

Erasmus+ VR-PAIN

NEWSLETTER No 3

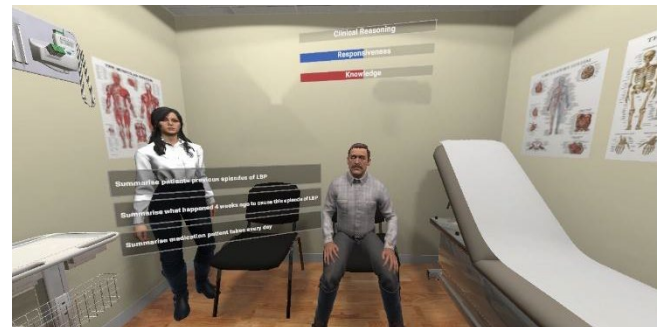
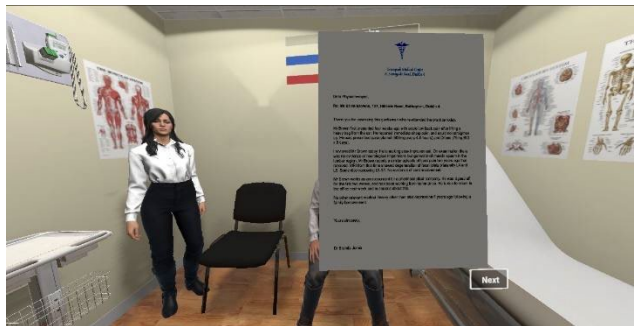
01. 07. 2024



The VR-PAIN project is progressing well and we are in the exciting phases of finalising the VR case studies (acute low back pain, chronic low back pain, acute post-surgical pain) to support clinical reasoning in physiotherapy pain science education (WP3). We are now piloting them with physiotherapy students in Ireland and the Netherlands

WP2&3: Designing VR environments

- In March 2024, the VR-Pain app for the chronic low back pain was piloted at The University of Applied Sciences Utrecht.
- Feedback highlighted areas for improvement in the VR environment, such as animations and voice. Based on this feedback, we have updated the VR environment to enhance the user experience.



WP4: VR tool intervention & evaluation

- In April 2024 the updated VR-PAIN acute low back pain case was piloted in University College Dublin with 30 Stage 4 physiotherapy students. The session provided extensive quantitative and qualitative feedback which we are implementing



Realistic scenario,
Good learning activity



Increase font size of text,
Have tutor give more feedback

- The evaluation was quantified by the questionnaires:
 - ✧ **Student Satisfaction and Self-Confidence in Learning Scale (SLSC)**
 - Most students (91.1%) had high overall satisfaction with the simulation learning experiences.
 - Majority of the students (93.1%) agreed that they had good self-confidence in simulation.
 - ✧ **Simulation Design Scale (SDS)**
 - Most students (91.3%) mentioned that simulation provided support in their learning.
 - ✧ **Self Efficacy: The Physical Therapist Self-Efficacy (PTSE) scale**
 - 79.3% of students expressed confidence in key aspects of clinical reasoning and decision-making in physical therapy practice in VR environment.



June 5 – 7, 2024 | Athens, Greece


Dr Brona Fullen (University College Dublin), Professor Harriet Wittink (Utrecht University of Applied Sciences), Konstantinos Tsaramirsis and Marios Alexopoulos (Infosuccess3D) conducted a VR Workshop focusing on enhancing physiotherapy students' clinical reasoning skills in pain management at the European University Information Systems (EUNIS2024) conference.



June 26 – 28, 2024 | Amsterdam, The Netherlands

A poster presentation titled "Development of Virtual Reality Case Scenarios for Pain Science Clinical Reasoning Education: The VR-PAIN Study" will be presented at the World Congress on Virtual Rehabilitation 2024.






Development of Virtual Reality Case Scenarios for Pain Science Clinical Reasoning Education : The VR-PAIN Study

Joseph G. McVraigh¹, Harriet Wittink², Sinead McMahon³, Eleni Mangina⁴, Mai Yashitan⁵, Konstantinos Tsaramirsis⁶, Greg Agripinos⁷, Brona M Fullen⁸

¹Discipline of Physiotherapy, School of Clinical Therapies, College of Medicine and Health, University College Cork, Cork, Ireland; ²Research Group (Pain) and Health, Utrecht University of Applied Sciences, Utrecht, The Netherlands; ³Faculty of Translational Pain Research, University of Hong Kong, Tsing Yi, Kowloon, Hong Kong; ⁴School of Computer Science, University College Dublin, Dublin, Ireland; ⁵Clinical Development, Clinical Development Centre, Asahi Kasei Pharma Corporation, Tokyo, Japan; ⁶QUANTA & QUANA, Athens, Greece



Background and Aims

Pain is the main reason people attend physiotherapy. A structured approach to learning is essential to enhance physiotherapy students' development of **clinical reasoning skills** in pain management. As presents a lack of a framework in standardising physiotherapy education can potentially negatively impact patient care. VR-Pain project is to address these issues by **developing VR clinical reasoning scenarios** for acute and chronic pain. This study focuses on **developing VR case scenarios** to identify gaps in pain science clinical reasoning skills development.

Methodology Two stage process:

- Curriculum review and requirements acquisition**
 - Mapped and identified the EPIC Pain Physiotherapy core curriculum
 - program year
 - fully or partially taught
 - the number of hours spent teaching the topic
 - teaching format
 - assessment format
 - One-time workshop with stakeholders
 - Stakeholders
 - People living with chronic pain
 - Physiotherapy students
 - Content
 - Introduction
 - Separate focus groups
 - Feedback
 - Scenario review
 - Acute Low Back Pain (LBP)
 - Acute Post-Surgical Pain
 - Chronic LBP
 - VR Scenario Development**

Results 1 Curriculum review and requirements acquisition

(i) Timing of teaching varied between programmes

(ii) Assessment formats

- practical & written exams
- multiple-choice tests
- group presentations
- on clinical placements

(iii) EPIC curriculum

Section 1 Pain Science and Knowledge
Overall comprehensively taught

Section 2 Principles of assessment and measurement
Generally fully or partially taught

Section 3 Principles of treatment
All subsections were generally comprehensively or partially taught across all programmes

Section 4 Pain Self-Management/Special Patient Populations
Certain topics well covered, few topics for specific age group were not taught in two of the three programmes

Results 2 VR Scenario Development

Table 1. Focus Group Summary – People living with pain

Relationship	Building the relationship between a physiotherapist & patient	Most important	• Communicating complex issues in an accessible manner
Language, Listening, Understanding	Having good communication with their physiotherapist	Most challenging	• Appreciate the importance of non-verbal communication
Knowledge	Allowing the patient the space to tell their story		• Language and interview skills
Holistic approach	Physiotherapist should have adequate knowledge with a certain condition		• Individualising the intervention to the patient presenting presentation
	It is required to see the patient as a whole human being		• Engaging the patient in emotionally challenging communications
			• Dealing with the limitations of their knowledge and experience
			• Practicing skills/application in a safe environment
			• Developing clinical reasoning skills with virtual support

Table 2. Focus Group Summary – Physiotherapy Students

What could VR help with

Conclusions

While there is overall consistency across programmes regarding core pain science topics, some variations were identified.

Feedback from the stakeholders will be used to inform the VR scenarios.

These case studies will enhance their clinical reasoning skills development in pain science to ultimately address patient care.

