



# Survey of attitudes and practices of Irish nursing students towards hand hygiene, including handrubbing with alcohol-based hand rub



Liz M. Kingston <sup>a,\*</sup>, Nuala H. O'Connell <sup>b,c</sup>, Colum P. Dunne <sup>c</sup>

<sup>a</sup> Department of Nursing and Midwifery, University of Limerick, Limerick, Ireland

<sup>b</sup> Department of Clinical Microbiology, University Hospital Limerick, Limerick, Ireland

<sup>c</sup> Graduate Entry Medical School and Centre for Interventions in Infection, Inflammation & Immunity (4i), University of Limerick, Limerick, Ireland

## ARTICLE INFO

### Article history:

Received 13 September 2016

Received in revised form 16 December 2016

Accepted 21 February 2017

Available online xxxxx

### Keywords:

Nursing students

Hand hygiene

Alcohol-based hand rub

Attitudes

Self-report

Practice

Infection prevention and control

Ireland

## ABSTRACT

**Background:** Hand hygiene is widely recognised as the most important measure a healthcare worker can take in preventing the spread of healthcare associated infections. As a member of the healthcare team, nursing students have direct patient contact during clinical practice; hence, good hand hygiene practice among nursing students is essential. Low to moderate levels of hand hygiene knowledge and poor attitudes and practices are reported among nursing students. However, less is known about their attitudes and practices of handrubbing with ABHR, even though handrubbing is the recommended optimum practice in most situations.

**Aim:** The aim of this study was to explore attitudes and practices of hand hygiene, in particular handrubbing with alcohol-based hand rub, among nursing students in Ireland.

**Design:** This survey employed a descriptive, self-report design using a questionnaire to gather data. It was administered electronically to all undergraduate nursing students (n = 342) in the Department of Nursing and Midwifery at the University of Limerick, Ireland in March and April 2015.

**Results:** Response rate was 66%. Attitudes towards hand hygiene were generally positive. Compliance with hand hygiene after contact with body fluid was high (99.5%) and before a clean or aseptic procedure (98.5%). However, suboptimal practices emerged, before touching a patient (85%), after touching a patient (87%) and after touching patients' surroundings (61%), with first year students more compliant than fourth year students. 16% of students were not aware of the clinical contraindications for using alcohol-based hand rub and 9% did not know when to use soap and water and when to use alcohol-based hand rub.

**Conclusion:** Educators and practitioners play an important role in ensuring that nursing students develop appropriate attitudes towards hand hygiene and engage in optimal handrubbing practices. Raising awareness among nursing students of their responsibility in preventing the occurrence and reducing the transmission of HCAI as an on-going endeavour is required, with the laudable aim of preventing complacency and ultimately improving patient outcomes.

© 2017 Elsevier Ltd. All rights reserved.

## 1. Introduction

Hundreds of millions of patients are affected by health care-associated infection (HCAI) worldwide each year (World Health Organization (WHO), 2013). HCAI represents a major public health concern, affecting up to 80,000 patients in European Hospitals on any given day (European Centre for Disease Control (ECDC), 2013). In Ireland, a national overall HCAI prevalence of 5.2% in acute care facilities is reported (Health Protection Surveillance Centre (HPSC), 2012) and patient complications arising from multi-drug resistant organisms (MDROs) are becoming more evident in the recent literature (O'Connor et al., 2015; WHO, 2013). The ECDC (2013) estimates that 25,000 people die in the

European Union annually from infections caused by MDROs with an associated cost of €1.5 billion. Hand hygiene is globally recognised as the most effective measure a healthcare worker can take to reduce the risk of cross-transmission of pathogens (HPSC, 2012). It is simple, cost-effective and highly efficacious in controlling the spread of HCAI. Despite this, evidence suggests that compliance among healthcare workers is sub-optimal (Erasmus et al., 2010; Kingston et al., 2016).

## 2. Background

Hand hygiene is a general term that refers to any action of hand cleansing, of which there are many suited to various different clinical scenarios. However, one form of hand hygiene i.e. handrubbing with alcohol-based hand rub (ABHR) is globally advocated as the optimum approach to hand hygiene in most situations. The WHO (2009) defines

\* Corresponding author.

E-mail address: [liz.kingston@ul.ie](mailto:liz.kingston@ul.ie) (L.M. Kingston).

handrubbing as “applying an antiseptic handrub to reduce or inhibit the growth of microorganisms without the need for an exogenous source of water and requiring no rinsing or drying with towels or other devices” and this is the definition adopted by the University of Limerick and affiliated clinical practice sites where the study sample is practicing. Handrubbing is the ‘gold standard’ technique or optimum approach to perform hand hygiene on all occasions, except those for which handwashing with soap and water is recommended, for example, when nursing patients with *Clostridium difficile* infections (WHO, 2009) and both the university and affiliated clinical practice sites follow this recommendation. Handrubbing is performed in isolation, as a standalone technique, and should not be combined with any other approach to hand hygiene.

Nursing students have direct patient contact during clinical placements and internships and, in fact, account for a sizable percentage of the healthcare personnel involved in patient care (Bargellini et al., 2014). Consequently, they are at risk of becoming mediators of pathogenic microorganisms or contracting a HCAI (Al-Khawaldeh et al., 2015). Yet, research on nursing students’ hand hygiene practices is limited, with less emphasis placed on investigating nursing students’ practices than those of nurses, due to their perceived position within the hospital hierarchy (Jeong and Kim, 2016). Kingston et al. (2016) identified nurses and doctors as the categories of healthcare worker most often the focus of hand hygiene compliance studies. However, it is important to explore and understand nursing students’ hand hygiene practices as they will become registered nurses in the future (Cruz and Bashtawi, 2015).

