



Measuring patient safety knowledge and competences as perceived by nursing students: An Italian validation study



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ABSTRACT

The study sought to validate the Italian version of the Health Professional Education in Patient Safety Survey (H-PEPSS), an instrument used to assess the perceptions of health professionals regarding patient safety competence. The H-PEPSS was administered to a sample of 574 bachelor degree nursing students in two north-eastern Italian universities. Its factor structure, validity and reliability were examined using explorative factor analysis. The internal consistency of the Italian version of H-PEPSS (H-PEPSS_{Ita}) measured with Cronbach's alpha (α) was higher for both classroom (.938) and clinical training (.942) dimensions. The six factors that emerged from the analysis were composed of three to five items loading $\geq .55$ and explaining 69.344% of the classroom total variance and 70.425% of the clinical training total variance of the H-PEPSS_{Ita}. The H-PEPSS_{Ita} is a valid tool capable of evaluating the self-perception of nursing students regarding patient safety knowledge and competence. Therefore, the instrument could be adopted in educational settings as a periodic nursing student report. This may help students reflect on PS related-issues, and evaluate gaps in knowledge and competences; furthermore, data emerging from periodic self-reports may offer the opportunity to tailor educational strategies to fill the gaps in PS knowledge and competences that emerge.

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Introduction

The need to ensure safety in the health sector is driving the development of policies aimed at improving the clinical practice as well as health care professionals' education on a global scale (Sherwood, 2011; World Health Organization, 2012). According to these strategies, risk management (RM) and patient safety (PS) issues have attracted interest world-wide (World Health Organization, 2010; World Health Organization, 2011). Although PS is both a concern and a responsibility of all health care professionals, Registered Nurses (RNs) are largely recognized as having a key role (Butterworth et al., 2011; Vaismoiradi et al., 2012) given their constant presence at the bedside which enables them to recognize conditions exposing patients to risk at an early stage.

The knowledge and expertise of RN's is considered a milestone among the factors affecting PS. Therefore both academic and continuing education is needed (Abbott et al., 2012; Cooper, 2013;

Ginsburg et al., 2012) as recommended also by the WHO, which since 2001 has proposed a European strategy aimed at harmonizing nursing and midwife educational programs (WHO, 2001) a statement that was reinforced in 2009 (WHO, 2009). Furthermore, some European countries such as the UK (Steven et al., 2014) and Finland (MSAH, 2009) have established programs aiming at improving PS content in undergraduate nursing education. In accordance with the priorities of common basic and continuing nursing education on PS, there is a need to validate instruments capable of detecting knowledge and competences as perceived by students and health care professionals. The aim of the study was, therefore, to validate an instrument capable to detect the PS knowledge and competences as perceived by students and, potentially, the effects of educational strategies offered at the nursing academic level.

Background

It is widely acknowledged that academic education should include PS (Mansour, 2012; Slater et al., 2012) as a core content of basic nursing education. A multi-level learning process on PS is

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recommended throughout the academic path, especially in the early years when students establish their clinical practice foundations (Walton et al., 2010). Nursing students should be prepared through theoretical and practical sessions, including lessons and clinical practice experience, laboratories and simulation scenarios (Killam et al., 2012; Tella et al., 2014), aimed at developing appropriate knowledge and competences on PS. Nurse educators are required to monitor the breadth of PS nursing knowledge needed within the clinical practice settings (Killam et al., 2013), while students should be considered active learners capable of offering a subjective understanding of PS acquired in the classroom and the clinical environment (Killam et al., 2012). According to available literature on PS, nursing faculties have the mission to prepare students through evidence-based knowledge helping them to develop consistent knowledge, skills, and competencies to use also in interdisciplinary and inter-professional teams, which are needed to continuously improve the quality and the safety of care offered to patients (Abbott et al., 2012; Nørgaard et al., 2013). However, evidence about how nursing students improve their PS knowledge and competence has been limited (Vaismoiradi et al., 2011), while health care environments demand increasing PS competence. In addition, increasingly available data available on unsafe nursing students, shows that errors and lack of PS awareness could be a result of a lack of knowledge, skills and professional relationships with patients and educators (Killam et al., 2011). This suggests the need to revise academic education and curricula (Gregory et al., 2007; Steven et al., 2014), and continually evaluate learning goals.

