ABSTRACT

PREDICTING MENTAL HEALTH CRISIS IN VETERANS: EARLY WARNING SIGNS, PRECURSORS AND PROTECTIVE FACTORS

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Mental Health (MH) conditions have recently increased to a large extent due to demographic changes. Posttraumatic Stress Disorder (PTSD) is one of the most common mental health disorders prevalent in US. PTSD is even more troubling at double the rate in combat veterans leaving their service compared to general population. The more severe PTSD symptoms are, high likely to engage in risk taking behaviors. Severity of PTSD is associated with risk taking behaviors such as substance abuse, non-suicidal self-injury, and sexual risk behaviors. Psychological disorders are often preceded by early warning signs and recognizing the early warning signs of PTSD will help in preventing the returning or worsening of PTSD symptoms. Ecological momentary assessment (EMA) studies are more sophisticated in tracking fluctuations of symptoms real-time, and they are effective in monitoring for crisis events in veterans.

Mobile applications are commonly used means to gather such EMA information from participants. Our research focuses on developing interpretable machine learning (ML) models using EMA data from natural settings to predict high PTSD risk in veterans and those who engage in risky behaviors. Findings from these models can be integrated with existing m-health frameworks to generate text alerts to the mentors when the crisis patterns are observed in their mentees. Such an integrated crisis prediction and alerting system would add benefit to peer mentors to plan intervention.