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NEUROMOTOR MODELING OF MUSIC ENTRAINMENT – OLDER PATIENT’S CASE STUDY

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We are an aging society. Declining birth rates and increasing life expectancy are contributing to an increasing proportion of seniors in the population. The task of therapists working with the elderly is to improve patients' quality of life, maintain physical and intellectual function for as long as possible, and support rehabilitation. Parkinson's disease (PD) is the most common degenerative disease involving movement. It is associated with neuronal death and consequent motor problems, especially those involving gait with the characteristic Freezing of Gait (FoG). PD can also be associated with Mild Cognitive Impairment (MCI).

In the treatment of Parkinson's disease, methods related to neurological music therapy seem to be of particular interest. This form of evidence-based therapy was pioneered in the 1990s. At that time, neuroimaging became possible during performance. Using the findings of Michael Thaut, who was the first to study the effects of this method - Rhythmic Auditory Stimulation (RAS) is particularly effective. It uses a metronome and, in some cases, also musical accompaniment with a more complex structure. These stimuli are designed to facilitate gait and reduce FoG.

The subject of this article is the analysis of the RAS method of supporting the movement of a patient with Parkinson's disease at the stage of the disease marked by FoG episodes. The material analyzes literature descriptions of the effective use of auditory stimulation in the context of modeling in space the elements of music for personalized stimulation.

The case report concerns a patient suffering from PD, without cognitive impairment, residing permanently in a private senior citizen home. The patient was subjected to the RAS method for step lengthening and gait modification. The case study provides preliminary evidence that the use of a metronome with accompaniment can be more effective than a metronome alone when training RAS.