



## ORIGINAL ARTICLE

# Functional performance of school children diagnosed with developmental delay up to two years of age



Lílian de Fátima Dornelas<sup>a,\*</sup>, Lívia de Castro Magalhães<sup>b</sup>

<sup>a</sup> Prefeitura Municipal de Uberlândia, Uberlândia, MG, Brazil

<sup>b</sup> Departamento de Terapia Ocupacional, Escola de Educação Física, Fisioterapia, Educação Física (EFTO), Universidade Federal de Minas Gerais (UFMG), Belo Horizonte, MG, Brazil

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### KEYWORDS

Evaluation;  
Child development;  
Students

### Abstract

**Objective:** To compare the functional performance of students diagnosed with developmental delay (DD) up to two years of age with peers exhibiting typical development.

**Methods:** Cross-sectional study with functional performance assessment of children diagnosed with DD up to two years of age compared to those with typical development at seven to eight years of age. Each group consisted of 45 children, selected by non-random sampling, evaluated for motor skills, quality of home environment, school participation and performance. ANOVA and the Binomial test for two proportions were used to assess differences between groups.

**Results:** The group with DD had lower motor skills when compared to the typical group. While 66.7% of children in the typical group showed adequate school participation, receiving aid in cognitive and behavioral tasks similar to that offered to other children at the same level, only 22.2% of children with DD showed the same performance. Although 53.3% of the children with DD achieved an academic performance expected for the school level, there were limitations in some activities. Only two indicators of family environment, diversity and activities with parents at home, showed statistically significant difference between the groups, with advantage being shown for the typical group.

**Conclusions:** Children with DD have persistent difficulties at school age, with motor deficit, restrictions in school activity performance and low participation in the school context, as well as significantly lower functional performance when compared to children without DD. A systematic monitoring of this population is recommended to identify needs and minimize future problems.

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\* Corresponding author.

E-mail: [liliandefatima@hotmail.com](mailto:liliandefatima@hotmail.com) (L.F. Dornelas).

**PALAVRAS-CHAVE**

Avaliação;  
Desenvolvimento  
infantil;  
Escolares

**Desempenho funcional de escolares que receberam diagnóstico de atraso do desenvolvimento neuropsicomotor até os dois anos****Resumo**

*Objetivo:* Comparar o desempenho funcional de escolares que receberam diagnóstico de atraso do desenvolvimento neuropsicomotor (ADNPM) até dois anos com pares com desenvolvimento típico.

*Métodos:* Estudo transversal com avaliação do desempenho funcional em crianças que receberam diagnóstico de ADNPM até os dois anos e em crianças com desenvolvimento típico nas idades de sete e oito anos. Cada grupo foi constituído por 45 crianças, selecionadas por amostragem não aleatória, avaliadas quanto à coordenação motora, qualidade do ambiente familiar, participação e desempenho na escola. Os testes Anova e binomial para duas proporções foram usados para verificar diferença entre os grupos.

*Resultados:* O grupo com ADNPM obteve desempenho motor inferior quando comparado com o grupo típico. Enquanto 66,7% das crianças do grupo típico tiveram participação adequada na escola, receberam auxílio nas tarefas cognitivas e comportamentais similar ao oferecido às demais crianças do mesmo nível, apenas 22,2% crianças com atraso apresentaram o mesmo desempenho. Embora 53,3% das crianças com atraso tenham atingido desempenho acadêmico esperado para o nível escolar, houve limitações em algumas atividades. Apenas dois indicadores do ambiente familiar, diversidade e atividade com os pais em casa mostraram diferença estatisticamente significativa entre os grupos, com vantagem para o grupo típico.

*Conclusões:* Crianças com ADNPM apresentam dificuldades persistentes na idade escolar, com déficit motor, restrições no desempenho de atividades escolares e baixa participação no contexto escolar, além de desempenho funcional significativamente inferior ao de crianças sem história de atraso. Recomenda-se o acompanhamento sistemático dessa população para identificar necessidades e minimizar problemas futuros.

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**Introduction**

Developmental delay (DD) is a condition in which the child is not developing and/or does not achieve skills consistent with what is expected for their age.<sup>1</sup> Although the term “delay” gives the impression of a relatively benign condition that improves with age, many of those children do not receive follow-up with systematic assessments and have problems at school age and adult life.<sup>2</sup> In fact, it is estimated that 60–70% of children born with risk conditions will require support from special education services in elementary and high school, and there is evidence that gaps in the development of children about to enter school may impair their school performance and future opportunities.<sup>3</sup>

Studies<sup>4,5</sup> on the development outcome at school age indicate that DD has an effect on a complex range of symptoms, without a defined disease profile, and thus it is important to obtain information about what the child is capable of doing in a daily context, to better understand its consequences. Although it is recommended that the use of the term “DD” be restricted to the first five years of life,<sup>6</sup> in Brazil its use is common throughout childhood and adolescence, without a better understanding of the development outcome of these children, especially regarding functional performance in the school context. We should therefore investigate the outcome of these children in terms of final diagnosis, as well as the impact of the delay on the functional and academic performance.

As explained by the International Classification of Functioning, Disability and Health–ICF–WHO (World Health Organization),<sup>7</sup> in order to understand the impact of a health condition such as DD on the child’s life, it is important to perform an extensive assessment to obtain information not only about basic body functions, but also on the activity and participation in different contexts. In this study, the ICF–WHO model was used to guide the process of assessing children with a history of DD and describe the child’s performance in the school context. The aim of the study was to compare the functional performance of students who were diagnosed with DD up to two years of age, with that of peers with typical development.

**Method**

This was a cross-sectional study to evaluate the functional performance of students who were diagnosed with DD up to two years of age and those with typical development at seven to eight years of age, selected by non-random sampling and matched for age, gender and family income. Each group consisted of 45 children and the subjects with DD were recruited from Associação de Assistência à Criança Deficiente de Minas Gerais (AACD/MG); their peers were selected from the same schools where the children from the first group studied.

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