Public Abstract

First Name:Shaghayegh

Middle Name:

Last Name:Parhizi

Adviser's First Name:Linsey M.

Adviser's Last Name:Barker Steege

Co-Adviser's First Name:Luis

Co-Adviser's Last Name:Occeña

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Title:MEASURING NURSES RESPONSE TO CONFIGURATIONS OF WORK SYSTEM PARAMETERS A DATA MINING APPROACH

Medical error, patient safety and nurses' performance are some of the critical concerns within healthcare systems. Several factors contribute to nurses' performance and patient safety outcomes including fatigue, sleepiness, work system parameters, workload, and burnout and job satisfaction.

Furthermore, because of a shortage of nurses, working nurses are often experiencing high workloads. They often work in 12- hour shifts and/or consecutive night shifts without receiving enough sleep or recovery. Thus, they frequently are fatigued and suffer from sleep deprivation, which again is negatively associated with patient safety, nurse well-being, and nurse satisfaction. Therefore, health care researchers and decision makers are interested in developing policies and tools that help decrease nurses' errors and increase their performance.

Thus, there is a need for a promising and innovative approach to understanding nurse fatigue and its causes and consequences that is able to capture all relevant dimensions and the dynamic nature of the problem. This study aimed to address this need. In the first step, data were collected from a private hospital and prepared for the study. Next, a data mining technique was applied to uncover the patterns and associations among contributing factors that affect performance and patient safety outcomes. Finally, a model was developed to measure nurses' responses to different work system parameters and stressors. The results of this study could be used to help decision makers to make more precise and accurate decisions about nurses' assignment to work schedules and work system design.