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MANUAL PERFORMANCE OF CHILDREN AND ADOLESCENTS WITH AUTISM SPECTRUM DISORDER

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Background: The performance between the dominant hand (DH) and non-dominant hand (NDH) is distinct, with the DH typically showing better dexterity, strength, and coordination in manual tasks as it is more frequently used for daily activities. The manual performance of children with Autism Spectrum Disorder (ASD) may vary, as this population may exhibit motor deficits.

Objectives: To compare the manual performance of the dominant and non-dominant hands in children and adolescents with ASD.

Methods: A cross-sectional and quantitative study, which was submitted to and approved by the Research Ethics Committee. The study included 14 children and adolescents aged between 6 and 15 years, of both sexes, diagnosed with Autism Spectrum Disorder, classified as support level I or II, who have normal or corrected vision and do not have movement restrictions in the upper limbs. The Global Lateral Dominance Inventory (IPLAG) was used to assess laterality, and the Block Design Test was conducted with the children and adolescents to evaluate manual performance.

Results: The data were presented as mean and standard deviation. Normality was initially observed through the Shapiro-Wilk test. To compare the practice conditions with the dominant and non-dominant hands, paired t-tests were conducted for both the number of correct responses and the number of errors. The data were organized using the Statistical Package for the Social Sciences (SPSS) version 20.0, with a significance level set at $p < 0.05$. Fourteen children were evaluated with a mean age of 7.35, consisting of 13 males and 1 female. Of these, only 1 was left-handed. The comparison between the number of correct responses with the right hand ($M = 34.21 \pm 6.22$) and the left hand ($M = 33.86 \pm 8.37$) showed no significant difference [$t(13) = 0.24$, $p = 0.81$, $r = 0.01$]. Regarding the number of errors, there was no significant difference between the performance of the right hand ($M = 1.21 \pm 1.61$) and the left hand ($M = 2.89 \pm 3.77$) [$t(13) = -1.84$, $p = 0.09$, $r = 0.14$].

Conclusion: In light of the above, it was noted that there was no difference in manual performance between the right and left hands of children and adolescents with Autism Spectrum Disorder; however, further studies with this population are necessary due to the small sample size of the present study.

Implications: This study addresses the manual performance of children and adolescents with Autism Spectrum Disorder. Given that this population may exhibit motor performance deficits, which can compromise fine motor coordination, it is essential to study and

delve deeper into this topic to better understand and establish goals for effective treatment.

Keywords: Autism Spectrum Disorder, Motor Skills, Laterality

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LOWER LIMB STRENGTH IS RELATED TO GROSS MOTOR SKILLS IN SCHOOLCHILDREN

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Background: The development of motor skills in children is essential for activities of daily living (ADLs) and can be assessed using the Test of Gross Motor Development-3 (TGMD-3), an instrument that identifies delays in the acquisition of gross motor skills through thirteen skills, such as running, hopping, galloping, jumping with both feet, jumping on one foot, side running, kicking a ball, throwing a ball, and bouncing a ball. The distance of the jump is directly related to lower limb strength (LLS), a crucial component for the efficient execution of these movements.

Objectives: To analyze the relationship between LLS and gross motor skills, assessed using the TGMD-3.

Methods: This is a cross-sectional and observational study conducted with school children aged 5 to 11 years old, of both sexes, who studied public schools. Neurodivergent children and those who had undergone amputation were excluded. The identification and characterization of the sample were carried out using a questionnaire developed by the authors, which included information such as age, sex, weight, and height. LLS was assessed by the distance of the jump in centimeters, and gross motor skills were analyzed using the TGMD-3. The analysis was based on the total score of the test, which ranges from 0 to 100 points. All assessments were conducted by a single trained evaluator to minimize biases in data collection. Data were analyzed descriptively and using Spearman's correlation test. The strength of the correlation followed Cohen's criteria (1988): $r < 0.29$ as a small correlation; $0.30 \leq r \leq 0.49$ as a moderate correlation; and $r > 0.50$ as a strong correlation. All analyses were performed using SPSS 26.

Results: The sample consisted of 77 children, with a mean age of 8.58 ± 1.24 years. The majority of the sample was female (63.60%), white (57.10%), and eutrophic (55.80%). The mean jump distance was 132.17 ± 20.43 cm, while gross motor skills had a mean score of 71.57 ± 9.92 points. The correlation test revealed a p -value < 0.001 , indicating a significant relationship between the variables. A positive association was observed between jump distance and performance in gross motor skills, suggesting that children with greater lower limb muscle strength tend to have better motor performance, reinforcing the influence of muscle strength on motor development.

Conclusion: The results indicate a significant relationship between LLS and gross motor skills in children, suggesting that lower limb muscle strength may be a determining factor in the development of these skills. The analysis of these variables may contribute to the early identification of motor deficits and to the planning of interventions aimed at improving functionality in ADLs.

Implications: These findings highlight the importance of interventions that assess and promote adequate motor development from