World Academy of Science, Engineering and Technology
International Journal of Medical and Health Sciences
Vol:17, No:09, 2023

Music Listening in Dementia: Current Developments and the Potential for Automated Systems in the Home: Scoping Review and Discussion

Authors : Alexander Street, Nina Wollersberger, Paul Fernie, Leonardo Muller, Ming Hung HSU, Helen Odell-Miller, Jorg Fachner, Patrizia Di Campli San Vito, Stephen Brewster, Hari Shaji, Satvik Venkatesh, Paolo Itaborai, Nicolas Farina, Alexis Kirke, Sube Banerjee, Eduardo Reck Miranda

Abstract : Escalating neuropsychiatric symptoms (NPS) in people with dementia may lead to earlier care home admission. Music listening has been reported to stimulate cognitive function, potentially reducing agitation in this population. We present a scoping review, reporting on current developments and discussing the potential for music listening with related technology in managing agitation in dementia care. Of two searches for music listening studies, one focused on older people or people living with dementia where music listening interventions, including technology, were delivered in participants' homes or in institutions to address neuropsychiatric symptoms, quality of life and independence. The second included any population focusing on the use of music technology for health and wellbeing. In search one 70/251 full texts were included. The majority reported either statistical significance (6, 8.5%), significance (17, 24.2%) or improvements (26, 37.1%). Agitation was specifically reported in 36 (51.4%). The second search included 51/99 full texts, reporting improvement (28, 54.9%), significance (11, 21.5%), statistical significance (1, 1.9%) and no difference compared to the control (6, 11.7%). The majority in the first focused on mood and agitation, and the second on mood and psychophysiological responses. Five studies used AI or machine learning systems to select music, all involving healthy controls and reporting benefits. Most studies in both reviews were not conducted in a home environment (review 1 = 12; 17.1%; review 2 = 11; 21.5%). Preferred music listening may help manage NPS in the care home settings. Based on these and other data extracted in the review, a reasonable progression would be to co-design and test music listening systems and protocols for NPS in all settings, including people's homes. Machine learning and automated technology for music selection and arousal adjustment, driven by live biodata, have not been explored in dementia care. Such approaches may help deliver the right music at the appropriate time in the required dosage, reducing the use of medication and improving quality of life.

Keywords : music listening, dementia, agitation, scoping review, technology
Conference Title : ICDAD 2023 : International Conference on Dementia and Alzheimer's Disease
Conference Location : London, United Kingdom
Conference Dates : September 18-19, 2023