

Partner University	Teesside University
Faculty/School/Department/Research Centres	School of Health and Social Care
Supervisory Team: please provide details of first, second, and where relevant, third supervisors for this project, and any external supervisors/advisors, where applicable	
First supervisor	Name: Dr Samantha Harrison http://www.tees.ac.uk/sections/research/health_socialcare/staff_profile_details.cfm?staffprofileid=U0030582
Second supervisor	Name: Prof Denis Martin http://www.tees.ac.uk/sections/research/health_socialcare/staff_profile_details.cfm?staffprofileid=U0022990
Third supervisor	Name: Dr Jon Robinson http://www.tees.ac.uk/sections/research/health_socialcare/staff_profile_details.cfm?staffprofileid=U0023837
External/industrial supervisor	N/A
Contact details for project (for informal applicant queries)	Samantha Harrison S.L.Harrison@tees.ac.uk
DTA Programme(s): please tick which DTA programme(s) this project relates to:	
DTA Applied Biosciences for Health (Healthy Ageing)	
Project title	The effectiveness of Virtual Reality (VR) for management of pain
Project description: please provide a brief description, using the headings given below, of the project (max. 450 words) which will be used as part of the advertising material and will be placed in the public domain. Please also indicate whether there are any confidentiality/sensitivity/IP issues of the research which should not be made publicly available.	
<p>I. Scientific excellence</p> <p>Virtual Reality (VR) has been in use for relief of acute pain in burns, dentistry, wound debridement and post-operative pain for around 20 years. A key mechanism is distraction facilitated by immersion in the virtual environment. More recent studies have begun to explore the use of VR in the management of chronic pain. This is more challenging because of the complex interplay of biological, physical, emotional and social mechanisms. Within self-management of chronic pain, distraction is recommended to help manage pain and flare-ups of pain. There is emerging evidence that VR methods may help reduce pain in the short term for people with chronic pain.</p> <p>The project plan will give clear direction to the student while allowing appropriate space for the student to develop their own ideas to facilitate ownership of the project.</p>	



II. Clear aim and hypothesis

Between different VR applications, there will be a difference in short-term reduction of chronic pain. How can short-term pain relief using VR be incorporated into self-management?

III. Methodology and innovations

Stage 1. A systematic review of VR for pain to guide selection of the VR intervention(s) for Stage 2.

Stage 2. A randomised controlled trial, with baseline and follow-up pain and function measures, of the effectiveness of selected portable VR applications on short-term reduction of pain for people with chronic pain. The study will take place in the university. The student will, with supervision, select a control/comparison condition and determine the number of treatment arms and select outcome measures.

Stage 3. A feasibility study will investigate how the “best” VR application from above could be applied at home within a self-management package. Participants (n=10-15) will be given access to the VR to use at home for a number of weeks. In user-workshops and/or focus groups and interviews, held before and after the period of use of the VR, they will explore their experiences and expectations. The conclusions will provide insight into optimal ways of including VR for use at home as a self-management tool for chronic pain.

IV. Strategic relevance

The project links two major areas of strategic importance - digital health and self-management of long term conditions, of which chronic pain is one of the most prevalent and costly in human and economic terms. The project is of strategic relevance to our work in the Centre for Rehabilitation and Exercise Sciences, with close links with our involvement in the EU Interreg Virtual Reality for Health WEBSITE. project.

V. Interdisciplinarity and fit with relevant DTA programme

Chronic pain is a common in all age groups and particularly disabling in older people. The project brings together expertise in rehabilitation and digital health.

Lay summary (max 200 words) to be used for reference as part of the selection process where non-specialists are involved

Virtual Reality (VR) can reduce acute pain by distracting attention away from the pain while people play the games. Chronic pain is different than acute pain and is much more difficult to reduce - for example, drugs that work for acute pain do not work well for chronic pain. But people with chronic pain do use distraction to make their pain more bearable. Therefore, they may find VR useful but that has not been scientifically proven yet. This project will see whether or not VR can help people make their chronic pain more bearable.

The project will have three stages. In stage 1, the existing scientific studies on VR for pain will be closely examined to choose types of VR that might work best. In stage 2, some of the best available types of VR will be compared in a fair trial to see which produces the most relief in people with chronic pain. In stage 3, the best one of these will be given to people with chronic pain for a number of weeks. They will then describe how they used the VR and they will explain how they think it could be used to help others.



Co-funded by the Horizon 2020 programme of the European Union

This project has received funding from the European Union’s Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 801604.

Industrial/Employer placement opportunity please include details, where known, of any external placement opportunities or collaborations available to the student as part of the project

There are potential opportunities with partners on the VR4Rehab project, which will be ongoing during the duration of the PhD. The VR4Rehab project will bring together SMEs from across the North West Europe region to stimulate the development of VR products for rehabilitation. Given that Teesside University is leading the pain management theme within the project, there is strong potential to facilitate the student's collaborative opportunities.

International placement opportunity please include details, where known, of any potential international placement opportunities or collaborations available to the student as part of the project

The VR4Rehab partners from academia and clinical practice from across the North West Europe region provide direct opportunities for collaboration. In particular, the Sints Maartenskliniek in the Netherlands, has an active clinical and research programme in pain management.

Scientific, economic and societal impact of the project

Chronic pain has huge human and economic costs across the EU. Figures suggest that around 100 million people experience chronic pain to the detriment of their physical and mental health and general well-being. These figures do not include their friends and family members whose lives are also affected. Chronic pain is linked with around half of all of all days lost from work with the total economic cost of poorly managed chronic pain reaching to 2% of GDP across the EU.

Self-management is seen as a key part of management of chronic pain. The project will directly inform the use of a technological innovation that has the potential for a wide uptake as part of self-management of chronic pain.

Additional admissions requirements: please state if there are any specific admissions requirements for this project i.e. subject specific degree qualifications or disciplines, relevant skills, experience etc

Applicants should hold or expect to obtain a good honours degree (2.1 or above) or Masters level qualification in a health related or social science subject. The successful applicant will have a demonstrable understanding of self-management of chronic pain and will have experience in recruiting and collecting data from people.

