

WCES 2012

Does the receptive language development affect the functional Independence levels in children with Cerebral Palsy?

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Abstract

Language and speech disorders are seen in 31-88% of the children with Cerebral Palsy (CP). As visual, auditory, sensory disorders are common in children with CP, these disorders may cause negative factors for language development. For this reason, in addition to physical assessment, developmental assessments should also include detailed assessment of all language and speech functions. Therefore; this study aimed to assess the relation between functional capacity and receptive language development in children with CP by answering to the question: Do the receptive language development affect the functional independence levels in children with CP? The study included 65 children with CP. Language development was assessed by Peabody Picture Vocabulary Test and functional independence by Functional Independence Measure for Children (WeeFIM). Receptive language development and subsection of WeeFIM; communication, social perception and total score had significant relation between each other ($p < 0.05$).

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Keywords: Cerebral Palsy, Functional Capacity, Receptive Language Development.

1. Introduction

In addition to motor problems, many accompanying conditions such as auditory, speech, visual, mental, communication and cognitive disorders may exist in children with Cerebral Palsy (CP) which will cause difficulties in gaining the speech and the language (Nelson & Grether, 1999; Bax, Goldstein, Rosenbaum, Leviton & Panneth, 2005). It is expressed that in 31-88% of children with CP have language and speech disorders (Topbaş, 2005).

Language and speech disorder is defined as the deviation of expressive and receptive speech from normal development. Neuromotor difficulties of children with CP affect the integration of the child with the environment beginning from infancy and language development generally shows delays when compared with the normal children.

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Language problems may occur related to location and content of lesion, mental disability or regardless of mental

disability. In addition, accompanying conditions of children with CP perform a negative factor for language development. For this reason, in addition to physical assessments of children with CP, developmental assessments should include all language and speech function evaluations (Ege, 2006). Therefore; this study aimed to assess the relation between functional capacity and receptive language development in children with CP by answering to the question: Do the receptive language development affect the functional independence levels in children with CP?

2. Method

The study included 65 children with CP with a mean age of 7.31 ± 2.14 (min: 5- max: 12) years and with 22 (33.8%) girls and 43 (66.2%) boys.

Language development was assessed by Peabody Picture Vocabulary Test (Katz, Önen, Demir, Uzlukaya & Uludağ, 1974). This test utilized individually to the children between 2-12 years of age and aims to define the word development by the pictures. Test includes of 100 cards in which each card have 4 pictures from easy to difficult order and a record form. The child is requested to show the pictures which indicate the meaning of the word. Obtained raw score is evaluated according to norm tables and receptive language level of the child is determined.

Functional independence of children was measured by Functional Independence Measure for Children (WeeFIM). The WeeFIM instrument contains 18 items divided into the following six areas: self-care, sphincter control, transfers, locomotion, communication, and social cognition. The motor subscale includes the areas of self-care, sphincter control, transfer and locomotion, and contains 13 items. The remaining two areas (communication and social cognition) comprise the cognitive subscale. Each area consists of two to six items scored separately. A 7-level ordinal rating system ranging from 7 (complete independence) to 1 (total assistance) is used to rate each item. Minimum total score is 18 (totally dependent in all activities) and maximum total score is 126 (totally independent in all activities) (Msall, Digaudio, Rogers, Laforest, Catanzaro, Campbell, Wilczenski & Duffy, 1994; Msall, Digaudio, Duffy, Laforest, Braun & Granger; 1994).

Functional independence levels of the children were classified according to their WeeFIM scores between: 18-36 as total dependent, 37-90 as modified dependent and 91-126 as totally independent (Msall, Digaudio, Rogers, Laforest, Catanzaro, Campbell, Wilczenski & Duffy, 1994; Msall, Digaudio, Duffy, Laforest, Braun & Granger; 1994; Tur, Küçükdeveci, Kutlay, Yavuzer, Elhan, Tennat, 2009).