In the field of PS competence evaluation, few assessment instruments are available (Sullivan et al., 2009). In a systematic review by Okuyama et al. (2011) it emerged that there are 34 instruments devoted to health care professionals, few of which are capable of measuring the breadth of competences involved in PS. In the specific field of health care students, Madigosky et al. (2006) and Flin et al. (2009), have developed questionnaires aimed at measuring PS knowledge and aptitudes, documenting explorative psychometric data. More recently, the US Health Care Professionals Patient Safety Assessment Curriculum Survey (HPPSACS) questionnaire was validated and introduced in the UK (Chenot and Daniel, 2010; Mansour, 2014) with the aim of investigating nursing student awareness, skills, and attitudes concerning PS. Cooper (2013) has developed a tool measuring pre-licensing nursing students' basic information regarding the use of error and near-error reporting tools and how they perceive safety reporting in the clinical setting. Christiansen and colleagues (Christiansen et al., 2010) have also developed an instrument devoted to measuring key aspects of student PS knowledge and attitudes aimed at improving learning outcomes.

Seeking to fill the knowledge gap, Ginsburg et al. (2012) developed the Health Professional Education in Patient Safety Survey (H-PEPSS), involving 1247 newly graduated Canadian nurses, doctors and pharmacists in a cross-sectional survey. The tool measures newly graduated health professionals' self-reported PS competence, based on 38 items, divided into three sections:

- 1) The first section of the questionnaire (composed of 27 items) is focused on learning about specific PS content areas. Its structure, confirmed through factor analysis (CFA) (Ginsburg et al., 2012, 2013), is based on six factors, reflecting the key areas of PS competence: (a) Contributing to a culture of patient safety (items no. = 4); (b) Working in teams for patient safety (items no. = 6); (c) Communicating effectively for patient safety (items no. = 3); (d) Managing safety risks (items no. = 3); (e) Optimizing human and environmental factors (items no. = 3); and (f) Recognizing, responding to and disclosing adverse events and close calls (items no. = 4). The internal consistency of the documented instrument (Ginsburg et al., 2012, 2013) ranges

from α .81 to .85. According to the nature of PS knowledge, which is both theoretical and practical, factors and items are reproduced for two different dimensions (classroom and clinical training): respondents are asked to indicate their agreement for each item regarding contents learned in the classroom and during their clinical experience. Each item is reported as a statement, and uses a 5-point Likert scale for each item with possible responses that ranges from 'strongly disagree' (1) to 'strongly agree' (5) and includes a 'don't know' option (3).

- 2) The second section (composed of five items) is focused on how broader PS issues are addressed in health professional education, and aims to gain an overall understanding of student perceptions regarding their PS education.
- 3) The third section (composed of four items), is dedicated to licensed health care professionals regarding how able and comfortable they feel speaking up about PS.

According to its authors (Ginsburg et al., 2012, 2013), H-PEPSS may be used by health professional educators as well as a self-evaluation tool by students and new graduates.

In the context of Italian nursing education, which involves a significant focus on PS in its theoretical and practical core-curriculum (Decreto Interministeriale, 2009), it is necessary to support the learning process appropriately. Validating an instrument like H-PEPSS in languages other than English may create a basis for international comparisons with regard to the nursing student perceptions of PS knowledge and competence across different educational settings, countries and professional cultures.

Aim of the study

The aim of this study was to assess the validity and the reliability of the H-PEPSS tool in the context of Italian nursing education.

Methods

Study design and rationale

A validation study using a cross-sectional design was undertaken. Initially, researchers debated the appropriateness of the tool (Herdman et al., 1998; Sidani et al., 2010) with regard to a) the underlying concept of PS and its consistency with what is considered in Italian nursing education; b) the pertinence of the items to the knowledge and competences expected in Italian nursing education (Palese and Dalponte, 2007); c) the population involved in the validation (newly graduated nurses, among others), and its similarity to the target population expected; and d) the relevance and acceptability of the items included in the tool.

Instrument translation and face/content validation

Having obtained authorization from the authors (Liane Ginsburg, 17/06/2013), the instrument was translated into Italian (Gjersing et al., 2010; Sidani et al., 2010; Sousa and Rojjanasrirat, 2010). The Italian version was then translated into English (back-translation) aimed at verifying its cross-cultural adaptation (Gjersing et al., 2010). A native English-speaking expert nurse and a certified translator independently undertook the forward and backward translation (Sousa and Rojjanasrirat, 2010). The two English versions obtained were analyzed and compared independently by two other translators (Sousa and Rojjanasrirat, 2010) and any discrepancies were discussed with the previous translators.

A panel of five faculty and clinical nursing experts were involved in the analysis of the final version of the tool with the aim of evaluating its pertinence, clarity of wording, face, and content

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