



The role of time pressure and different psychological safety climate referents in the prediction of nurses' hand hygiene compliance [☆]



Nerina L. Jimmieson ^{a,*}, Michelle K. Tucker ^a, Katherine M. White ^b, Jenny Liao ^c, Megan Campbell ^d, David Brain ^d, Katie Page ^d, Adrian G. Barnett ^d, Nicholas Graves ^d

^a School of Management, Queensland University of Technology, Australia

^b School of Psychology and Counselling, Queensland University of Technology, Australia

^c UWA Business School, University of Western Australia, Australia

^d Institute of Health and Biomedical Innovation, Queensland University of Technology, Australia

ARTICLE INFO

Article history:

Received 27 March 2015

Received in revised form 27 July 2015

Accepted 27 August 2015

Keywords:

Time pressure

Safety climate

Hand hygiene

Safety compliance

Hospital nurses

ABSTRACT

In this study of 638 Australian nurses, compliance to hand hygiene (HH), as defined by the “five moments” recommended by the World Health Organisation (2009), was examined. Hypotheses focused on the extent to which time pressure reduces compliance and safety climate (operationalised in relation to HH using colleagues, manager, and hospital as referents) increases compliance. It also was proposed that HH climate would interact with time pressure, such that the negative effects of time pressure would be less marked when HH climate is high. The extent to which the three HH climate variables would interact among each other, either in the form of boosting or compensatory effects, was tested in an exploratory manner. A prospective research design was used in which time pressure and the HH climate variables were assessed at Time 1 and compliance was assessed by self-report two weeks later. Compliance was high but varied significantly across the 5 HH Moments, suggesting that nurses make distinctions between inherent and elective HH and also seemed to engage in some implicit rationing of HH. Time pressure dominated the utility of HH climate to have its positive impact on compliance. The most conducive workplace for compliance was one low in time pressure and high in HH climate. Colleagues were very influential in determining compliance, more so than the manager and hospital. Manager and hospital support for HH enhanced the positive effects of colleagues on compliance. Providing training and enhancing knowledge was important, not just for compliance, but for safety climate.

Crown Copyright © 2015 Published by Elsevier Ltd. All rights reserved.

1. Introduction

Hospital-acquired infections (HAIs) are an important public health problem throughout the world, and Australia is no exception. As reported by the [Australian Institute of Health and Welfare \(2014\)](#), 1621 episodes of Staphylococcus Aureus Bacteremia (SAB) occurred during the 2013–14 surveillance period for patients being treated for other conditions in public hospitals, of which 1232 episodes involved Methicillin-Susceptible Staphylococcus Aureus (MSSA) and 389 episodes involved Methicillin-Resistant Staphylococcus Aureus (MRSA). SAB rates have decreased

from 1.10 cases (2010–11) to 0.87 cases (2012–14) per 10,000 days of patient care ([Australian Institute of Health and Welfare, 2014](#)). Also in the Australian context, [Mitchell et al. \(2014\)](#) demonstrated a significant downward trend in the incidence of hospital-onset SAB of 9.4% per year from 2002 to 2013. Nevertheless, HAIs are ever-present, and they lead to adverse patient outcomes and create economic burden (see [Clements et al., 2008](#); [Zingg et al., 2015](#)).

The hands of healthcare workers (HCWs) are the principal conduit for transmitting pathogens patient-to-patient ([Collignon, 2008](#); [Collignon et al., 2007](#)), and it has long been accepted that adherence to hand hygiene (HH) procedures (most notably, hand-washing with an alcohol-based hand rub) is critical ([Collignon, 2008](#); [Collignon et al., 2007](#)), if not the most important measure ([Pittet, 2000](#)). However, HH compliance is compromised by many different influences attributable to the HCW and the hospital setting in which they work ([Dyson et al., 2013](#); see also [Allegranzi and Pittet, 2009](#); [Pittet, 2000, 2001](#), for reviews). The aim of this paper is to examine two different aspects of the psychosocial work

[☆] Author note: This study was funded by an Australian National Health and Medical Research Council Partnership Project (553081) and the Australian Commission on Safety and Quality in Health Care. The funders had no involvement in any parts of the study.

* Corresponding author at: School of Management, Queensland University of Technology, Brisbane, Queensland 4000, Australia. Tel.: +61 7 3138 4260.

E-mail address: n.jimmieson@qut.edu.au (N.L. Jimmieson).

environment (i.e., perceived time pressure and safety climate as it relates to HH) in the prediction of self-reported HH compliance among a random sample of Australian nurses using a prospective research design.

1.1. Nursing workload and HAIs

A meta-analysis (Kane et al., 2007) and several qualitative reviews of the literature (Griffiths et al., 2008; Hugonnet et al., 2004; Lang et al., 2004; McGahan et al., 2012; Needleman and Buerhaus, 2003; Penoyer, 2010; Stone et al., 2008; Zingg et al., 2015) have concluded that a high volume of work for frontline HCWs is associated with an increased risk of HAIs. In a recent example of such studies, Cimiotti et al. (2012) found that an additional patient assigned to each nurse was associated with a .86 and .93 unit increase in the rate of urinary tract and surgical site infections, respectively. The effects of patient load became non-significant when job burnout was included in the models, suggesting that job burnout fully mediated these relationships. Cimiotti et al. argued that the cognitive detachment associated with high job burnout might result in inadequate HH practices and lapses in other infection-control procedures (see Virtanen et al., 2009 who also speculated that their observed association between long work hours and cross-transmission of pathogens might be explained by decreased vigilance for HH). However, the potential mediating role of HH compliance was not a variable tested in these studies.

