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

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ABSTRACT

Background: Nursing practice requires application of knowledge, skills and values in various combinations and has undergone substantial changes the last decades. An increased focus on inter-professional collaboration and possible new and more independent roles for nurses are described. A variety of programs have been developed in order to educate registered nurses (RN) to meet the changes and demands in health and nursing care throughout the world.
Aim: The aims were to 1) describe nurses' self-assessment of clinical competence and need for further training, and 2) explore possible differences between nurses in specialist vs master's programs.
Methods: A cross-sectional survey design was applied. 97 nurses in postgraduate programs from five countries responded (response rate 45%). A revised version of the Professional Nurse Self-Assessment Scale of clinical core competencies (PROFFNurseSASII) was used for data collection. Independent student *t*-test and regression analyses were carried out.
Results: The respondents rated their competence highest in taking full responsibility, cooperation with other health professionals and in acting ethically. Items where they considered themselves needing further training most were competence on medications, interaction and side effects and differential diagnoses. For all items, nurses in master's programs rated their competence higher than nurses in the specialist programs. Nurses in specialist programs rated their need for more training for all items higher than nurses in master's degree programs, and for 47 out of the 50 items these differences were statistically significant.
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 their need for further training was highest for effects and interaction of various types of medications. Further studies are needed to conclude if and how master's education improves patient outcome.

1. Introduction

Nursing practice requires application of knowledge, skills and values in various combinations (Cowan et al., 2005) and has undergone substantial changes 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 (Kunnskapsdepartmentet, 2012) as well as internationally (Affara, 2009; Delamaire 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

future care for older people with complex and acute illness as they will be in need of advanced competence related not only to nursing care but also to medical treatment (Finnbakk et al., 2012).

With respect to post-graduate education, varied programs are developed in order to educate registered nurses (RN) to meet the changes and demands in health and nursing care throughout the world. The titles and affiliations of the nurses graduated from these programs are different, e.g. Clinical Nurse Specialist (CNS), Advanced Practice Nurse (APN), Nurse Practitioner (NP), Nurse Consultant and Specialist Nurse, although the educational programs they derive from all aim at graduating nurses who are competent in meeting patients' and their relatives' needs for safety and high quality care in ever more demanding health care systems. Specialization in nursing is different from one country to another, both with respect to type of specialization and length of post-graduate program. Development of common standards for specialist nursing is recommended (Ranchal et al., 2015). Over the last two decades the APN role has also been introduced in European countries, such as the Netherlands and Great Britain, and more recently it is emerging in the Nordic Countries with an emphasis on clinical competence (Fagerström and Glasberg, 2011; Altersved et al., 2011; Wisur-Hokkanen et al., 2015).

Internationally the number of RN's holding master's degrees has increased dramatically since 2002 (Buerhaus et al., 2014). Similar development has been seen in the Nordic countries where for example the number of health professionals graduating with a master's degree has increased (Støren et al., 2014). Specialist programs formerly known as critical care nursing and anesthetics nursing are increasingly provided through curriculums leading to a master's degree. Cotterill-Walker (2012) concludes that it is profitable for nurses to undertake post-graduate education at master's level and that it may be beneficial to patients. 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; Istomina 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 counties around the world, e.g. Australia (Lima et al., 2014), Iran (Bahreini 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 Aristoteles; epistêmê, understood as nurses' scientific knowledge, technê, 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 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