Project Details	
Project Code	MRCNMH24Br Mars
Title	Intergenerational transmission of self-harm thoughts and behaviors
Research Theme	Neuroscience & Mental Health
Summary	This interdisciplinary PhD project will provide training in epidemiology, genetics, and advanced longitudinal methods. Data from two cohort studies will be used to i) investigate the association between parent and child self-harm thoughts and behaviors ii) identify mechanisms and protective factors that could help to inform preventative interventions, and iii) explore the extent to which transmission between parent and child is driven by shared genetic effects.
Description	Each year about one million people die by suicide worldwide. Moreover, for each suicide death, it is estimated that approximately 30 individuals attempt suicide, and many more will experience thoughts of self-harm. Research has consistently suggested that offspring of parents with self-harm thoughts and behaviors (STB) are at greater risk for STB themselves. However, existing research has tended to be based on cross-sectional designs or used population-based registers which focus only on those known to services. Prior work has also often focused on the impact of parental death by suicide, rather than looking at the full range of STB. It is currently unclear whether different types of STB in parents (such as suicidal thoughts, non-suicidal self-harm or suicide attempts) are differentially associated with offspring outcomes. Suicidal behavior is known to be heritable, and it is likely that intergenerational effects are driven by a combination of genetic and environmental pathways. However, little attention has been paid to the mechanisms ('mediators') underlying the association between parent and offspring STB. It is also important to consider possible protective factors (such as peer or family support) that may moderate associations ('moderators'). This information can help to inform prevention and intervention strategies. The proposed study will address these knowledge gaps using data from two complementary cohort studies – the Avon Longitudinal Study of Parents and Children (ALSPAC) and the Early Prediction of Adolescent Depression Study (EPAD). ALSPAC is a world-leading birth cohort study of over 14,000 participants born in 1991-1992, who have been followed up for over 30 years. EPAD is a high-risk cohort of the offspring of parents with recurrent depression. It includes 337 families who have been followed up four times over a 10-year period using multi-informant interview-based assessments of parental and child psychopathology, as well as a battery of cognitive tests. It can be challenging to tease apart effects of STB from depression as they commonly co-occur. Therefore, investigating associations in a second, high-risk cohort of children (EPAD) who have all been exposed to recurrent parental depression will help to understand the added risk of parent STB. Both cohorts have repeated measures of STB, enabling investigation of the direction of effects between parent and offspring STB and allowing examination of factors such as timing and chronicity of symptoms (via derivation of parent/child trajectories). Longitudinal data is also required for mediation analysis, which will be used to identify possible mechanisms (including psychological, biological, social, and cognitive factors) that could inform intervention development. In addition, ALSPAC has genetic data on both

	parents and children. This makes it possible to parse genetic risk for suicide attempts into that which is transmitted and not transmitted from the parent to the child, thus providing a useful framework for disentangling shared genetic and environmental effects of parental STB on child outcomes. The study will address 3 research objectives: 1. Use longitudinal data to explore directions of cause and effect between parental STB and offspring STB. 2. Test putative mediators (mechanisms) and moderators (protective factors) of the relationship between parent and offspring STB. The selection of mediators and moderators will be informed by the literature and can be tailored to the student's interests. 3. Use genetic data from parents and offspring to investigate the extent to which STB in parents and children are due to shared genetics. This PhD project spans the disciplines of psychology, genetics, and epidemiology. The candidate will develop skills across a range of sophisticated genetic and longitudinal analysis methods, including structural equation modelling, mediation analysis, multiple imputation, and derivation of Polygenic Risk Scores.
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