The central line (CL) bundle interventions are important for preventing central line-associated bloodstream infections (CLABSIs), but a modeling method for testing the CL bundle interventions within a health systems framework is lacking” Gilmartin et al (2016).

Abstract:

BACKGROUND: The central line (CL) bundle interventions are important for preventing central line-associated bloodstream infections (CLABSIs), but a modeling method for testing the CL bundle interventions within a health systems framework is lacking.

OBJECTIVES: Guided by the Quality Health Outcomes Model (QHOM), this study tested the CL bundle interventions in reflective and composite, latent, variable measurement models to assess the impact of the modeling approaches on an investigation of the relationships between adherence to the CL bundle interventions, organizational context, and CLABSIs.

METHODS: A secondary data analysis study was conducted using data from 614 U.S. hospitals that participated in the Prevention of Nosocomial Infection and Cost-Effectiveness Refined study. The sample was randomly split into exploration and validation subsets.

RESULTS: The two CL bundle modeling approaches resulted in adequate fitting structural models (RMSEA = .04; CFI = .94) and supported similar relationships within the QHOM. Adherence to the CL bundle had a direct effect on organizational context (reflective = .23; composite = .20; p = .01) and CLABSIs (reflective = -.28; composite = -.25; p = .01). The relationship between context and CLABSIs was not significant. Both modeling methods resulted in partial support of the QHOM.

DISCUSSION: There were little statistical, but large, conceptual differences between the
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reflective and composite modeling approaches. The empirical impact of the modeling approaches was inconclusive, for both models resulted in a good fit to the data. Lessons learned are presented. The comparison of modeling approaches is recommended when initially modeling variables that have never been modeled or with directional ambiguity to increase transparency and bring confidence to study findings.

Reference:


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