CONFERENCE ABSTRACT

frAAgiLe: Computer Games for reducing frailty in elderly population
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This paper presents the project frAAgile, which fights with technology against fragility, the main issue that most of the elderly citizens go through and the cause for many diseases and even death. Many studies focus on its effects and solutions and some have even proved that its genetic situations can be reversed through exercise. The European Union has understood how relevant fragility is as a problem and has placed its combatting as a priority. Once a patient falls in a situation of fragility, falls may happen and these imply costs for the life of the person and its society. Tests have been designed to measure and detect this situation, being the most accurate stand up and walk, where both the speed of standing up from a chair and the speed of walking are measured, slowness (which has been established as an objective number of seconds) in these two activities is a main symptom of fragility.

The objective that has established a solid international consortium is to design a technological solution that helps measure and mitigate the effects of fragility at home. Its main objectives are affordability, accessibility and efficiency. Ideable and eVida from the University of Deusto are the Spanish partners that will develop the platform and the University of Geneva is the support partner for this task. Several end users from Switzerland, Hungary, Romania and Cyprus also participate in the consortium.

The description of frAAgile is based on tablet devices that test sedentarism, heart rate, quality of life, and fragility (through Edmonton) and includes some serious games and video training. The games are designed by physiotherapists and psychologists to address fragility from every possible approach, from cognitive, to diet and the main field: physical exercise. They are personalized and engaging. There will also be a possibility to include a smartwatch, which, connected with the platform and the tablet, will provide information about heartbeat speed and other physical conditions. The newest technology about movement visualization will be included in the app in order to monitor the movements of the person and prevent any possible falls.

The sixty end users are analyzed physically and mentally, in terms of fragility, and offered physical and mental exercises to avoid the risk of possible falls using an accessible and affordable solution that combines videos for exercises and serious games to both train and detect physical or cognitive fragility. The project "frAAgile" could end up being a crucial item in the lives of many elderly citizens and a successful market product. The intention of the consortium, therefore, is to carry out the tests as rigorously as possible in order to make sure everything is perfect before its commercialization. Testing is to be implemented throughout the next two years with around sixty elders aged 65 and above from different backgrounds and most importantly, different levels of diagnosed fragility.