

Project Details	
Project Code	MRCNMH25Br Mars
Title	Investigating the relationship between substance use and self-harm using multiple methods
Research Theme	Neuroscience & Mental Health
Summary	<p>This interdisciplinary PhD will provide transferable skills in epidemiology, advanced statistical methods, interviewing, study design, recruitment, and management. The project will provide an in-depth understanding of the relationship between substance use and self-harm, to inform the development of interventions. Associations will be explored i) over the long-term (from adolescence to adulthood) using data from a world-leading birth cohort study, and ii) over the short-term (hours/days/weeks), using an innovative digital diary approach called Ecological Momentary Assessment (EMA). Participants will complete regular surveys in real time using their Smartphones and some will be interviewed to gain deeper insights into their experiences.</p>
Description	<p>Self-harm is a major public health concern. It is the strongest predictor of suicide and is particularly common among young people; a group in which rates of self-harm and suicide are rising. One risk factor for the development of self-harm in adolescents is substance use and research has also shown that young people who self-harm are more likely to have substance use disorders in adulthood. However, we know little about how the relationship between substance use and self-harm changes as young people get older.</p> <p>The transition from adolescence to adulthood is a critical period, marked by increasing independence and important changes in brain development, relationships, and education/occupation. We also don't fully understand the reasons why self-harm and substance use are related (termed mechanisms or mediators), or how differences between individuals such as gender, ethnicity, personality or mental health problems may affect this relationship. It is also likely that there are important differences across generations, due to changes in society and attitudes with recent research suggesting that today's adolescents are more likely to engage in self-harm but less likely to use substances such as alcohol and cigarettes than previous generations. Addressing these knowledge gaps is critical to help us identify ways we can intervene to reduce self-harm and substance use in the future.</p> <p>This interdisciplinary PhD will combine advanced statistical analysis of longitudinal data, with qualitative interviews to provide an in-depth understanding of the relationship between substance use and self-harm. Associations will be explored both over the long-term (from adolescence to adulthood) using cohort data, and over the short-term (hours/days/weeks) using an emerging new method in mental health research called Ecological Momentary Assessment (EMA) The study will address 3 research objectives:</p> <p>Objective 1: Examine the long-term relationship between substance use and self-harm.</p> <p>This objective will use data from the Avon Longitudinal Study of Parents and Children (ALSPAC); a world-leading birth cohort study of over 14,000 participants born in 1991-1992. ALSPAC has collected information on substance use and self-harm multiple times from age 11 to age 30. The</p>

	<p>student will use this data to investigate i) whether substance use is associated with greater persistence of self-harm, ii) potential mechanisms (mediators) underlying this relationship that could help inform interventions, and iii) how alcohol combines with other exposures (moderators) to increase or decrease risk. For example, the relationship between substance use and self-harm may be different for those with and without depression. The student will learn and apply advanced longitudinal techniques such as structural equation modelling and multiple imputation for missing data. This objective can be adapted to the students' own interests, e.g. through their choice of mediators and moderators (with guidance from the supervisory team).</p> <p>Objective 2: Examine the short-term relationship between substance use and self-harm using EMA.</p> <p>EMA is a diary-based method, involving repeated and frequent assessment of feelings and behaviour in an individual's natural environment, typically using their own Smartphone. The student will use this data to investigate i) how the use of different substances (and urges to use them) varies over time within individuals with a history of self-harm. For example, existing EMA research has shown that thoughts of self-harm can change quite a lot throughout the day and that this pattern can be quite different for different people, ii) how much overlap there is between these behaviours, iii) how they relate to one another (e.g. does drinking alcohol at a particular time increase the likelihood that a person will harm themselves and iv) identify other important short-term risk factors (these can be chosen by the student). The student will design the EMA survey (with input from lived experience contributors), recruit participants, conduct the study, and analyse the data using multi-level modelling.</p> <p>Objective 3: Conduct qualitative interviews with participants in the EMA study.</p> <p>This will enable a deeper understanding of the relationship between substance use and self-harm, why this occurs, and how it might be different for different groups. The student can also tailor the topic of these interviews to their interests (for example, to explore differences in attitudes to self-harm and substance use in different generations). This data will be coded into themes and analysed using thematic analysis.</p> <p>The project will generate robust new evidence on the relationship between substance use and self-harm and provide a crucial first step for informing future intervention development. The student will develop expert knowledge and a wide range of skills relevant for understanding health and behaviour: these will be translatable into a variety of future careers such as research/academia and clinical psychology as well as other health and data related careers.</p>
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