european
IMPLEMENTATION EVENT

Poster – #EIE2021

Is a quality improvement initiative feasible in a resource-constrained context? Prevention of Central Line-Associated Bloodstream Infections in one Greek medical intensive care unit: A before-and-after study

*Presenter: Dr Katerina Iliopoulou (King's College, London) – **U.K.***

*Co-authors: Professor Janet Anderson (City University, London) & Dr Tina Day (King's College, London) – **U.K.***

Research aim

Conducted in a ten-bed medical, intensive care unit (ICU) within an urban, university hospital and involving critical care physicians and nurses, this study examined the effectiveness of a multifaceted, theory-based intervention on Central Line-Associated Bloodstream Infections (CLABSIs) prevention considering behavioural determinants and contextual influences.

Methods

A before-and-after design was employed. The study was conducted in a ten-bed intensive care unit (ICU) within an urban, university hospital. Participants included critical care physicians and nurses. Data collection included survey questionnaires and non-participant observation (structured observation and field work). Specifically, the study examined at baseline CLABSIs and adherence rates, behavioural determinants (self-efficacy, behavioural intention, attitude, subjective norms and behavioural beliefs) of critical care physicians and nurses and contextual influences (culture, leadership and evaluation of practices). A theory-based intervention was developed to improve CLABSI prevention and assessed its impact on CLABSIs and adherence rates, behavioural determinants and contextual factors. The six-month intervention involved environmental changes to aid implementation of practices, education, improvement of skills, evaluation of CLABSI preventive practices, feedback, changes to policies to improve teamwork and leadership, persuasive communication and reminders.

Key findings

CLABSIs rates during the six-month intervention (10.6/1000 catheter-days) and post-intervention period (8.7/1000 catheter-days) were not significantly reduced ($p=.051$). Nurses' adherence to central venous catheter (CVC) handling led to mostly positive outcomes ($p<0.0001$), while physicians' adherence to CVC insertion remained excellent (≥95%) pre- and post-intervention. Scores in the knowledge test were significantly improved ($p<0.001$) in ICU personnel during and at the end of the intervention. Physicians and nurses' beliefs about the positive outcomes following implementation of CLABSI preventive practices were strengthened after the intervention ($p<0.001$). The intervention also improved ICU's culture ($p=0.03$), while ICU nurses perceived significantly higher leadership ($p=0.001$), evaluation of practices ($p=0.003$) and unit's readiness to implement evidence-based practices ($p=0.001$).

Discussion

The discussion will centre on the use of randomized controlled studies in quality improvement interventions and the sustainability of quality improvement interventions.