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Titolo tesi: Compliance with Standard Precautions for the control of health care-associated infections

ABSTRACT

Background. Globally, hundreds of millions of people are affected every year by health care-associated infections (HAIs), many of which are completely avoidable. The primary strategy for the prevention of HAIs in healthcare workers (HCWs) and patients is the implementation of guidelines called "Standard Precautions" (SPs). In spite of more than twenty years of widespread adoption of SPs by organizations, gaps in their implementation by HCWs have been noted. Current literature emphasizes the need for further study to assess compliance with SPs and contributing factors and to develop, implement, and evaluate improvement interventions. This doctoral work intends contribute to the production of new evidence in this field to support nurses' occupational health and patient safety. In particular we aim to: 1) Provide a first valid and reliable tool to assess compliance with SPs among Italian nurses; 2) Implement and evaluate an intervention to increase nurses' compliance with SPs; 3) Explore factors that can influence intensive care nurses' compliance with SPs during emergencies.

Methods. For the first aim, a validation study was performed in two phases: 1) translation and cross-cultural adaptation of the Compliance with Standard Precautions Scale (CSPS) and 2) validity and reliability evaluation of the CSPS Italian version (CSPS-It). Confirmatory factor analysis (CFA) and hypothesis testing were performed to evaluate the construct validity. Cronbach's alpha, intra-class correlation coefficient of test-retest scores, and item-total correlation were computed to establish reliability.

For the second aim, a cluster randomized controlled trial with a pretest-posttest design was conducted with 121 clinical nurses who worked in different wards of a university hospital. The intervention group (n = 61) had three infection control link nurses (ICLNs) nominated and attended systematic audits and feedback. The control group (n = 60) received only the standard multimodal approach used in the hospital. Pre- and posttest assessment of SP compliance was performed via the WHO observational hand hygiene form and CSPS-It.

For the third aim, a descriptive qualitative study was conducted with a team of 19 intensive care nurses who had at least two years of work experience in critical care. The nurses were interviewed in four focus groups and were asked about their experiences of being compliant with SPs during an emergency. Data were analyzed using conventional content analysis.

Results. In the first study, the CSPS-It showed sound validity and reliability. The unidimensional model tested at CFA yielded acceptable fit indices. The hypothesis testing supported better compliance by nurses based on participation in at least one training course on SPs.

The second study showed, at the posttest, that nurses in the intervention group reported significantly increased compliance with hand hygiene, whereas no significant improvement was found in the control group. Nurses in both groups reported significantly increased CSPS-It scores; however, a greater increase and practical significance was observed in the intervention group. Participants who improved their scores were also compared between groups, showing a significantly greater increase of individual scores in the intervention group compared to the control group. The third study led to the identification of three themes that influence intensive care nurses' experiences of being compliant with SPs during emergencies: conflict, competencies, and context. Conflict was reported between the need to save a patient and the need for self-protection through the use of SPs. In particular, nurses had to manage time pressures. Competencies were identified as nurses' knowledge, attitude, skills, training, and experience. Context was related to the work and organizational conditions during the emergency, including overcrowding.

Conclusions. The results presented in this doctoral work provide new evidence in infection prevention and control research. A first valid and reliable scale (CSPS-It) for measuring compliance with SPs among Italian nursing staff was provided. The effectiveness of the implemented intervention provides significant practical implications for hospitals seeking to improve compliance with SPs among nurses. Finally, our qualitative study increased knowledge to support intensive care nurses' compliance with SPs during emergencies and to guarantee the maintenance of optimal levels of safety.