1.2. Nursing workload and HH compliance

As noted by Pittet (2000, 2001), understaffing and/or overcrowding in hospitals leads to increased workload, which leads to no time for performing adequate HH. Indeed, Ashraf et al. (2010) found that a sizeable proportion of nurses (35%), certified nursing assistants (22%) and other HCWs (44%) in their sample of 1143 nursing home employees reported that they 'sometimes to always' forgot to wash their hands because they were busy. In a survey of neonatal HCWs, 51% reported not remembering to perform HH and 41% reported no time to do so (Pessoa-Silva et al., 2005). Interviews with neonatal ICU nurses from a Thai hospital also showed that reasons given for HH noncompliance are a lack of time due to emergency procedures and too many concurrent functions (Picheansathian et al., 2008), and focus groups with 153 HCWs conducted by Jang et al. (2010) revealed several themes, including that workload realities (e.g., urgencies and interruptions) make complete adherence to HH impossible. Focus groups with Australian nurses also revealed that having too much to do was a major barrier for not washing one's hands enough (Whitby et al., 2006). De Wandel et al. (2010) showed a significant negative relationship between having a negative attitude towards time-related barriers and self-reported HH compliance for 148 ICU nurses.

Observational research, using objective workload indices, has shown that intensity of activity (as indexed by type of care, time of shift, time elapsed for 10 handwashing indications, nursing unit census, and patient-to-nurse ratio) was significantly negatively associated with observed adherence to HH recommendations 120 nurses (e.g., O'Boyle et al., 2001). Similarly, Pittet et al. (2004) showed that a workload activity index (number of observed opportunities for HH per hour of patient care for each physician) predicted observed HH adherence (see also Pittet et al., 1999, for similar findings for a broader sample of HCWs). Other observational studies also have demonstrated a relationship between staff shortages and poor HH compliance during infection outbreaks (e.g., Grundmann et al., 2002; Harbarth et al., 1999).

Other researchers have acknowledged that objective workload measures are only surrogate indicators of nursing workload and

may not represent the demand experiences of nurses, neither actual or perceived (Pearson et al., 2006). As defined by Carayon and Gurses (2005), the workload of nurses reflects the combined effects of the physical, cognitive, emotional, and temporal demands experienced while performing direct and indirect care activities and the demands imposed on them in the work system (see also Carayon and Alvarado, 2007). The work of Schubert and colleagues - who developed an implicit rationing of nursing care scale - also recognizes the subjective nature of nurses' workload experience by asking nurses to rate the extent to which they are unable to perform 32 necessary nursing tasks (which includes an item in reference to HH) due to inadequate time, staffing levels, and/or skill mixes (Schubert et al., 2007).

Studies have shown that the subjective experience of time pressure and feeling that one has too much to do has implications for the safety of patients. Gurses et al. (2009) showed that nurses who perceived high workload during their most recently completed shift reported providing lower levels of safe, detailed, and quality care to patients. Gershon et al. (2000) showed that strict self-reported compliance to 14 Universal Precautions (UPs) was predicted by an absence of job hindrances related to time pressure for 789 HCWs at high risk for blood and body fluids exposure (see also Gershon et al., 1995). In a ward-level analysis, Virtanen et al. (2009) demonstrated that wards with personnel characterising their jobs as requiring high effort and low reward had an approximately 2-fold increase in HAIs. In a study of 1630 Swiss nurses in which ward-level and hospital-level clustering effects were accounted for, implicit rationing (withholding) of nursing care due to inadequate time and resources (as reported over past seven days) predicted nurse-rated recall of the regularity of bloodstream infection and pneumonia over the last year, but not urinary tract infection (Ausserhofer et al., 2013). However, such studies are yet to provide an explicit test of the relationship between nurses' experience of workload and their HH compliance.

1.3. Role of safety climate

Economic solutions to inadequate staffing levels and high workloads are not always possible and, as noted by Holden et al. (2011), staffing interventions may not be the sole solution to improving nursing care and patient outcomes. Thus, there is a need to consider other work system characteristics that (1) serve to promote HH compliance and (2) operate to mitigate the negative influence of high workloads and time pressure on HH compliance. One such characteristic is the notion of safety climate, which Zohar (2003) defined as employee perceptions pertaining to formal and informal workplace policies, procedures, and practices pertaining to safety (see also Choudhry et al., 2007; Guldenmund, 2000, for reviews of safety climate definitions).

At the individual-level, safety climate is often referred to as *psychological* safety climate; thus representing an individual's evaluation of the importance one's organisation (or workgroup) places on safe work practices. Recognising that safety climate also occurs at aggregate levels, others have defined and treated safety climate as a group-level variable (at various hierarchical levels of the organisation) representing the *shared cognitions* that emerge among a set of individuals. Hofmann and Stetzer (1996) suggested that there are five nested levels of data collection (individuals, work groups, departments, organisations, and environments), whereas Zohar (2003) argues that safety climate can be meaningfully construed at only two levels (i.e., the subunit/group level and the organisational level).

In addition to making a distinction among levels, safety climate is defined in terms of its many dimensions. As noted by Hahn and Murphy (2008), some authors have proposed as few as two factors and as many as nine. An integrative model by Christian et al.

Download English Version:

<https://daneshyari.com/en/article/6975549>

Download Persian Version:

<https://daneshyari.com/article/6975549>

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