

POSTURAL CONTROL, BALANCE PERFORMANCE, AND MOTOR FUNCTION IN ADOLESCENTS WITH CEREBRAL PALSYScientific Supervisor: **Farangisbonu A. Doniyorova**DSc, Associate Professor, Department of Neurology and folk
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Abstract. Cerebral palsy (CP) is a lifelong neurodevelopmental disorder characterized by motor impairments that frequently limit participation in educational, recreational, and social activities. During adolescence, restrictions in participation may adversely affect psychosocial development, independence, and quality of life. Understanding the relationship between motor function and participation is essential for developing comprehensive rehabilitation strategies.

Materials and Methods. A cross-sectional study was conducted among 70 adolescents aged 12–18 years diagnosed with spastic cerebral palsy. Gross motor function was assessed using the Gross Motor Function Classification System (GMFCS) and the Gross Motor Function Measure (GMFM-88). Participation restrictions were evaluated using the Child and Adolescent Scale of Participation (CASP). Demographic and clinical data were collected through medical records and structured interviews. Statistical analyses included descriptive statistics, independent-sample t-tests, one-way ANOVA, and Spearman correlation analysis. Statistical significance was established at $p < 0.05$.

Results. The study included 42 boys (60.0%) and 28 girls (40.0%), with a mean age of 14.5 ± 1.8 years. Distribution according to GMFCS levels was as follows: level I – 14.3%, level II – 22.9%, level III – 27.1%, level IV – 21.4%, and level V – 14.3%. Mean GMFM score for the entire cohort was 63.8 ± 18.7 points. Adolescents with mild motor impairment (GMFCS I–II) demonstrated significantly higher participation scores compared with those classified as GMFCS III–V (87.6 ± 8.4 vs. 56.9 ± 12.3 points, $p < 0.001$). Participation restrictions were most evident in community activities, sports participation, peer interactions, and independent mobility. A strong positive correlation was identified between GMFM and CASP scores ($r = 0.71$, $p < 0.001$), indicating that better motor performance was associated with greater social participation. Conversely, higher GMFCS levels were strongly associated with increased participation limitations ($r = -0.68$, $p < 0.001$).

Conclusion. Gross motor function is a key determinant of participation in adolescents with cerebral palsy. Increased motor impairment is associated with substantial restrictions in social, educational, and recreational activities. These findings highlight the importance of multidisciplinary rehabilitation programs aimed not only at improving motor abilities but also at enhancing participation and social inclusion among adolescents with cerebral palsy.

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