Validation and adaptation of an instrument for assessing the perceived organizational infection prevention climate: evidence from Chinese healthcare workers

Yanfang Huang
Department of Critical Care Medicine, The Affiliated HospitalSouthwest Medical University, China

In recent years, organizational factors such as infection prevention climate have been recognized as important factors of healthcare workers' adherence to infection prevention practices. However, there is a lack of instruments with good reliability and validity to measure infection prevention climate within organizations in Chinese context. Therefore, this study aims to translate, culturally adaptation and test for the psychometric properties of the Chinese version of Leading a Culture of Quality for Infection Prevention (CLCQ-IP). The original scale was translated into Chinese through 1) Forward translation; 2) Expert review; 3) Back translation; 4) Applicability evaluation. Then, a multicenter cross-sectional survey was conducted using the CLCQ-IP. Reliability in terms of internal consistency was evaluated. The content validity, exploratory factor analysis, confirmatory factor analysis, were tested for assessing the construct validity of the CLCQ-IP. After linguistic and cultural adaptation, the CLCQ-IP was finally formed with 19 items in 4 dimensions and a total 882 HCWs from 4 provinces finished the survey. The overall Cronbach's alpha of the CLCQ-IP was 0.865. The items of content validity index, ICVI of the C-SPQ ranged from 0.875 to 1.00, and the scale of content validity index S-CVI/AVE was 0.894. In terms of construct validity, the exploratory factor analysis extracted a total of 4 factors, which were consistent with the original scale. The factor loadings of each item were above 0.70, and the cumulative variance contribution to the scale was 71.88 %. The Confirmatory factor analysis showed the good model indicators: $x^{"}/df$ =1.508, RMSEA=0.41, GFI=0.934, AGFI=0.912, NFI=0.953, TLI=0.981, CFI=0.984. The results of the study show empirical evidence of validity and reliability of CLCQ-IP can be highly recommended to be widely used among Chinses HCWs.

Keywords: Infection prevention climate; Questionnaire; Healthcare workers; Reliability; Validity

Antimicrobial Stewardship & Healthcare Epidemiology 2025;5(Suppl. S1):s14
doi:10.1017/ash.2025.114

The impact of hospital wide measures to reduce mupirocin resistance among methicillin-resistant *Staphylococcus aureus* in a Singapore hospital

HML Oh[1] and J Chen[1]
[1]Department of Infectious DiseasesChangi General Hospital, Singapore

Introduction: Methicillin-resistant Staphylococcus aureus (MRSA) is a leading cause of healthcare associated infections. Colonization with MRSA increases the risk of subsequent nosocomial infection. The primary concern regarding widespread use of mupirocin is the emergence of mupirocin resistance. A prospective cross-sectional study in Singapore in 2013, found mupirocin resistance to be 31.6% in Changi General Hospital (CGH). Annual usage of mupirocin (g) in CGH was 36870 and hospital-onset MRSA bacteremia was 1.1/10,000 patient-days in 2013. **Objective:** To study the impact of hospital measures to reduce mupirocin resistance among MRSA by detection of mupirocin resistance in screening isolates. **Method:** Changi General Hospital is a 1000 bedded acute care hospital. Hospital wide measures were instituted in CGH to reduce mupirocin resistance in MRSA included a) universal body wash with Octenidine for all hospitalized patients in the wards with MRSA cubicles b) 2% mupirocin ointment removed from formulary (available for nasal decolonization only) A study was conducted on MRSA screening isolates from the Microbiology Laboratory between May and September 2019. These were obtained by swabbing nasal, axilla and groin on all newly admitted patients as part of an active surveillance program since 2013. The swabs were streaked onto MRSA[i]selective media plates which were incubated at 35 ° C for 20 hours and stored at 4 °C. E-test was performed to determine the susceptibility and minimum inhibitory concentration (MIC) of MRSA isolates to mupirocin, oxacillin and vancomycin, following the CLSI guidelines for S. aureus. MPCR (multiplex polymerase chain reaction) assay was used for the simultaneous identification of *ileS*-2 (primers MupA and MupB) and mecA (primers MecA1 and MecA2). PCR amplification of *ileS*- 2 gene for high level mupirocin resistance and Mec A gene was performed on Touch thermal cycler. **Results:** 200 MRSA isolates were tested. E-test revealed 5 isolates were detected to be High Level mupirocin-resistant (2.5%) and 69 isolates were detected to be oxacillin-resistant (74%). The MPCR assay detected mecA gene in 100% and *ileS*-2 gene in 3 isolates (1.5%). **Conclusion:** Our study indicated the low prevalence of high level mupirocin resistance among MRSA screening isolates in 2019 in CGH. This suggested that the hospital wide measures to reduce mupirocin resistance were effective.

Antimicrobial Stewardship & Healthcare Epidemiology 2025;5(Suppl. S1):s14
doi:10.1017/ash.2025.115

Antimicrobial effect of atomized Ionless^{TM} hypochlorous acid water in nursing care facilities and facility shuttle vehicle

Hideki Katayama[1], Miho Miura[1] and Hiroshi Watanabe[1]
[1]Division of Infection Control and Prevention Kurume University Hospital

Objectives: Japan is becoming a super-aging society, with people aged over 65 years old accounting for 28.9% of the total population. Therefore, nursing care facilities have significant implications in contemporary Japanese society. In those facilities, it is important to clean and disinfect the environment in order to prevent the spread of infection to the residents. Thus, the aim of this study was to verify the disinfection effect of atomizing IONLESS^{TM} hypochlorous acid water (CLFine^{TM}) as a newly efficient disinfection method of environment by evaluating its antimicrobial effect against *Staphylococcus aureus* in two nursing care facilities and one facility shuttle vehicle. **Methods:** The bacterial suspension of *Staphylococcus aureus* was dripped onto petri dishes, and they were used as test carriers after drying. The test carriers were allocated in the area of interest (six sites for Facility A and B, two sites for shuttle vehicle), and then CLFine^{TM} was atomized by ultrasonic humidifier so as to adjust the atmospherically available chlorine concentration to 0.03 ppm. The test carriers were collected 3 and 5 hours after atomization of CLFine^{TM} followed by evaluation of the viable bacterial counts. **Results:** In Facility A and B, antimicrobial effect of 1.68 to 3.79 LogR and 0.98 to 2.76 LogR were observed 5 hours after atomization, respectively. In shuttle vehicle, antimicrobial effect of 2.70 to 6.32 LogR were observed 5 hours after atomization. **Conclusions:** The atomization of CLFine^{TM} has also been suggested to be useful as a control measure against aerosol infections. Therefore, it is expected to be applied as a non-touch disinfection method in addition to regular wet cleaning in nursing care facilities.

Antimicrobial Stewardship & Healthcare Epidemiology 2025;5(Suppl. S1):s14
doi:10.1017/ash.2025.116

Improving surgical instrument cleaning processes through collaborative efforts between central sterile supply department and operation room

Hsu Xiu-Yue and Lin Li-Hua
Taipei Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation

Objectives: The development of medical technology has led to increasingly intricate surgical instruments, varying in types and structures. This complexity has posed challenges in the instrument reprocessing.The Emergency Care Research Institute in the United States has continuously issued alerts regarding the reprocessing of instruments or endoscopes from 2013~2020, It is evident that failure to perform thorough cleaning in accordance with the standards may result in organic debris on the instruments, posing the risk of infection or even death to patients **Methods:** We