



Nursing students' knowledge and attitude on pressure ulcer prevention evidence-based guidelines: A multicenter cross-sectional study



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SUMMARY

Background: Pressure ulcers still remain a significant problem in many healthcare settings. Poor knowledge and negative attitudes toward pressure ulcer prevention could undesirably affect preventive care strategies.

Objective: To assess both knowledge and attitudes among nursing students on Pressure Ulcer Prevention Evidence-Based Guidelines.

Design: A multicenter cross-sectional survey was carried out from December 2012 to August 2013.

Settings: The study was carried out in seven Italian nursing schools.

Participants: We involved a convenience sample of nursing students ($n = 742$)

Methods: Data were collected using two validated questionnaires to assess students' knowledge and attitudes on pressure ulcer prevention.

Results: The overall Knowledge and Attitude scores were 51.1% (13.3/26) and 76.7% (39.9/52), respectively. We found a weak correlation between total Knowledge scores and total Attitude scores ($\rho = 0.13$, $p < 0.001$). We also observed that nursing students' year of education, training experience and number of department frequented during their clinical placement were significantly related to both the Knowledge and the Attitude total scores ($p < 0.05$).

Conclusions: Nursing students' knowledge on pressure ulcer prevention was relatively low. However, we observed an association between a high level of education/training experience and higher knowledge scores. Most of the participants showed high attitude scores. These results suggest that positive attitudes toward pressure ulcer prevention may contribute to the compliance with the guidelines in clinical practice.

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Introduction

Pressure ulcer (PU) incidence is widely considered as an indicator measuring the quality of care (Gunningberg and Stotts, 2008; Baharestani et al., 2009). However, PUs still remain a significant problem in many healthcare settings (Gunningberg, 2006; Schoonhoven et al., 2007; Vanderwee et al., 2007a; Hurd and Posnett, 2009; Shahin et al., 2009), and the prevalence of PUs in Europe is still unacceptably high (9.0–18.1) (Vanderwee et al., 2007a; Barrois et al., 2008; Tannen et al., 2009; Gunningberg et al., 2012). This causes pain and frustration for patients (de Laat et al., 2005), with an increase of morbidity and

mortality rates and healthcare costs (Erwin-Toth, 1995; Berlowitz et al., 1997; Allman et al., 1999; Severens et al., 2002).

Background

Interventions to prevent PUs play a pivotal role on early identification of patients at risk to develop lesions (Schoonhoven et al., 2007; Vanderwee et al., 2007b; Shahin et al., 2009) and nurses' knowledge of PU prevention is crucial to evaluate, treat risk factors (Lyder and Ayello, 2012), and mediates preventive care (Gunningberg et al., 2013). PU guidelines are considered important evidence-based knowledge's tools in guiding the care process on healthcare institutions (Meesterberends et al., 2010). However, in spite of their utility, non-adherence of guidelines is frequently reported (Meesterberends et al., 2010; van Gaal et al., 2010).

Evidence suggests that adequate nurses' knowledge and positive attitudes toward PU prevention are positively associated with evidence-based compliance (Beeckman et al., 2010a, 2010b). Several studies explored nurses' attitudes (Bostrom and Kenneth, 1992; Hill, 1992;

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Maylor and Torrance, 1999; Moore and Price, 2004) and knowledge as factors influencing PU prevention (Gunningberg et al., 2013; Bostrom and Kenneth, 1992; Hill, 1992; Halfens and Eggink, 1995; Pieper and Mattern, 1997; Maylor and Torrance, 1999; Pancorbo-Hidalgo et al., 2007; Källman and Suserud, 2009), showing contrasting results on adequacy of nurses' knowledge on prevention and treatment of PUs. We also need to underline, that the use of different tools to assess knowledge make difficult to compare findings among various studies.

