**Project Title**
Evaluation of the use of behaviour change techniques in delivering Tai Chi to improve quality of life among older people with dementia

**Project Summary**

**Background**
Dementia is an umbrella term used for a collection of diseases of the brain that are progressive and terminal in nature. Approximately 850,000 people in the UK have dementia and this figure is rising in accordance with the ageing of our population. Dementia can affect many parts of an individual’s life as well as their close ones who often become their carer. A particular issue associated with later life is falls. People with dementia are twice as likely to fall and twice as likely to be injured from falling than their cognitively intact peers. There are however ways to reduce the risk of falling and exercise-based interventions such as Tai Chi in particular have been shown to be effective amongst the general population of older people. Tai Chi is an ancient form of Chinese mind-body exercise, where participants carry out smooth and continuous body movements along with deep breathing and mental concentration; equivalent to moderate-intensity exercise and quiet meditation. This form of exercise is particularly suited for people with dementia with the use of slow and repetitive movements.

Funding has been secured from the National Institute for Health Research (NIHR) for Bournemouth University to undertake a randomised controlled trial that will offer Tai Chi to people with dementia. With support of the Peninsula Clinical Trials Unit (PenCTU), a trial team at Bournemouth University led by Dr Samuel Nyman will test the intervention in the Southampton and Bournemouth areas. The study will assess the effectiveness of Tai Chi to improve postural stability (dynamic balance), which is a strong predictor of falls risk. It will also assess the feasibility of conducting a larger trial that will subsequently test the effect of the intervention on preventing falls. One PhD student is already working on the project to qualitatively obtain feedback from people with dementia and their carers on participating in the 20-week Tai Chi intervention.

**The PhD studentship**
The purpose of this BU-funded studentship is to support the trial with everyday management and data collection and to conduct an evaluation of the behaviour change component of the Tai Chi intervention. The evaluation will include focus on quality of life, a secondary outcome of the trial. This studentship will carry out the following research:

1. Psychometric validation of a quality of life scale intended for healthy older people, to see if it can be used directly with people with dementia; the ICEpop CAPability measure for Older people (ICECAP-O).
2. Detailed analysis of older people with dementia’s adherence to the Tai Chi intervention. This will include their attendance at the Tai Chi classes and their participation in daily home-based Tai Chi exercises, and to see whether adherence is correlated with improvements in quality of life measured before and 6 months later at the end of the intervention.
3. Detailed analysis of the completion of the behaviour change components (goal-setting, self-monitoring, action plans, and coping plans), and correlate this with adherence to the intervention.

Along with a detailed review of the existing literature, the student will develop a substantial body of work that will not only help in developing the Tai Chi intervention further, but will help others seeking to promote physical activity and quality of life among people with dementia.
A unique opportunity

This fully-funded PhD studentship provides an excellent training and development opportunity. As well as completing a doctoral thesis with the support of their supervisors, the student will work as part of a wider project trial team. They will have the opportunity to attend regular team meetings and learn more about the processes of conducting randomised controlled trials. They will also benefit from working in the supportive research environments of the Psychology Department’s Behaviour Change Research Centre, the Bournemouth University Dementia Institute (BUDI), Bournemouth University Clinical Research Unit (BUCRU), and the university-wide Graduate School. The student will also be strongly encouraged and supported to disseminate their research in peer-reviewed journals and at international conferences. This studentship would suit a student with an interest in behaviour change techniques, people with dementia, clinical trials, psychometric validation and statistics, and health psychology.

Academic Impact

Overall, the project will be developing new information that will fill a gap in knowledge. Currently, there is a good understanding of the risk factors for falls and how to prevent falls among older people in general. However, the evidence is weak for people with dementia. With Tai Chi, there have been several studies that show promise that it should help improve balance and prevent falls among older people, including older people with dementia. However, previous Tai Chi studies have only piloted interventions with people with dementia. This trial will be the first in the UK to use Tai Chi to improve balance and prevent falls, and the first in the world to test if Tai Chi will help people with dementia in this way. This study will address this gap in knowledge that is very pertinent given that people with dementia are both at an increased risk of falling and an increased risk of sustaining injury from a fall.

