Master’s Thesis Presentation

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“An Application of Modeling Variation in Intensive Longitudinal Data of Behavioral and Mental Health Responses from an Undergraduate Student Population”

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Abstract

Ecological momentary assessment (EMA), also referred to as intensive longitudinal data, has become a useful family of data collection procedures to evaluate the real-time experiences of study subjects with greater frequency and volume. These approaches are often used in the social and health sciences to obtain in-the-moment information to examine relationships between subject behaviors and health outcomes. Extensions of the classical linear mixed effects model, primarily the mixed effect’s location scale (MELS) model have been developed to properly handle the properties of this type of data and to allow direct modeling of the variance as a function of covariates. One particular study was conducted over a five-year period across two cohorts of undergraduate students to analyze how student behaviors and mental health evolve over the course of the four-year undergraduate experience. This analysis utilizes the dataset collected in that study to further its findings by creating models for the between- and within-subject variances of the mental health EMA responses to uncover key indicators that drive short- or long-term variations in depression and anxiety, self-esteem, stress, and social levels. Additionally, these models use key behavioral features (phone usage, physical activity, sleep duration) to examine their relationships with the trends and variations of the EMA outcomes. The findings help characterize the factors that influence the undergraduate experience to give insight into indicators and potential intervention to support student wellbeing.