Norway and Sweden indicate that the differences between nurses in specialist- and master’s programs may be due to differences in educational programs at bachelor as well as specialist level in the Scandinavian countries and the other participating European countries.

5. Conclusion

Even though the nurses rated their competence high for important competence aspects such as taking responsibility and cooperation with other health professionals, it is worrying that they rated their competence lowest for items about health promotion advice. Knowledge of effects and interaction of various types of medications were areas where
they most needed training. This study gives insights in areas where nurses report need for further training, and contributes to information relevant for those developing introduction programs as well as those developing study programs.

The nurses in master’s programs rated their competence significantly higher than did the nurses in specialist programs. However, further studies are needed to conclude if and how master’s education improve patient outcome.

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Conflict of Interest

None.

References


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