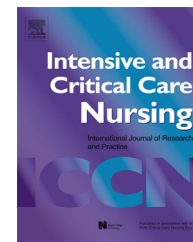




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ORIGINAL ARTICLE

# Developing professional habits of hand hygiene in intensive care settings: An action-research intervention<sup>☆</sup>

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## KEYWORDS

Action research;  
Hand hygiene;  
Intensive care unit;  
Organisational change;  
Prevention;  
Unconsciousness

## Summary

**Objectives:** To explore perceptions and unconscious psychological processes underlying hand-washing behaviours of intensive care nurses, to implement organisational innovations for improving hand hygiene in clinical practice.

**Research methodology:** An action-research intervention was performed in 2012 and 2013 in the intensive care unit of a public hospital in Italy, consisting of: structured interviews, semantic analysis, development and validation of a questionnaire, team discussion, project design and implementation. Five general workers, 16 staff nurses and 53 nurse students participated in the various stages.

**Results:** Social handwashing emerged as a structured and efficient habit, which follows automatically the pattern "cue/behaviour/gratification" when hands are perceived as "dirty". The perception of "dirt" starts unconsciously the process of social washing also in professional settings. Professional handwashing is perceived as goal-directed. The main concern identified is the fact that washing hands requires too much time to be performed in a setting of urgency. These findings addressed participants to develop a professional "habit-directed" hand hygiene procedure, to be implemented at beginning of workshifts.

**Conclusions:** Handwashing is a ritualistic behaviour driven by deep and unconscious patterns, and social habits affect professional practice. Creating professional habits of hand hygiene could be a key solution to improve compliance in intensive care settings.

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## Implications for Clinical Practice

- Habits of social handwashing in everyday life influence professional hand hygiene behaviours in intensive care settings.
- The development of a professional handwashing habit in the staff of intensive care nurses, may help overcome the psychological resistances due to the perception of urgency of clinical practice.
- It is possible to develop specific professional hand hygiene habits, to be performed at the beginning of the turn, in accordance with characteristics and needs of professionals involved.
- The Action-research approach is an effective way to actively involve the nurse staff and introduce organisational innovations to improve handwashing behaviours in an intensive care unit.
- The procedure applied and tested in this study, in all its phases, can be used to improve the practice of professional hand washing in intensive care units.

## Introduction

Handwashing, if correctly implemented, can reduce the risk of cross-transmission of infection in healthcare facilities (Bobo and Dubberke, 2010; Curtis, 2008; Tsai and Cateson, 2014; WHO, 2009b). However, many studies reveal that compliance with the practice is lower than expected, especially in intensive care units. A recent review including 96 empirical studies performed in several countries, found a median compliance rate of 40%, with rates lower in intensive care units (30–40%) than in other settings (50–60%), and before (21%) rather than after (47%) patient contact (Erasmus et al., 2010).

The Hospital of Treviso – “Cà Foncello” (1111 hospital beds in total, including 58 in intensive care at 31/12/2015), has adopted the WHO multi-modal intervention strategy (WHO, 2009a) since 2005. Despite this, a quantitative blind observational study performed across April and May 2012 in the Intensive Care Unit, based on weighing the dispensers of hand hygiene products at the beginning of workshifts, revealed an inadequate consumption (Berto, 2012). These findings led to hypothesise that the training and adopted tools were not sufficient to reach an adequate adherence to hand hygiene, this could be influenced by cultural and psychological dimensions (Huis et al., 2012).

In order to explore this issue and identify solutions to improve handwashing amongst intensive care nurses, an action-research intervention was carried out during the years 2012–2013. The strength of action research relies on its ability to empower professionals, who are actively involved in identifying problems, carrying out research, developing and implementing practical solutions, monitoring and reflecting on the process and its outcomes, in order to sustain the change (Meyer, 2000). We hypothesised that action research could be a helpful approach to improve the practice of handwashing in intensive care setting, overcoming the weaknesses of frontal training strategies.

The specific aim of the intervention was two-fold: first, to investigate patterns and frameworks of intensive care nurses towards hand hygiene and to explore perceptions and unconscious psychological processes which underlie and influence handwashing behaviours. Second, to develop and implement an intervention to improve handwashing in clinical practice.

## Methods

The action-research intervention involved the whole population of nurses of the unit, and started in early 2012. It was performed as a modular sequence of interconnected phases, each of them developed on the results emerged in the previous ones. Formative research (Glanz et al., 2008) and groups of discussion (Czerwinsky Domenis, 2000) were utilised to permit active participation of professionals in developing research tools, reflecting on the outcomes and identifying potential solutions. (1) As first step, deep interviews with representatives of different professions were carried out to investigate the motivations given by individuals to the practice of handwashing (performed or avoided), both in daily life, and in the professional setting. Five workers were interviewed: an expert nurse from the intensive care unit, a hospital caregiver, a health technician, an early childhood teacher and a school janitor. The choice of involving different professions is due to the need of generalising findings from the study (WHO, 2009b). The early childhood education sector was chosen as the control sector, because in this area health hygiene requirements, for the purpose of preventing the spread of community infections due to contact and the management of care contact with children, are equally relevant than as in healthcare specific settings. Also, from a professional point of view, this working model is characterised by a limited available time and an approach of “urgency”, similar to the field of emergency health services. One professional for each category was enrolled amongst professionals in contact with the working team, on the basis of voluntary availability. (2) Motivations emerged were subjected to an in-depth linguistic semantic analysis, to identify the denotative meanings that characterise the issue. The analysis was performed using Google Translator, and by applying a sequential translation in different languages (Italian, Standard Chinese and English). (3) The denotative meanings that emerged by the analysis were listed as keywords and used to select various images using Google Images. This search engine allows to identify the images most frequently associated by the Internet users with the keywords identified in the previous step. (4) In order to investigate the semantic differential of the connotative meanings of the issue; a visual questionnaire was developed using the selected images (Osgood et al., 1967). The choice

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