Project Details	
Project Code	MRCNMH26Br Atan
Title	Transforming Obesity Care in Idiopathic Intracranial Hypertension: A Person-Centred, Multidisciplinary Approach
Research Theme	NMH
Project Type	Wet lab
Summary	Idiopathic intracranial hypertension (IIH) is a serious neurological condition linked to obesity—but weight loss isn't simple when disordered eating, trauma, and mental health challenges are in the mix. This innovative PhD project blends clinical, psychology, and imaging tools to explore how tailored, person-centred care can improve outcomes for people with IIH. You'll help shape holistic strategies that not only support disease remission but could revolutionise obesity care more broadly. Ideal for candidates passionate about mental health, neuropsychology, and making a real-world impact.
Description	Papilloedema is defined as optic nerve swelling caused by intracranial hypertension. Although it can be the first sign of life-threatening diseases like brain tumours and hydrocephalus, most cases are idiopathic with no obvious structural abnormalities identified by neuroimaging (MRI/CT). The main morbidities of idiopathic intracranial hypertension (IIH) are headaches and vision loss from papilloedema, leading to UK healthcare and economic costs exceeding £50million per year. Obesity is the main modifiable risk factor since IIH prevalence is 10.9 per 100,000 of the UK population and 8-9 times higher among women living with obesity. Due to the strong association with obesity, the medical management of IIH normally involves weight loss combined with medications like acetazolamide that inhibit cerebrospinal fluid (CSF) production and vasodilate the cerebral vasculature, thereby increasing cerebral venous outflow, to lower intracranial pressure (ICP). However, clinical trials that have directly compared patients managed by weight loss alone versus acetazolamide have shown those who lose weight have better visual outcomes. Headaches and vision loss from papilloedema can seriously impair the quality of life (QOL) and mental health of people living with IIH. Furthermore, people with IIH often have past histories of disordered eating, mental health and trauma. These interactions between psychological and neurological morbidity in people with IIH can make their weight management more challenging. Therefore, the key research question of this proposal is whether a person-centred weight management plan that addresses underlying psychological morbidities will lead to better disease outcomes than weight management programmes currently available to IIH patients under NHS care. Psychological input is only provided by NHS weight management programmes above tier 2 to people with body mass index (BMI) >40, and many IIH patients aren't eligible or do not have access to tier 3 services in their region. The supervisory team have conducted pilot work (with ethical approval) to compare the headache and vision symptoms, QOL, eating behaviour, mental health, trauma history, and food/nutritional intake of IIH patients compared with healthy people matched for BMI via online clinically-

	validated questionnaires (available in REDCap), behavioural tasks (Gorilla), and a 24-hour food recall task (Intake24). In so doing, we have set up a South West IIH network that includes hospitals in Bristol, Bath, Cardiff, Exeter, Taunton, Truro, to identify eligible participants for the study and a Public and Patient Involvement and Engagement (PPIE) group. During their studentship, the student will build on this previous work to address the following specific objectives: 1. What is the prevalence of past exposure to disordered eating, mental health and trauma in people with IIH compared with the general population or BMI-matched controls? 2. How do these exposures influence IIH headache and visual symptom severity? 3. Does the provision of psychological support to address disordered eating, mental health and past trauma (in addition to standard nutritional and physical activity advice) improve IIH disease outcomes? Primary disease outcomes will be determined from objective measurements of weight/BMI and visual function/optic nerve swelling in IIH patients attending hospital clinics as part of their standard NHS care; secondary outcomes will be determined using the online tools described above to measure headache and vision symptoms, QOL, eating behaviour, mental health, and food/nutritional intake. The student will conduct a scoping systematic review of the prevalence of psychological morbidity in people with IIH and the interactions between psychological and neurological morbidity on their symptom severity, QOL and weight management; and they will review the results of our previous pilot work to answer these research questions. Next, they will consult our PPIE group and supervisory team to co-design a prospective research study that investigates the effectiveness of a person-centred multidisciplinary weight management plan that addresses the underlying psychological morbidity of IIH patients. The student will continue to work with the PPIE group to ensure the study addresses their perspectives and to help with the dissemination and communication of the results. Additionally, the student may have the opportunity to enroll in courses/webinars on the interpretation and analysis of neuroimaging data with the aim of conducting pilot work on the effects of weight management combined with acetazolamide on the CSF dynamics and cerebral vasculature of IIH patients using state-of-the-art neuro-imaging techniques (i.e. phase contrast, arterial spin labelling, fMRI) at the CUBRIC, Cardiff, in collaboration with Kevin Murphy (see question 51). The project will make use of the south west IIH network to identify participants and measure disease outcomes via routinely collected NHS data (weight/BMI, visual function/optic nerve swelling). It involves collaborations across GW4 in Eye and Brain research (DA: Bristol), Nutrition and obesity research (JHS&KC: Bristol BRC Diet & Physical activity theme), psychology (NL: Exeter) and neuroimaging (KM: Cardiff). We anticipate this research will lead to novel insights into how interactions between psychological and neurological morbidity influence IIH disease severity and weight management. The results may have wider implications for obesity management and research.

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