

Understanding, Predicting and Preventing Self-harm

Background

Non-Suicidal Self-Injury (NSSI) is in the top five causes of medical admissions, with 19,000 adolescents attending emergency departments for NSSI in 2015/16; a 14% rise compared with preceding two years.

It is thought that up to 40% of youths experiencing NSSI do not seek help due to stigma, and fear of negative reactions. Traditional face-to-face interventions lack capacity to reach these adolescents. Studies identify preference towards online information, due to the anonymity and acceptance it affords. Young people access education, social interactions and entertainment primarily via their smartphone, thus making it a useful device to support access to resources; promote help-seeking and self-management behaviours.

Project aims

Our aim is to design and develop a context-aware mobile application, that learns from user's daily online and physical activities, to flag-up likely early warning signs of self-harm. The app can then offer interventions to support the user in times of need. We will look into individual's relationships and social interactions to understand the context of the individual's experiences and mood dysregulation and identify early warning signs. The tasks of the larger project include design and development of an app that will:

- 1) collect user's 'cyber' and 'physical' social interaction data such as location and app usage
- 2) collect self-report data
- 3) predict occurrence of NSSI thoughts using semi-supervised machine learning
- 4) prevent development of NSSI thoughts into action by sending an intervention



Activities

- Scoping workshops with adolescents to better understand the context in which they experience self-harm: coping mechanisms, support resources, online presence in terms of self-harm, views on the role of technology for managing self-harm, data privacy and trust
- Scoping workshop with clinicians/counsellors to explore the types of interventions to be offered
- Review of existing context-aware mobile applications in self-harm
- Design workshop with all participants to elicit system requirements, create wireframe prototypes and finalise the design