

# Computational media and multisensory approach in moderate dementia treatment

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Growth of computational science has conditioned development of neurology and neuroscience in area of diagnostics and treatment. Using multisensory approach in rehabilitation can be expensive and demanding, but by using computational media this can be well done. In 2010, according to our past studies, was created a licensed product, The Blue Dolphin (TBD), which integrates elements of color, light, and music therapy and digital media, formed as 10-minutes long video recording. Until 2012 it was used in releasing stress, but now it has multiple uses.

Main aim of this research was showing effects of TBD in moderate dementia treatment. Research started in 2012 and ended in 2014, and included 22 patients of different age (52-74 years old), sex and dementia etiology (Alzheimer's disease, vascular dementia), and the control group of ten healthy people of the same age range. Participants used TBD twice a week, during two years of research. As measuring instrument was used The Mini Mental State Examination (MMSE), divided in memory, attention and language question categories, which was performed in every patient every three months of research. All participants have signed informed consent.

Results in younger participants after three months of using TBD show increasing of correct attention answers and after six months show the same phenomena in memory questions. The same happens after a year of use in older participants. Female participants show first improvement of language skills after six months of use, while in male that happens after nine months, and the attention and memory results haven't shown any difference. By etiology, improvement of all question categories happens after 6 months in people with Alzheimer's disease (AD) and in 9 months in people with vascular dementia. In healthy people results in all question categories rise after three months and stay the same after that.

In conclusion, TBD shows encouraging results in moderate dementia treatment. It is also very simple to use and includes integrated multisensory approach so it may be used in rehabilitation of people with neurodegenerative diseases.

Keywords: computational media, multisensory approach, moderate dementia, The Blue Dolphin

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