



## Australian nursing students' knowledge and attitudes towards pressure injury prevention: A cross-sectional study

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### ABSTRACT

**Aim:** The aim of this study was to assess student nurses' knowledge of and attitudes towards pressure injury prevention evidence-based guidelines.

**Background:** Pressure injuries are a substantial problem in many healthcare settings causing major harm to patients, and generating major economic costs for health service providers. Nurses have a crucial role in the prevention of pressure injuries across all health care settings.

**Design:** A multi-centered, cross-sectional study was conducted using a paper-based questionnaire with undergraduate nursing students enrolled in seven universities with campuses across five Australian states (Queensland, New South Wales, Western Australia, Victoria and Tasmania).

**Methods:** Data were collected from nursing students using two validated instruments (Pressure Ulcer Knowledge Assessment Instrument and Attitude Toward Pressure Ulcer Prevention Instrument), to measure students' pressure injury prevention knowledge and attitudes.

**Results:** Students reported relatively low pressure injury prevention knowledge scores (51%), and high attitude scores (78%). Critical issues in this study were nursing students' lack of knowledge about preventative strategies to reduce the amount and duration of pressure/shear, and lower confidence in their capability to prevent pressure injury. Level of education and exposure to working in a greater number of different clinical units were significantly related to pressure injury prevention knowledge and attitude scores.

**Conclusion:** The study findings highlight the need to implement a comprehensive approach to increasing Australian nursing students' pressure injury prevention and management knowledge, as well as ensuring that these students have adequate experiences in clinical units, with a high focus on pressure injury prevention to raise their personal capability.

### What is already known about the topic?

- Pressure injury continues to be a significant source of harm to patients.
- Pressure injury prevention is a nurse-initiated action.
- Previous studies found that although nursing students have positive

attitudes towards pressure injury prevention, their knowledge is relatively low.

### What this paper adds

- Nursing students in this study displayed poor knowledge but good

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overall attitudes towards pressure injury prevention.

- Increased levels of education and wider experience from working within a range of different clinical settings were significantly associated with student nurses' higher knowledge and positive attitudes towards pressure injury.
- There is a need to implement a comprehensive approach to increasing Australian nursing students' knowledge of pressure injury prevention and management.

## 1. Introduction

Pressure injuries are a recognised indicator of quality care and a major problem for patients in many healthcare settings (Baharestani et al., 2009; Gunningberg and Stotts, 2008). Also referred to as pressure ulcers, pressure sores or decubitus ulcers, pressure injuries are defined as localised damage to the skin or underlying soft tissue, which can be intact or open, and graded from Category I (non-blanchable erythema with skin intact) to Category IV (full thickness skin and tissue loss) (National Pressure Ulcer Advisory Panel, 2016). Pressure injuries have the potential to cause major harm to patients, in the form of pain, distress, complications and prolonged hospitalisation (Demarré et al., 2011; Jackson et al., 2017), thereby generating major economic costs for health service providers (Jackson et al., 2016). In fact, the burden of these preventable health outcomes is so serious that many countries have introduced targets for reducing the occurrence of pressure injuries including penalties for hospitals where patients develop pressure injuries (Gunningberg et al., 2013; Lyder and Ayello, 2012). A recent systematic review concluded that the cost of preventing pressure injuries in patients at risk is significantly lower than the cost to treat a pressure injury (Demarre et al., 2015).

Similar to other forms of healthcare-related harm to patients, nurses have a crucial role in the prevention of pressure injury. Pressure injury avoidance is considered one of the nurse sensitive indicators, or a "... valid and reliable means to support nursing care quality and performance measurement in the hospital unit setting..." (Heslop & Lu, 2014, p. 2440). Poor knowledge and negative attitudes toward pressure injury prevention have been found to effect the implementation of pressure injury preventive care strategies in practice (Moore and Price, 2004; Simonetti et al., 2015). Internationally however, despite the importance of pressure injury prevention and the ongoing development of guidelines for deterrence, the level of Registered Nurses' knowledge of both risk and impedance strategies is varied and little is known of nursing students' knowledge of pressure injuries or their prevention (Gunningberg et al., 2013). It is also the case that there is currently little understanding of how Australian nursing students perceive this important topic. What is reported in the international literature indicates that student nurses do have the appropriate attitudes towards pressure injury prevention (Gill and Moore, 2013; Gunningberg et al., 2013; Rafiei et al., 2015), but their knowledge and skills are inadequate (Gill and Moore, 2013; Gunningberg et al., 2013; Rafiei et al., 2015).

