

Conflict of interest: The authors declare no conflict of interest.

Funding: CAPES – Finance Code 001, CNPq and FAPEMIG.

Ethics committee approval: Not applicable.

Registration: Not applicable.

<https://doi.org/10.1016/j.bjpt.2025.101369>

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MANUAL PERFORMANCE OF CHILDREN AND ADOLESCENTS WITH AUTISM SPECTRUM DISORDER

Thamires Gabriela Silva Santos^{a,b}, Beatriz Couto Fortuna^c,
Marco Túlio Silva Batista^c, Tércio Apolinário-Souza^d,
Thalles de Souza Brito^{a,b}, Guilherme Menezes Lage^c,
Lidiane Aparecida Fernandes^{a,b}

^a Universidade Federal de Juiz de Fora (UFJF), Juiz de Fora, MG, Brazil

^b Universidade Federal de Juiz de Fora (UFJF), Campus Governador Valadares, Governador Valadares, MG, Brazil

^c Universidade Federal de Minas Gerais (UFMG), Belo Horizonte, MG, Brazil

^d Universidade Federal do Rio Grande do Sul (UFRGS), Porto Alegre, RS, Brazil

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

Conflict of interest: The authors declare no conflict of interest.

Funding: Not applicable.

Ethics committee approval: CAAE: 67426223.4.0000.5188.

Registration: Not applicable.

<https://doi.org/10.1016/j.bjpt.2025.101370>

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LOWER LIMB STRENGTH IS RELATED TO GROSS MOTOR SKILLS IN SCHOOLCHILDREN

Sabrina Orlandi Barbieri, Gabriel Furlanetto Soranzo,
Eloisa dos Santos Vieira, Guilherme Tavares de Arruda,
Fernando Copetti, Aron Ferreira da Silveira, Melissa Medeiros Braz
Programa de Pós-Graduação em Distúrbios da Comunicação Humana, Universidade Federal de Santa Maria (UFSM), Santa Maria, RS, Brazil

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; $0.30 \leq r < 0.49$ as a moderate correlation; and $r \geq 0.50$ 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

childhood. Physical therapists and other health professionals, such as physical education teachers, can integrate this knowledge into educational programs aimed at improving children's motor performance, with positive impacts on their functional abilities.

Keywords: Child, Motor skills, Physical therapy specialty

Conflict of interest: The authors declare no conflict of interest.

Funding: CAPES – Finance Code 001.

Ethics committee approval: CAAE: 69652123.8.0000.5208.

Registration: Not applicable.

<https://doi.org/10.1016/j.bjpt.2025.101371>

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PARENTAL EXPERIENCES IN THE PARTICIPATION OF THEIR CHILDREN WITH ATYPICAL DEVELOPMENT IN A COMMUNITY AQUATIC STIMULATION PROJECT: AN INCLUSIVE PERSPECTIVE

Regina Alves de Oliveira^a, Maria Thereza Santos Rocha^b, Julia Carvalho De Almeida^a, Lucas Barbosa da Costa^a, Wellington Fabiano Gomes^{b,c}, Rosalina Tossige Gomes^{a,b}, Rosane Moraes^{a,b}

^a Programa de Pós-graduação em Reabilitação e Desempenho Funcional, Universidade Federal dos Vales do Jequitinhonha e Mucuri (UFVJM), Diamantina, MG, Brazil

^b Departamento de Fisioterapia, Universidade Federal dos Vales do Jequitinhonha e Mucuri (UFVJM), Diamantina, MG, Brazil

^c Programa de Pós-graduação em Saúde da Família, Universidade Federal dos Vales do Jequitinhonha e Mucuri (UFVJM), Diamantina, MG, Brazil

Background: Some children may have significant motor delays or difficulties, impacting on their ability to participate in activities and interact in the community. The International Classification of Functioning, Disability and Health (ICF) defines participation as “involvement in life situations”, highlighting its relevance to healthy development and its relationship with activities that favor social interactions. Various physical and environmental factors can limit this participation, and these restrictions can vary according to individual needs and the characteristics of the environment in which the person is inserted.

