



Mechanisms of treatment seeking and recovery in cannabis use disorder

Theme: Neuroscience & Mental Health

Reference: MRC19NMHBa Freeman

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Cannabis use disorder – a problematic pattern of use causing clinically significant distress – affects 13 million people worldwide. This creates a global burden of disease of two million disability adjusted life years, which is set to rise further as cannabis becomes available as a legal drug in the United States, Canada and beyond. The majority of people with a cannabis use disorder will not seek professional help. However, demand for cannabis treatment has increased dramatically in Europe, accounting for more first-time clients than any other drug. Psychosocial interventions have limited efficacy, and there are no pharmacotherapies available.

This project will address these challenges in a series of complementary interdisciplinary studies.

The first will use rich prospective data from the Avon Longitudinal Study of Parents and Children (ALSPAC) and recently established health data linkage (Bristol). It will explore the course of cannabis use disorder onset, cessation, and prevalence of treatment-seeking in UK adolescents. It will identify which demographic, mental health and cognitive factors may influence the pathway from cannabis use disorder to health service engagement.

Study 2 will draw on a recently completed MRC-funded phase II clinical trial for cannabis use disorder led by Dr Freeman. This trial tested the effects of four-week cannabidiol treatment (CBD; a non-intoxicating cannabinoid that is emerging as a promising new medicine) for reducing cannabis use. Following training in clinical trial research (Exeter), the student will identify which cognitive processes (including salience attribution, response inhibition, executive functioning and working memory) underpin the promising treatment effects that have emerged from this clinical trial.

Study 3 will collect new data to investigate the cognitive mechanisms identified in study 2 (and/or published literature, as a contingency plan) in the laboratory. Mechanistic effects of single dose CBD vs. placebo will be probed further using electroencephalography (EEG) and eye tracking (Bath) in the same target population as study 2. This will provide validation of a novel experimental medicine platform for testing new treatments for cannabis use disorder.

Information generated will support GW4 collaboration, funding applications (MRC, NIHR), and industrial partnership (STI pharmaceuticals). Impact will be maximised through public involvement and engagement, and the applicants' links with drug treatment services (Bristol Drugs Project), the British Association for Psychopharmacology, the Society for the Study of Addiction, the European Monitoring Centre for Drugs and Drug Addiction, and the Science Media Centre. Cannabis cessation during adolescence can abolish a major risk factor for psychosis, and offset poor life trajectories in cognitive, educational and occupational outcomes. Therefore, understanding health service engagement and treatment efficacy in this population could have a transformative impact on lifelong mental health.



For background reading on the subject area of this PhD, the following review article is recommended:

Curran, H. V., Freeman, T. P., Mokrysz, C., Lewis, D. A., Morgan, C. J., & Parsons, L. H. (2016). Keep off the grass? Cannabis, cognition and addiction. *Nature Reviews Neuroscience*, 17(5), 293-306.

Please do not hesitate to contact the lead supervisor by email with any questions or for an informal discussion about this project.

IMPORTANT: In order to apply for this project, you should apply using the DTP's online application form: <https://cardiff.onlinesurveys.ac.uk/gw4-biomed-mrc-dtp-student-2019>

More information on the application process may be found here:
<http://www.gw4biomed.ac.uk/doctoral-students/>

APPLICATIONS OPEN ON 24 SEPTEMBER AND CLOSE ON 23 NOVEMBER 2018.

You do NOT need to apply to the University of Bath at this stage – only those applicants who are successful in obtaining an offer of funding from the DTP will be required to submit an application to study at Bath.