New technology for the remote assessment of anxiety in older people

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This project sits within the ACRC Academy, a dedicated Centre for Doctoral Training, co-located with the Advanced Care Research Centre (ACRC), a new multi-disciplinary research centre at the University of Edinburgh. The ACRC’s students will deliver key aspects of the ACRC research agenda through a new doctoral-level research and training programme that will also equip them for careers across a wide range of pioneering and influential leadership roles in the public, private and third sectors.

The PhD with Integrated Study in Advanced Care is a novel, structured, thematic, cohort-based, programme of 48 months duration. Each PhD research project within the Academy has been devised by a supervisory team comprising academic staff from at least two of the three colleges within the University of Edinburgh. Each annual cohort of around twelve will include students with disciplinary backgrounds spanning from engineering and data science to humanities, social science, business and commerce, social work, medicine and related health and care professions. This unique level of diversity is a key attribute of our programme.

Project

Aim

We will investigate how to use affordable, commercially available devices to measure older people's brain activity at home to assess their level of anxiety.

Objectives

- Review the effects of anxiety on older people’s brain activity and the use of commercially available devices to sense brain activity unobtrusively.
- Design and put in place a protocol to acquire brain activity and anxiety scores from a selected population of older people.
- Apply robust-to-noise data science algorithms to assess the level of anxiety in older people from their brain waves at home.
- Inform current evidence-based interventions towards enabling their implementation via handheld devices (e.g., tablets) to reduce the level of anxiety of older people.

Description

Older adults are vulnerable to mental health problems such as anxiety[1]. These issues may have been exacerbated by recent lockdowns[2], and they have been linked to multimorbidity[3]. Recent technological advances enable the recording of brain activity at home using convenient, unobstructive, affordable devices[4]. This kind of devices can track changes in older people’s brain activity related to emotional responses[5]. We hypothesize this technology can be harness to enable the remote and personalised monitoring of anxiety in older people. This PhD provides an exciting
opportunity to explore this topic and produce feasibility evidence to facilitate future remote interventions.

**Eligibility:**

We are specifically looking for applicants who will view their cutting-edge PhD research project in the context of the overall vision of the ACRC, who are keen to contribute to tackling a societal grand challenge and who can add unique value to – and derive great benefit from – training in a cohort comprising colleagues with a very diverse range of disciplines and backgrounds. We advise prospective candidates to engage in dialogue with the named project supervisor and/or the Director of the Academy prior to submitting an application.

**Recruitment:**

We are running a rolling recruitment process. Projects will be advertised until they are recruited to, and you are advised to apply as early as possible to maximise your chances.

You must read [How to apply](#) prior to application

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**References**


