

## **COGNITIVE PATIENT AND INTELLIGENT ASSISTIVE TECHNOLOGIES: ARE WE RESOURCEFUL ENOUGH FOR THE NEXT LEVEL?**

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Background: Medical, social and economical challenges of demographic aging benefit of an important, positive answer due to Ambient Assisted Living (AAL) applications; AAL platforms can help the not-so-independent elders in fulfilling their daily activities and in securely benefiting of their homes for as long as possible. Intelligent AAL applications for physically impaired elders are nowadays boosting, while those targeted at cognitive patients still struggle certain obstacles. Method: Our current paper overviews the main human-machine interaction problems faced when dealing with cognitively impaired patients, as well as certain lessons that we acquired as medical partners in specific projects. .Results: The initial target was to establish a successful methodology for defining a target group (patient profiling and ontology), despite their tremendously variable impairments and specific needs. This task is much more difficult for cognitive patients, since their demographic variables (age, sex, level of education) additively interfere with various mental impairments. Assistive platforms should be flexible, self-adaptable to an unstable patient profile and should allow an ongoing readjustment of task sharing between machine and human care givers. As part of managing patient compliance and dealing with technology anxiety, a suitable design of graphical interfaces and user tutorials is of the utmost importance. Therefore, the design of training protocols for both patients and their care givers are similarly important. Conclusions: The development of AAL applications targeting cognitive patients requires sustained, multidisciplinary research. The main research topics are (a) the design of patient-specific assessment and monitoring tools, (b) the creation of flexible, adaptive devices with user-friendly interfaces capable of (c) sustaining both patient and caregiver oriented education.