Mild cognitive impairments are characterised by a cognitive decline superior to the normal ageing and cognition of the individual but that does not affect the activities of daily living. Prevalence is between 15%-20% for people over 60 years old and more than half of the population progress to dementia within 5 years [1]. Dementia can be described as a group of the most common chronic mental health conditions. It cannot be labelled as a disease, however it is a term used to describe the symptoms and the inability of a person to interfere with daily activities. Dementia is a progressive degenerative brain syndrome that affects the memory and constantly develops into a memory impairment. The age spectrum of MCI lies between 65 and 85 and the risk of dementia increases with the increasing age.

Cognitive Training based on the brain plasticity concept has been found to improve cognitive functions. Recent studies have also confirmed such improvements through the use of computerized cognitive training programs, offering further evidence of the beneficial effects of cognitive training on memory and attention.

INTERVENTION

Mild cognitive impairments and mild dementia, prevent the increase in the cognitive decline and enhance the Quality of Life [2].

Individuals with cognitive impairments can be instructed successfully on daily activities within virtual reality environments [3].

Patients tend to be more keen on virtual reality tools than classic paper tools. Likewise, asymptomatic people found it more exciting and attractive [4].

Virtual reality and supplementary ICT interventions should be encouraged and supported, but more research is required to satisfy the cognitive impaired users and provide them lasting beneficial effects [5].

RESEARCH OBJECTIVES

EMERGING TECHNOLOGIES

COGNITIVE MECHANISMS

INTERACTION MECHANISMS

PERSONALISATION

ADAPTATION

INFORMATION TECHNOLOGIES

COGNITIVE TRAINING

Smart living technologies

Virtual Reality Interventions

Advantages:
- Environment personalisation
- Similar applications treated anxiety, phobias, stress and pain mitigation.

Virtual reality cognitive training systems are able to offer effective support to patients with mild impairment and mild dementia, prevent the increase in the cognitive decline and enhance the Quality of Life [2].

RESEARCH PLAN

OUTCOME

FOCUS

Mild Cognitive Impairments

Dementia

CONTRIBUTION

Ambient Assisted Living Technology Neurorehabilitation

MODELS

Algorithms for personalisation & adaptation of in-home based cognitive training systems

Virtual Assistant to provide interaction with the users

IMPACT

Avoid institutionalisation

Improve Quality of Life

References

PREVIEW