Abstract

Attention Deficit Hyperactivity Disorder (ADHD) is one of the most common mental disorders in childhood and adolescence, combining music with reading is a phenomenon that some children report, as it helps with concentration.

The aim of the study is to examine the effect of different types of music on the degree of reading comprehension, among children diagnosed with ADHD. In this study, I will use different types of music to examine how music per issue affects reading comprehension in children with ADHD and diagnose the effect of music on autonomic system regulation and the effect of autonomic system regulation on reading comprehension.

The study was done in two stages. In the first phase, a sample of young adolescents (N = 20; 70% boys; mean age = 12.05, SD = 1.18) was included, which included sixth- (50%) and 7th-grade students (50%) who were diagnosed with attention deficit hyperactivity disorder. (ADHD group; n = 10), and peers with typical development (control group; n = 10, by gender and grade, respectively), who were excluded from the study population for the initial data analysis.

In the second phase - the sample included 50 native speakers, young adolescents with a diagnosis of attention deficit hyperactivity disorder, without any concomitant learning disorder (n = 25; 60% boys; mean age = 10.28, sat = 1.22) from an urban area in the south Central Israel Another group of typical young adolescents was sampled from the same residential area as a control group (n = 25; 39% boys; mean age = 10.44, sat = 1.74).

Participants read aloud with and without music, while doing that we tested their variance heart rate index (HRV). Our hypotheses was that adolescents with ADHD and hyperactivity will show a smaller decrease in the average HRV level, compared to their peers with typical development.in terms of background music, participants with a smaller decrease in average HRV level will improve reading comprehension performance, compared to participants with a larger decrease in average HRV level (regardless of ADHD diagnosis). The hypotheses were confirmed and strengthened by the selective attention theory.

The importance of the research is both theoretical and practical.

On the theoretical side, I aim to expand the existing knowledge on attention deficit hyperactivity disorder, through a number of novelties: One is how music and sound can improve the student's ability to study. The second element i would like to test
is the connection between the cognitive load and the autonomic system. My research has shown that the autonomic system levels can be adjusted by using music, by adding music to their cognitive process I learned that students that suffer from ADHD can improve their reading abilities while maintain a balanced autonomous system.
Putting my theory into practice I will bring to light the existing connections between the neurological and cardiology and autonomous system. My goal is to find a solution or apparatus that can help and advance young students who are suffering from ADHD.

Keywords: Attention Deficit Hyperactivity Disorder (ADHD), Heart Rate Variation (HRV), Autonomic System.