To date, literature exploring this topic on a population of student nurses is lacking and few studies explored nursing students' (NS) knowledge (Gunningberg et al., 2013; Caliri et al., 2003; Snarska et al., 2005; Samuriwo, 2010; Beeckman et al., 2010b) and attitudes of PU prevention (Beeckman et al., 2010b). Of the examined studies, two were monocentric in design (Caliri et al., 2003; Snarska et al., 2005), one used a qualitative approach (Samuriwo, 2010), and two were instruments' psychometric evaluation studies (Beeckman et al., 2010a, 2010b). Only one was multicentric with a large sample size (Gunningberg et al., 2013); however authors did not analyze data by ward, training experience, and year of education of NS. Although, all authors showed univocal consent on the necessity to implement comprehensive actions toward increasing PU prevention knowledge among students, only Beeckman et al. (2010b) investigated NS' attitudes toward PU prevention, but with the purpose to develop and validate the attitudes toward ulcer prevention instrument (APuP). In particular, to our knowledge, limited literature (Beeckman et al., 2011; Strand and Lindgren, 2010; Källman and Suserud, 2009; Demarré et al., 2011) explored both knowledge and attitudes about pressure ulcer prevention but in a population of nursing staff, showing contrasting results. Källman and Suserud (2009) and Strand and Lindgren (2010) reported acceptable nurses' knowledge and positive attitudes toward PU prevention, while Beeckman et al. (2011) and Demarré et al. (2011) reported inadequate level of knowledge, and high attitude scores. In particular, Beeckman et al. (2011) showed a significant correlation between knowledge and attitudes. In fact, it is universally recognized that knowledge alone is not capable of influence an individual's likelihood of carrying out a positive behavior (Beeckman et al., 2011). Moreover, findings from systematic reviews focused on the relation between individual characteristics and nurses' research utilization, showed that "attitudes toward research" is the only one that is consistently (with a positive effect) related to research utilization among nurses (Estabrooks et al., 2003; Squires et al., 2011). Thus, efforts in changing individual attitudes toward clinical practice guidelines could be a useful strategy for their effective implementation (Semin-Goossens et al., 2003). To study attitudes can give more indications of what to expect from subjects (Petty and Cacioppo, 1996; Ajzen and Fishbein, 2005), as positive feeling about pressure ulcer prevention is significantly correlated with the application of evidence-based clinical guidelines (Beeckman et al., 2011).

Recent studies on research utilization in newly graduated registered nurses showed that about 50% of the nurses at one, two, and three years after graduation considered their use of research in clinical practice as low or very low (Forsman et al., 2009, 2010). Although several challenges remain regarding the transition from education into practice, factors associated with research utilization are strongly emphasized in the context of nursing education (Hegarty et al., 2009). Therefore, an increased focus on this topic is necessary to better understand individual characteristics of student nurses related to research utilization and how these factors could be taken into account in tailoring early interventions to increase nurses' use of research-based knowledge.

This is the first study specifically tailored to assess both knowledge and attitudes among nursing students, in order to ensure progress in implementing recommendations to guide care and improve the quality of nursing practice. Although the students were undergoing education and cannot be expected to have the same experiences or knowledge of nurses, the findings of this study could be useful to the curriculum development for nursing students, to tailor specific educational programs

and, therefore improving the management of PUs in the clinical setting during their clinical placement and during their work as future nurses.

Thus, the main objective of the study was to investigate attitudes and knowledge of Italian nursing students on PU prevention. We also explored the correlation between knowledge and attitudes, years of education, and nursing training experience.

Methods

Design and Setting

A multicentric cross sectional study was performed in seven Italian nursing schools of three different regions (Marche, Abruzzo and Emilia Romagna) between December 2012 and August 2013.

Study Population

Data on nursing students' knowledge and attitudes were collected using convenience sampling: all students enrolled in the first, second, third year of the Bachelor of Nursing were included. NS who did not accept to participate or who do not sign the informed consent were excluded.

On a total of 855 nurse students, 742 completed the questionnaire, for an overall response rate of 86.8%.

Ethical Consideration

The study protocol was approved from the Review Board and Ethics Committee of coordinating center at the University of (blinded for referee).

Study Procedures and Data Collection

In each participating center a trained researcher was personally responsible for participants' recruitment and information about the purpose of the study. Also, the researchers verified if competence on PU management were present in each bachelor program of the included universities. To be enrolled all students had been informed about the study via written information and, those who voluntarily agreed to participate in the study, had to sign the informed consent. The unwillingness to participate had no consequences for the students' education. After enrollment, the researcher personally administered two validated and self-reported questionnaires (Beeckman et al., 2010a, 2010b) to each student. Participants had 30 min to individually fill out and return the instrument, and the researcher supervised the test's fulfillment in order to avoid other resources consultation by participants. To guarantee the confidentiality and anonymity, students re-submitted the completed questionnaire in an envelope inside a special urn.

Instrument Description

The structured questionnaire included three parts:

- (i) *General information*. Socio-demographic information was collected: name of nursing schools, age, gender, and year of education. Students were asked to provide information of training experiences and in which department (medical, surgical, maternal–child, mental health, and critical). We used the term of "department" to indicate two or more wards/services with the similar specialization.
- (ii) *Knowledge Assessment Instrument*. The Knowledge Assessment Instrument (Beeckman et al., 2010b) is a validated questionnaire to assess knowledge of pressure ulcer prevention. It consists of 26 multiple choice items and three alternative responses reflecting 6 themes expressing the most relevant aspect of pressure ulcer prevention: (1) etiology and development; (2) classification and observation; (3) nutrition; (4) risk assessment; (5) reduction of

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