Bandura's theory of self-efficacy indicates that high confidence in knowledge and skills influences a person's persistence with challenging tasks such as patient safety. Hence, confident clinicians are likely to believe their actions and decisions shape events (Usher et al., 2017), and are therefore more likely to persist with efforts to improve patient outcomes, such as pressure injury prevention. As nurses have the opportunity to significantly impact this problem (Moore and Price, 2004), it is important that student nurses' are educationally prepared to contribute to pressure injury prevention, both during their time as students and when they become Registered Nurses. It is essential that graduate nurses have sufficient knowledge and skills to prevent the occurrence of pressure injuries and to recognize, assess and treat appropriately when required. Nurse educators are vested with the responsibility to ensure curriculum design includes students' development of the requisite knowledge, skills and attitudes about pressure injury prevention to ensure new graduates are ready for the clinical environment (Francis,

2013; Mansour, 2013). Clinical nurses also have an important role in developing student nurses' pressure injury prevention knowledge and skills during their attendance at clinical placements. Nursing curricula and clinical placements should be designed to ensure these issues are adequately covered (Ginsburg et al., 2012). Unfortunately, there is some evidence that nursing curricula lacks sufficient attention to patient safety, which includes pressure injury prevention (Attree et al., 2008).

### 1.1. Aim

The aim of this study was to assess nursing students' knowledge and attitudes towards pressure injury prevention evidence-based guidelines. This is the first Australian study specifically designed to assess both knowledge and attitudes of pressure injury prevention. The study was undertaken to inform curriculum development and to improve the resultant quality of care and patient health outcomes.

## 2. Methods

### 2.1. Design and setting

A multi-centered cross-sectional study was conducted using a paper-based questionnaire with undergraduate nursing students enrolled in seven universities with campuses across five Australian states (Queensland, New South Wales, Western Australia, Victoria and Tasmania) between June and December 2016. Bandura's (1988) theory of self-efficacy guided this study. The questionnaire consisted of a demographics section, a validated pressure injury knowledge questionnaire (Beeckman et al., 2010b), and a validated pressure injury attitudes questionnaire (Beeckman et al., 2010a).

### 2.2. Participants

Using convenience sampling, all first, second and third year students enrolled in an undergraduate-nursing programme (Bachelor of Nursing or equivalent) at each of the seven participating universities were deemed eligible to participate. The undergraduate Bachelor of Nursing programme is a 2–4 year programme with most universities offering it over a 3 year period and requires a minimum of 800 h supervised clinical placements in a range of health settings to prepare students for a career as a registered nurse. The programme is scaffolded to progressively build nursing students' knowledge and skills.

### 2.3. Sample size analysis

The primary outcome was to estimate pressure injury knowledge in the population of nursing students. Previous studies have examined samples of nursing students (Simonetti et al., 2015) and nurses (Beeckman et al., 2011) using the same instrument and reported mean knowledge scores of 51.1% and 49.6% respectively. Using an estimated mean of 49 with a 95% confidence interval, a margin of error of  $\pm 10$ , and an alpha of 0.05, a required sample size of 325 was calculated.

### 2.4. Data collection

In each university, a research partner was responsible for participant recruitment and administration of the questionnaire. A member of the university staff not involved in the study informed nursing students about the study verbally, and distributed the participant information sheet and consent form to those who voluntarily agreed to participate. The self-report questionnaire was distributed to each student during a lecture or tutorial in the second semester (June–November) of 2016 at each of the participating universities. Students were asked not to use any resources or ask other students for answers while completing the questionnaire. The university staff member supervised students while

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