



The effect of early term rehabilitation program to gross motor functional levels on a case with Down Syndrome Children



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Abstract

Down syndrome or mongolism, also known as trisomy 21, is a chromosomal condition caused by the presence of all or part of an extra 21st chromosome. Down syndrome can be identified in a baby at birth, or by prenatal screening. The incidence of Down syndrome in our country is estimated at 1/800 – 1000 births. This higher value of incidence is due to more intermarriages and elder ages of mothers. In addition to motor function disability, mental, hearing, vision, speech problems, congenital heart disease, thyroid and immune system deficiencies can be seen. There are three types of Down syndrome disorders; Trisomy 21, Mosaicism and Robertsonian translocation.

Down syndrome children have the following physical characteristics: an abnormally small chin- microgenia, an unusually round face, protruding or oversized tongue-macroglossia, small nose and ears, shorter limbs, a single instead of a double crease across one or both palms- a single transverse palmarcrease, small and slanting eyes, shorter and chubby fingers and poor muscle tone. The physical therapy program can be more effective, if in early stages, neuro interventional treatment approaches has been started for the increase of muscle strength, perception and motor skills.

In this study, we aimed to investigate the effects of the physical therapy program to gross motor functional levels of children's with Down syndrome at Physical Therapy Department in Turkish Military Forces (TSK) Health Foundation Private Education School.

Results

The study involved 15 children with DS; 5 (33.3%) female and 10 (66.7%) were male, mean age was 35.13 ± 7.94 months. According to GMFCS, while the initial assessment of children with DS, 1(6.7%) Level I, 1(6.7%) Level II, 7(46.6%) Level III and 6(40%) Level IV, for the last evaluation all of the children was Level I. These values are shown at Table 1.

GMFCS reviews $\chi^2(3, N=15)=38.43, p=0.000$, and GMFM scores $F(1.83, 25.65)=130.88, p=0.000$ were found statistically significant differences between 6 month periods by search of a physical therapist for children with DS. The increases of GMFM values for each period are shown at Table 2.

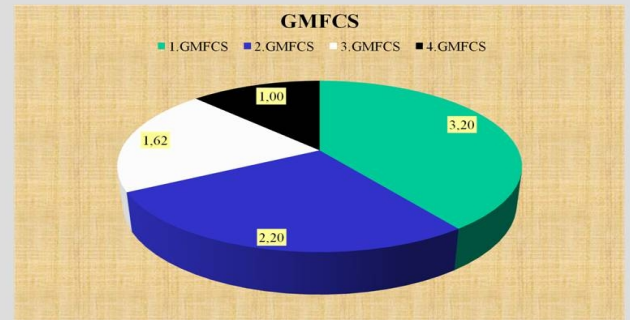


Table 2: GMFCS Levels

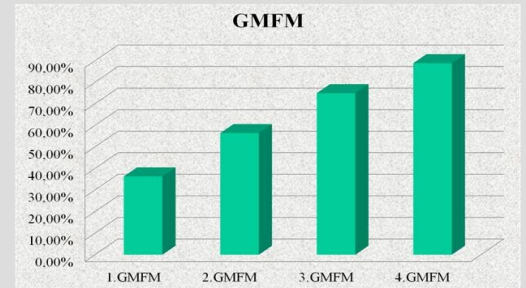


Table 2: GMFM Values For Each Period



Methods and Materials

In this study, 15 DS children who have a regular program of physical therapy were included. The children's demographic information such as age and gender were recorded. Levels of gross motor function of these cases, the Gross Motor Functional Classification System-GMFCS (Gross Motor Function Classification System-GMFCS) and Gross Motor Function Measure - GMFM (Gross Motor Function Measurement) were evaluated 4 different times for 6 month periods.

Data were analyzed by SPSS 15.0 statistical software using Friedman, Wilcoxon and for repeated measures Anova test was used. $p < 0.05$ was considered as statistically significant difference.

Conclusions

These results show that there is an increase of level of gross motor function with DS children who had physical therapy program.

For this reason, it must be focused on gross motor development from an early period, and development is thought to be evaluated at regular intervals with standardized measurements for children with DS.