Following a literature search, a reasonable number ( $n = 14$ ) of recent international research studies were identified concerning nursing students’ hand hygiene practices. Moderate hand hygiene knowledge among nursing students is reported in India (Nair et al., 2014), Sri Lanka (Ariyaratne et al., 2013), South Korea (Jeong and Kim, 2016), Jordan (Al-Khawaldeh et al., 2015) and Namibia (Ojulong et al., 2013). However, poor knowledge of hand hygiene among nursing students is reported in some European countries, for example, Italy (D’Alessandro et al., 2014, van de Mortel et al., 2011) and Slovakia (Kelčíkova et al., 2012). Nair et al. (2014) and Ariyaratne et al. (2013) report that attitudes towards hand hygiene and hand hygiene practices are poor, although Cruz and Bashtawi (2015) and Al-Khawaldeh et al. (2015) report moderate attitudes and practices among Saudi Arabian and Jordanian nursing students, respectively. In comparative studies better hand hygiene practices among nursing students than medical students is reported (van de Mortel et al., 2010, van de Mortel et al., 2011).

A small number of these recent studies report on handrubbing using ABHR ( $n = 9$ ), providing limited data in some cases (Al-Khawaldeh et al., 2015, Hinkin and Cutter, 2014, Bargellini et al., 2014, Ojulong et al., 2013, Gül et al., 2012, van de Mortel et al., 2011), while others provide more insight (Jeong and Kim, 2016, Nair et al., 2014 and Ariyaratne et al., 2013). While the numbers of studies are relatively low, the data presented appear to suggest that ABHR knowledge among nursing students is poor, with correct responses to questions on handrubbing technique as low as 11.5% (Gül et al., 2012), 14% (Ariyaratne et al., 2013) and 28.8% (Jeong and Kim, 2016). Only, 28% of Indian students (Nair et al., 2014) and 25% of Sri Lankan students (Ariyaratne et al., 2013) knew the correct minimum time required for effective handrubbing (WHO, 2009), suggesting poor practice. In a Welsh study, less than half of the respondents ( $n = 354$ ) were unaware that ABHR usage is not recommended when nursing patients with *Clostridium difficile* infections (Hinkin and Cutter, 2014). van de Mortel et al. (2011) also found knowledge deficits relating to ABHR among Italian nursing students. However, other more positive responses are reported with 81.7% of nursing students aware that handrubbing using ABHR takes less time than using soap and water (Ariyaratne et al., 2013) and 75–85% of South Korean students knew when to perform handrubbing using ABHR (Jeong and Kim, 2016).

## 2.1. Conceptual Framework

Where a study has its roots in a conceptual model, the study framework is often called the conceptual framework (Polit and Beck, 2013). The WHO *Guidelines on Hand Hygiene in Health Care* (WHO, 2009) globally underpin best hand hygiene practice by providing an evidence-based conceptual framework for practitioners and educators alike, along with recommendations to improve practices and reduce HCAI transmission. This study has its roots in this conceptual framework, which presents an understanding of the phenomenon of interest and offers assembled concepts relevant to the study theme and design. The variables measured in this study are underpinned by the espoused practices and recommendations of the *Guidelines*.

According to the *Guidelines* handrubbing with ABHR is recommended as the ‘gold standard’ technique in hand hygiene, with healthcare workers advised to routinely perform hand hygiene using ABHR for day-to-day decontamination of hands (WHO, 2009). Therefore, it is important to understand nursing students’ attitude and practices of handrubbing, as this is the optimum practice that students are expected to adhere to both in the university and clinical practice settings. Despite this, on searching the literature, we found a paucity of international research which comprehensively explores nursing students’ handrubbing practices. There remains a need for further research to be conducted that explores the use of ABHR. Those studies that do report handrubbing practices largely do so as part of a larger hand hygiene study, with little specific emphasis placed on handrubbing practices. In summary, internationally there has not been focus on nursing attitudes and practices regarding ABHR and, more specifically, no Irish study has explored hand hygiene and handrubbing practices among nursing students. Hence the objective of this study was to provide insight into the current hand hygiene and in particular handrubbing practices of nursing students in Ireland and, by doing so, contribute to the broader understanding of this topic.

## 3. Methods

### 3.1. Design

This study employed a descriptive, self-report design and aimed to explore nursing students’ hand hygiene attitudes and practices and in particular handrubbing using ABHR. All undergraduate students of a Bachelor of Science Nursing honours degree programme ( $n = 342$ ), within the Faculty of Education and Health Sciences in the University of Limerick, were invited via student email addresses to participate, between March and April 2015. They were provided a link to the online study instrument and to a concise, unbiased explanation of the survey topic. The sample comprised students across the four cohorts of the four year programme. As part of the students’ curricula, hand hygiene education and training had been delivered to all cohorts, underpinned by the WHO *Guidelines*, consistently across both the university and the clinical practice sites. Students in each cohort were middle to near-end of the academic year and all had experience of delivering direct patient care during the clinical practice placement components of their programmes. Participation indicated consent and was voluntary and anonymous.

### 3.2. Data Collection and Analysis

Following a literature review a published study instrument was selected for data collection (Larson, 2004). The validated questionnaire, originally developed at Columbia University, New York, was designed to assess barriers to adherence to the *Centers for Disease Control and Prevention (CDC) hand hygiene guideline* (CDC, 2002). To reflect the current WHO *Guidelines* (WHO, 2009), the survey was modified. In addition, two experienced researchers reviewed the questionnaire for content validity and additional questions were added. To further address

Download English Version:

<https://daneshyari.com/en/article/4940653>

Download Persian Version:

<https://daneshyari.com/article/4940653>

[Daneshyari.com](https://daneshyari.com)