The PhD student will make a significant contribution to science through a detailed process evaluation of a novel intervention. It will uncover several important aspects of the trial to help interpret the main trial findings and answer pertinent questions as to how best to deliver interventions among people with dementia living in their own homes. Such information will be highly valuable to researchers and interventionists seeking to provide services and novel interventions for people with dementia to promote physical activity and quality of life. It will also aid the research team as they seek to further the Tai Chi intervention in future projects.

Societal Impact

Overall, the trial will hope to generate evidence on the effectiveness of an intervention that benefits people with dementia. If successful, then the intention is to eventually work toward making the Tai Chi intervention available to people with dementia across the UK. This would lead to great societal impact and benefit all NHS patients with dementia by helping them prevent falls and avoid attending A&E with fall-related injuries. This would in turn benefit carers of people with dementia and reduce costs to the NHS.

The PhD student will provide new information that will be highly useful to people and organisations working with people with dementia in the community. It will generate knowledge that will help them provide more effective services for physical activity promotion and fall prevention, and develop services that are more accessible and appealing to people with dementia and their carers. This will directly contribute to the government’s commitment to making communities and societies dementia friendly.

Training Opportunities

A supportive learning environment

The student will be based in the Psychology Department of the Faculty of Science and Technology. The department currently has over 38 PhD students and 3 postdoctoral researchers. The student will be part of the Behaviour Change Research Centre and will have opportunity of attending regular research group meetings and departmental seminars. In addition to this post, another PhD student is already working on this trial to investigate the views of people with dementia and their carers participating in the Tai Chi intervention using qualitative methods. The successful applicant for the current post will benefit from working alongside this other student and other students in the department. For example, other PhD students currently conducting research relevant to this post and co-supervised by Dr Nyman include: a mixed-method study into psychological recovery from injurious falls among older people in the UK and Poland, and a mixed-method study into improving care for patients with dementia in an acute hospital. Shared PhD office space to facilitate peer support will be provided.
As well as being part of the Psychology Department, the student will be able to join the Bournemouth University Dementia Institute (BUDI) and attend regular meetings, workshops, and training events (e.g. one-day Masterclasses). The student will also be strongly encouraged to actively participate in the Graduate School’s development programme of teaching sessions in research methodology and transferable skills. In addition, the Faculties of Science and Technology (where the Psychology Department is based) and Health and Social Sciences (where BUDI is hosted) have combined expertise in quantitative and qualitative research methods and provide research methods master classes.

**A unique opportunity**

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The funded candidate will work full-time and receive a maintenance grant of £14,000 per annum, to cover their living expenses and have their fees waived for 36 months. In addition, research costs, including field work and conference attendance, will be met. This studentship is an excellent opportunity that would suit a student with an interest in behaviour change techniques, people with dementia, clinical trials, psychometric validation and statistics, and health psychology.

**SUPERVISORY TEAM**

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<tr>
<th>First Supervisor</th>
<th>Dr Samuel Nyman</th>
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<td>Additional Supervisors</td>
<td>Professor Remco Polman &amp; Professor Peter Thomas</td>
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**Recent publications by supervisors relevant to this project**

**Dr Samuel Nyman**


**Professor Remco Polman**


Professor Peter Thomas


**INFORMAL ENQUIRIES**

To discuss this opportunity further, please contact Dr Samuel Nyman via email: snyman@bournemouth.ac.uk

**ELIGIBILITY CRITERIA**

All candidates must satisfy the University’s minimum doctoral entry criteria for studentships of an honours degree at Upper Second Class (2:1) and/or an appropriate Masters degree. An IELTS (Academic) score of 6.5 minimum (or equivalent) is essential for candidates for whom English is not their first language.

**Additional Eligibility**

The post is due to start in September 2016; applicants should be available to start from the middle of September 2016.

It will also be advantageous if the applicant has a clean and valid licence to drive a motor vehicle in the UK.

**HOW TO APPLY**

Please complete the online application form by **Tuesday 3rd May 2016**. Further information on the application process can be found at: [www.bournemouth.ac.uk/studentships](http://www.bournemouth.ac.uk/studentships)

Interviews will be held on Monday 16th May 2016.