



MARQUETTE
UNIVERSITY

HELEN WAY KLINGLER
COLLEGE OF ARTS AND SCIENCES

Department of Mathematics, Statistics and Computer Science

COLLOQUIUM ANNOUNCEMENT

Exploration of a Data Science Methodology to Predict High Risk Behavior for Veterans.

Md Fitrat Hossain

Mathematics, Statistics, and Computer Science Department

Marquette University

3:30 PM, Thursday, October 5, 2017

Cudahy Hall, Room 401

Abstract

Estimates show 15-20% of military veterans in US are diagnosed with posttraumatic stress disorder (PTSD). Veterans suffering from PTSD are more likely to engage in risky behaviors such as alcohol abuse, impulsivity and aggression, leading to negative health outcomes. In 2015, an actuarial algorithm was developed for predicting suicide in the 12 months after US Army soldier inpatient treatment of a psychiatric disorder. Data has been collected from a community-based study which assessed the impact of a 12-week veteran peer mentorship program at intake, 6-week midpoint and 12-week discharge, with a focus on PTSD symptom change using the PCL-5. 107 veterans participated at baseline, 64 at midpoint, (40% loss) and 40 at discharge (63% loss). Systematic differences in PTSD symptoms between completers and non-completers were analyzed using Wilcoxon rank sum test. No significant differences were found, $W = 1273$, $p > 0.05$. Repeated measures ANOVA found a significant drop in mean PCL-5 score from baseline to discharge, $F(2, 78) = 3.559$, $p < 0.05$. For participants scoring negative for PTSD at intake ($PCL-5 < 33$), there was no significant change at discharge, $F(2, 38) = 0.194$, $p > 0.05$. However, for those who met the diagnostic cut score for PTSD ($PCL-5 > 33$), there was a significant decline in PTSD symptoms at discharge, $F(2, 38) = 5.939$, $p < 0.05$. We also tested the four PCL-5 symptom clusters: intrusive thoughts, avoidance, negative affect and arousal reactivity. Using repeated measures ANOVA and post-hoc tests, we compared these clusters at three-time points. All symptom clusters improved from baseline to discharge except avoidance. These findings suggest that this intervention is clinically effective.

1313 W. Wisconsin Avenue, Cudahy Hall, Room 412, Milwaukee, WI 53201-1881

For further information: see <http://www.marquette.edu/mscs/resources-colloquium.shtml>

or contact Dr. Daniel Rowe #414-288-5228, daniel.rowe@marquette.edu

*POST COLLOQUIUM REFRESHMENTS SERVED IN
CUDAHY HALL, ROOM 342 AT 4:30 P.M.*