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Title: Digital tools for mental wellbeing intervention

Abstract

Mental health is of serious global concern. Young adults are a demographic where mental health and wellbeing has been found to be in a state of crisis.

Everyday devices such as smartphones and consumer grade wearables, for example a Fitbit device, are equipped with a variety of sensors that collect data which has the potential to provide contextual insights into daily lived experience of their users. Mobile smartphones are ubiquitous, particularly in the young adult demographic. Previous studies have used mobile phone sensor and activity data as a proxy for social connectedness, sleep, and physical activity. Aspects of sleep and physical activity are known to impact mental health and can be easily adjusted. Social connectedness has been found to have a protective effect on mental wellbeing. However, social media usage (including but not limited to time spent) has been indicated in mental health problems.

My research area focuses on the use of digital tools for mental wellbeing intervention. I have planned a study to investigate the relationship between sleep, physical activity, and phone data, on mental wellbeing and mood. Along with sleep and physical activity data from a wearable device, I intend to capture lock and unlock events, social media, music, phone, and messaging application usage from an Android mobile phone. I have created a custom mobile application running on the Android platform to capture the phone activity data as well as self-reported mental wellbeing and mood data. The wearable data will be downloaded from the wearable device user interface and uploaded to a secure shared location. Statistical and machine learning techniques will then be applied to the data with the aim of better understanding key contributory factors associated with changes in mood and mental wellbeing over time. The target demographic for this research is the young adult population, for which purpose we will be recruiting volunteers from the Maynooth University student population.