The Impact of Shift Length on Mood and Fatigue

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Background: Physical work demands, long work hours and persistent thoughts of work lead to disturbed sleep and decreased sleep time. Disturbed sleep and sleep loss contribute to mood changes and fatigue. Fatigue contributes to an increase in work related injuries, car crashes during commutes to and from work, and diminished health and wellbeing for the nurse. Additionally, fatigue has an impact on patient care errors.

Purpose: The purpose of this study is to obtain a baseline measurement of sleep, physical activity, and work hours and to relate these to the fatigue and mood states of Registered Nurses. The results of this study will be used to develop mitigation strategies to decrease nurse fatigue, improve mood, and improve work/life balance.

Methods: Eighty Registered Nurses working 12-hour day shift (n=20), 12-hour night shift (n=20), 8-hour day shift (n=20) and 8-hour evening shift (n=20) will be recruited from randomly selected units in a pediatric inpatient hospital. The Profile of Mood States (POMS) tool will be used to measure the subject's mood based on a fivepoint Likert scale. The tool is based on six subscales to measure mood and will be completed at the start of the study and the beginning and end of each worked shift. The 15-item Occupational Fatigue Exhaustion Recovery (OFER) tool will be used to determine chronic and acute fatigue, and inter-shift recovery of the nurse. This will be completed at the end of the study. The Fitbit Flex will be used to measure activity, total sleep time and sleep quality for 24 hours a day for seven days. The Fitbit Flex is both a sleep and activity actigraph. Fitbit data are uploaded wirelessly to a Fitbit website and activity data are recorded in one minute epochs. Sleep quality is computed using a standard algorithm based on sleep measurement data. Both activity and summarize data can be downloaded from the website using an API protocol.

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University of Cincinnati
15th Annual
Pilot Research Project Symposium
October 9-10, 2014

Hosted by: The University of Cincinnati Education and Research Center
Supported by: The National Institute for Occupational Safety and Health. (NIOSH) Grant #: T42/OH008432

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