

## Perceptual game controllers and fibromyalgia studies

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### ABSTRACT

This pilot study investigated gesture-based control of video games to promote and motivate self-driven home-based aerobic exercise (AE) training regimes to improve pain threshold associated to fibromyalgia. 10 patients were randomized to 10 sessions each led by a non-medical 'game-savvy' PhD Medialogy student. Control was treatment-as-usual (TAU) patients via the patient's doctor who conducted pre- and post- interviews, tests, and VAS registrations of pain, disturbed sleep, lack of energy, and depression. Included was patient-reported global subjective improvement or otherwise. A Nintendo Wii was used with a sports compilation game 'Sports Resort' with the Wiimote MotionPlus Accessory to increase accuracy of gesture. Facilitator in vivo noted observations and the doctors' research were supplemented by multiple angle (3) video cameras synchronized to the game play for correlation analysis. Outcome measures were at baseline and completion. Short-term results were positive of those patients who completed the study (n = 2). 50% drop out at study commencement suggested a sceptical patient attitude. Further drop outs (n = 3) were due to a car accident (n = 1) and recurrence of pain (n = 2). Both patients who completed showed significant motion improvements and each purchased a Wii for home training following the study. Follow up interviews and tests are planned to question compliance and long-term outcomes. A follow-on comparative study with 39 patients was conducted with two occupational therapist students replacing the Medialogy student as session facilitator. Three game platforms were studied: the MS Kinect, Sony MOVE, and Nintendo Wii, with 5 game sessions of one hour being played by each patient in regular lab visits (=15 sessions each). This is reported separately with preliminary findings indicating tendencies in line with this short paper. A more detailed report will be included in the publication of the final work as a whole.

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**Full papers will be published in the Conference Proceedings and will be available to delegates at the conference on Sept. 10.**

**Full papers will be released on-line in the ICDVRAT archive on March 15.**