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CONFERENCE ABSTRACT

Usability, acceptance, and results of a digital solution based on DAPAS serious games among elderly

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Introduction

Each year the amount of elderly people is increasing and the life expectancy is longer in EU countries. So, obviously, it is important to include new tools in the pathways of the health system to maintain and improve the quality of life of the target group. DAPAS (Deploying AAL Packages at Scale) project is an European project which includes participants from different countries, with the aim of improving older adults' life through the use of information and communication technology. To achieve this goal, serious games for tablets have been developed, and the authors are going to present the results of lab test, and pilot test with the elderly in this paper.

Theory/Methods

The lab tests have been made to 10 young researchers between 20 and 35 to identify difficulties and problems with the serious games. To evaluate the usability, SUS test has been applied.

The pilot tests have been carried out with 100 elderly (60+) people belonging to 3 user organisations in 3 countries: Luxembourg, Austria, and Portugal.

Playing the games, different parts of the brain are going to be pushed in order to develop a bigger memory capacity, problem solving, Sequential thinking and Logical reasoning.

Results

Scores results of the pilot test with the elderly.

The scores obtained by elderly in the Bingo-concentration game, in a scale from 0 (the lowest) to 10 (the highest), had shown differences in the game levels. The first and second levels had obtained the best results, as the mean of the points obtained by the users were almost the highest. On the other hand, the third level, got worse scores as it is normal due to the difficulty evolution.

Cubbie (puzzle/maze-game), had more or less the same results in both levels played by the users. The differences in the time required to resolve the different levels are minimal.

Scores of the lab test: All the games except Bingo received similar results in all modes.

At usability level, games are scored for graphics, music and action. With sections graded from 1 to 5 and offering a maximum score depending on the number of concepts to be evaluated.The highest rated games in terms of graphics are Cubbie and Colorie (attention game), getting an overall score

of 182 and 170 respectively out of 220 possible points, with a mean of 3,86 out of 5. Bingo is the most intuitive.

Conclusions

Serious games keep older people's minds active. The pandemic caused by COVID-19 has demonstrated the benefit of being able to perform cognitive training exercises for the elderly from a personal device.

Limitations

The serious games developed in DAPAS project are native apps for Android devices. Then, they can not be used in IOS ones.

Suggestions for future research

The project partners continue testing this games and all the platforms of the project. In the near future, to increase the pilot test could help us to improve the results and conclusions. The project could be scaled up to other countries.