Objectives: This study aimed to understand the experience and point of view of parents of children with atypical development about the experience and participation of their children in an aquatic stimulation project for children.

Methods: This is a qualitative, descriptive case study carried out with participants in an aquatic stimulation project for children. Six participants were selected using the “sampling by type variety” technique to answer a semi-structured individual interview in January and February 2024. The data collected was analyzed using the “content analysis” technique, which allowed categories to be identified. The research was approved by the Research Ethics Committee.

Results: Data analysis resulted in eight categories: (1) the adaptation process and challenges faced; (2) interaction with other children; (3) facilitators in participation; (4) how other parents and children react; (5) involvement of the child in an integrated and equal way; (6) impact on cognitive, language and motor development; (7) impact on affective-social behavior; (8) affective bond. Parents reported benefits in their children's overall development, including motor gains and stronger emotional bonds.

Conclusion: The results indicate that participation in the aquatic stimulation project provides significant benefits for the children involved. The study identified both barriers and facilitators that

impact participation, reinforcing the importance of adapted and inclusive practices that encourage greater social interaction.

Implications: This study suggests the need for continuous training for professionals who work with children, as well as the importance of public policies that promote inclusion in various contexts. Understanding the barriers and facilitators can help to create more effective strategies, guaranteeing access and participation for these children in social and recreational activities, which are fundamental for their development and integration into the community.

Keywords: atypical development, aquatic stimulation, facilitators and barriers

Conflict of interest: The authors declare no conflict of interest.

Funding: Not applicable.

Ethics committee approval: CAAE n.º 58267522.0.0000.5504.

Registration: Not applicable.

<https://doi.org/10.1016/j.bjpt.2025.101372>

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EFFECTS OF NEUROFUNCTIONAL REHABILITATION ON FUNCTIONALITY, PERFORMANCE AND ACTIVITIES IN CHILDREN DIAGNOSED WITH CEREBRAL PALSY: A LONGITUDINAL STUDY

Franciele Zardo, Fernanda Cechetti, Carlos Guilherme de Oliveira Menestrino, Daiane Bridi, Monique Schorn, Isabelle Cousseau, Ketlyn Leal, Sabrina Rosa De Oliveira
Universidade Federal de Ciências da Saúde de Porto Alegre (UFCSPA), Porto Alegre, RS, Brazil

Background: Long-term physiotherapeutic follow-up is essential for optimizing motor and functional development in children diagnosed with cerebral palsy. As a highly heterogeneous condition, cerebral palsy significantly impacts mobility, social participation, and independence in diverse ways. Understanding the long-term effects of neurofunctional rehabilitation is crucial for improving therapeutic interventions and patient outcomes.

Objectives: This study aims to evaluate the effects of neurofunctional rehabilitation on gross motor function, self-care, mobility, and social function in children with cerebral palsy. A secondary objective was to analyze how different severity levels classified by the Gross Motor Function Classification System (GMFCS) influence rehabilitation outcomes.

Methods: A prospective longitudinal cohort study was conducted with 29 children aged 0 to 12 years diagnosed with cerebral palsy. Assessments were performed at four time points over nine months. Gross motor function was measured using the Gross Motor Function Measure (GMFM), while self-care, mobility, and social function were evaluated using the Pediatric Evaluation of Disability Inventory (PEDI). Participants were classified according to the GMFCS and analyzed in two groups: levels I-II-III and levels IV-V.

Results: Significant improvements in gross motor function were observed across all GMFCS levels. Children classified as levels I-II-III showed significant progress in standing and walking-related scales, whereas those at levels IV-V demonstrated improvements mainly in seated posture stability. Regarding mobility and social function, only children in levels I-II-III exhibited significant advancements. No substantial changes were found in the need for assistance among children or caregivers in levels IV-V.

Conclusion: Neurofunctional rehabilitation proved effective in improving gross motor function across all GMFCS levels, particularly enhancing mobility and social function in children with milder impairments. For those with more severe motor limitations, the