**Multimedia Appendix 2:** Characteristics of the included studies from the Laboratoire d'analyse des USAges en GErontechnologies living lab in France.

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| --- | --- | --- | --- | --- | --- | --- |
| Study | Product | Design | Setting and sample | Method | Results | Quality of life; independence; caregivers |
| Wu et al [1] | “Kompaï”: a robot with a tablet PC that remembers appointments, manages shopping lists, plays music, and has a videoconferencing system. | Mixed methods study | Community: n=6 older adults with MCIa and n=5 cognitively intact older adults; 9 women and 2 men; mean age 79.3 years (range 76-85 years) | * Participants interacted with the robot for 1 hour once a week for 4 weeks * Robot acceptance questionnaire * Semistructured interviews * Usability performance measures * Focus group | * All subjects able to use the robot * Low scores: intention to use, perceived usefulness, and attitudes toward robots * High scores: ease of use, social influence, perceived enjoyment, and anxiety * Barriers: uneasiness with technology and feeling of stigmatization | * Contributed to the quality of life * Stimulated independence |
| Wu et al [2] | “Robadom project”: goal to design a robot with emotions and language able to assist home-dwelling older adults with MCI. | Three qualitative studies and one mixed methods study | Community:   * First study: n=15 older adults with MCI * Second study: n=8 healthy older adults and n=7 with MCI * Third study: n=23 older adults and n=20 young subjects * Fourth study: n=19 older adults | * First study: semistructured interviews exploring needs and perceptions about the robot * Second study: focus group to define the robot’s ideal appearance * Third study: evaluate the perceptions of robot’s expressivity * Fourth study: compare the effects of 3 devices (a laptop computer, a robot, and an avatar) | * First study: cognitive stimulation, object searching, and reminders were appreciated * Second study: reticence toward robots with human characteristics * Third study: expressions best interpreted via colors and ear positioning * Fourth study: preference went to the laptop, then the robot, and finally the avatar | Contributed to physical, social, and psychological well-being and maintenance of quality of life |
| de Sant’Anna et al [3] | “Paro seal robot”: robot with sensors sensitive to light, touch, sound, and some sentences; expressions via flipper, neck, and eyelid movements | Mixed methods study | Long-term health care facilities: n=5 older adults with severe Alzheimer disease; age range 66-96 years | Eight individual sessions for 20 minutes over 4 weeks. Quantitative data:   * NeuroPsychiatric Inventory * Apathy Inventory * Cornell Scale for Depression in Dementia | Quantitative results: significant decrease (*P*=.04) in anxiety, aggressivity, irritability, and sleep quality. Impact on the expression of feelings, verbal and nonverbal exchanges, and patient’s search for intimacy and contact | Communication vector that improved the expression of emotions and quality of life |
| Boulay et al [4] | “MINWii” video game that plays songs by pointing at a keyboard | Pilot usability study | Long-term health care facilities: n=7 older adults with Alzheimer disease; 4 women and 3 men; mean age 88.5 years (range 77-94 years) | Testing sessions once a week for 10-20 minutes per patient. All sessions were videorecorded. | * Positive stimulation of cognitive abilities * Positive interaction with caregivers * Powerful reminiscence * Good satisfaction | Active Music Therapy treatment could improve the patients’ quality of life. |
| Faucounau et al [5] | “Global Positioning System”: with geolocation alarms via SMS text messages, voluntary alarm, alarms when going beyond the preset safety zone, detecting long inactivity, and falls | Case study | Community: n=1 older adult with Alzheimer disease (84 years) and his spouse (68 years) | Use of the device for 1 month | * Patient’s impressions pretest: removable system as desired, reassurance for his wife; posttest: device too voluminous and ugly * Caregiver’s impressions pretest: autonomous management of husband's wanderings; posttest: device too voluminous, malfunctions and usage difficulties, imprecise coordinates, and low battery autonomy | * Strengthened personal safety * Improved independent walking * Helped to reassure informal caregivers |

aMCI: mild cognitive impairment.

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