The data was evaluated by t Test and Pearson Correlation Test, using the Statistical Package for Social Sciences (SPSS 18.0) packet programme

3. Results

According to Peabody Picture Vocabulary Test, receptive language development of 35 (53,8%) was convenient for their age although 30 (46,2%) were below their age. The children who were convenient for their age performed the first group while children who were below their age included second group.

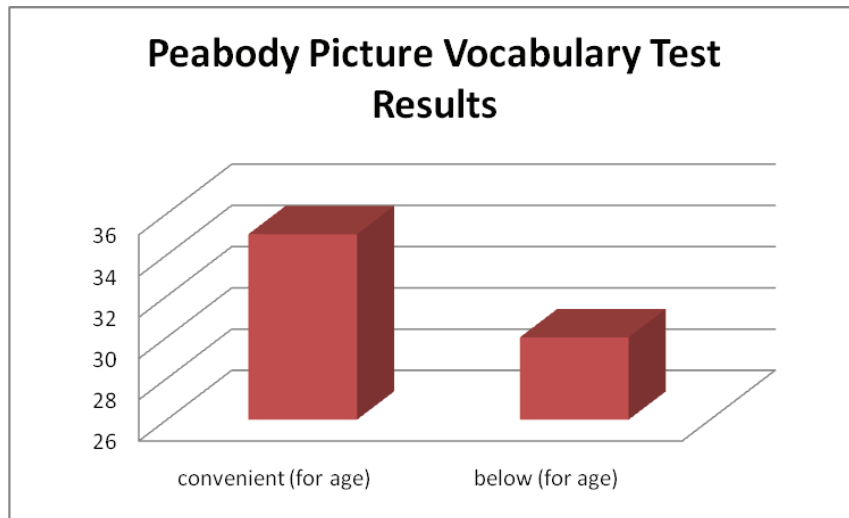


Figure. 1 Peabody Picture Vocabulary Test Results

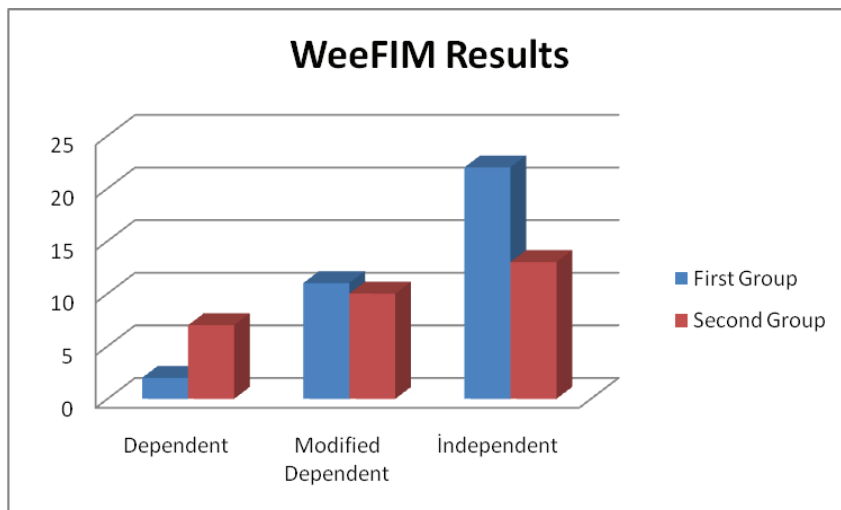


Figure. 2 WeeFIM Results

Receptive language development and subsection of WeeFIM; communication ($p=0.00$), social perception ($p=0.00$) and total score ($p=0.00$) had significant relation between each other.

4. Discussion and recommendation

Receptive language developments affect the communication and social perception of functional independence. Functional independence level and speech-language development assessment of children with CP can guide the rehabilitation and can increase the rehabilitation effectiveness in children with CP. Rehabilitation approaches have

great importance in the treatment of CP. Detailed assessment of the motor, cognitive, speech development of the children with CP and taking into consideration of the accompanying conditions will provide to determine reasonable and valid rehabilitation programmes.

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