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Attention Deficit Hyperactivity Disorder (ADHD) stands as one of the most prevalent neurodevelopmental disorders affecting individuals across the lifespan. Its hallmark features of inattention, hyperactivity, and impulsivity have traditionally been linked to cognitive and behavioral domains. However, a growing body of research has unveiled a broader scope of challenges associated with ADHD, extending into motor function and neurological regulation.

Motor control, the ability to initiate, coordinate, and execute movements, constitutes a vital aspect of human functioning, contributing substantially to daily activities and overall quality of life. In the context of ADHD, disruptions in motor function have garnered attention as potential indicators of underlying neurological dysregulation. Individuals with ADHD frequently exhibit motor impairments, such as difficulties with fine and gross motor coordination, postural stability, and motor planning [1]. These motor deficits not only contribute to academic and social struggles but also impact self-esteem and psychosocial well-being.

The intricate link between ADHD and motor function prompts inquiries into the neurological underpinnings of these challenges. Neuromuscular coordination, encompassing the complex interplay between the central nervous system and the muscular system, plays a pivotal role in executing precise and controlled movements. While the precise mechanisms linking ADHD and neuromuscular difficulties are

Results

In a study involving 25 boys with ADHD and 27 controls without the disorder, the internal consistency of the entire set of subtests was assessed using Cronbach's alpha. The utilization of a total sum score (TS) for each individual subtest was meaningful due to the high Alpha value, and no indications of multidimensionality within the subtests were identified. Rater agreement among physiotherapists trained in MFNU usage demonstrated high or very high levels in a separate study. Another study involving nine physiotherapists with limited MFNU experience individually scored video-recorded sessions of children, both with and without ADHD, on the 17 subtests of MFNU. This yielded an Intraclass Correlation (ICC) of .99 for the MFNU Complete Score (TS), indicating a strong level of agreement. The conclusion drawn was that, given standardized administration and scoring, the MFNU stands as a highly reliable tool for consistently assessing the targeted construct.

Impact of Methylphenidate on Motor Function in ADHD: The third study aimed to establish a link between MFNU scores and the response to Methylphenidate (MPH) treatment concerning core ADHD symptoms. The hypothesis posited that positive MPH responders would exhibit higher MFNU scores in relation to more severe problems compared to non-responders [4]. Examination of MFNU profiles from 73 medication-responsive children and adolescents with ADHD revealed no effect on the diagnosis itself. Subsequently, the impact of MPH on primary ADHD symptoms—impulsivity, inattention, and hyperactivity—was evaluated. The participants were retrospectively divided into medication responders (MR-group) and non-medication responders (NMR-group), and their respective MFNU scores were compared. No significant age or gender differences were observed between the two groups. As hypothesized, the high responders to Methylphenidate demonstrated significantly elevated MFNU problem scores compared to low responders.

Motor Control and Pain in Adults with ADHD: In a controlled study, the objective was to determine whether motor functional issues observed in children and adolescents with ADHD extended into adulthood, and if high MFNU problem scores correlated with reported physical pain—a common experience among ADHD patients of various age groups. The study encompassed 25 Methylphenidate-responsive adults diagnosed with ADHD (age range: 20 to 51 years) and a control group of 23 individuals (age range: 24 to 64 years) without ADHD. As anticipated, the ADHD group exhibited significantly more motor problems than the control group on muscle tone subtests. Although fewer issues were found in specific subtests such as "Synkinesis," "Walking," and "Dynamic balance, 2 legs," the ADHD group still displayed notable 5(p)7(l(l)T0.l)-5(k)3(, t)-s,"

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