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Activities of Daily Living, Sleep behavior and Quality of Life: A comparison between Typically Developing Children and Children with Developmental Coordination Disorder.

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Abstract

Children with Developmental Coordination Disorder (DCD) are those who have a deficiency in the development of motor coordination, which significantly interferes with the performance of activities of daily living (ADL) and their academic achievements, and notwithstanding, it is not part of a wider medical problem or mental retardation. The incidence of developmental coordination disorder in children aged 5-11 years is 5%-6% (APA, 2013). In recent years, the percentage of children with DCD referred to occupational therapy treatment has been increasing. The motor difficulties of children with DCD have a significant impact on performance of a wide range of ADL, impairments in everyday functioning interfere with the child's ability to participate in family and school activities and may lead to poor quality of life. Moreover, there is evidence in the literature that children with DCD may suffer from more sleep problems compared to typically developing children.

Considering the importance of adequate daytime functioning and sleep, and their possible influence on the child's wellbeing, **the purpose of the current study** was to expand our knowledge about the implications of DCD on the performance of activities of daily living, sleep behavior, and quality of life, by comparing these measures between children with typical development and children diagnosed with DCD.

The study population included 60 children aged 4-9-year-old which were divided evenly into two groups: 1. Study group which included 30 children with DCD. 2. Control group which included 30 typically developing children who were matched to the study group by their age, gender and nationality and who were located through kindergarten, school, and community contacts.

The study group was located from the Child Development Center in Naharia after they were diagnosed by the study researcher as DCD according to the DSM -V (APA, 2013), according to their grade in M-ABC-2 test (Henderson, Sugden, & Barnett, 2007), and their score in the Children Activity Scale – Parents (ChAS-P) questionnaire (Rosenblum, 2006). The DCD diagnosis was also verified by the neuro-developmental pediatrician working at the Child Developmental Center.

The child's performance of activities of daily living was evaluated by the Performance of Daily Activities Questionnaire (Summers, Dewey, & Larkin, 2005). The sleep behavior was evaluated by the Children's Sleep Habits Questionnaire- CSHQ (Owens, Spirito, & McGuinn, 2000), and the quality of life was evaluated by Pediatric Quality of Life Inventory™ 4.0 Short Form 15 questionnaire (Varni, Seid, & Rode, 1999).

The study hypothesis were:

1. Typically developing children will present significantly better performance in ADL in comparison with Children with DCD as it will be reflected in the Performance of Daily Activities Questionnaire.
2. Typically developing children will present significantly less sleep behavior deficits in comparison with children with DCD as it will be reflected in the Children's Sleep Habits Questionnaire – CSHQ.
3. The QoL of typically developing children will be significantly higher in comparison with children with DCD as it will be reflected in the Pediatric Quality of Life Inventory - PedsQL™ measurement.
4. A significant negative correlation will be found among the study group between sleep behavior and their performance in ADL.
5. A significant positive correlation will be found among the study group between their performance in ADL and their QoL.

6. The children's performance in ADL and their sleep behavior scores will predict their QoL scores.

Results: According to the study results, the performance of children with DCD in ADL including all its components (self-maintenance, eating skills, play, and academic performance) was found significantly lower than the performance of typically developing children. No differences were found between the study groups in the sleep behavior including all its components. It should be noted that both groups have not passed the sensitive clinical cut-off for the identification of probable sleep problems of the CSHQ questionnaire. In other words, according to the parents report, the children in both groups do not suffer from sleep problems. A significant difference was found between the study groups in the PedsQL™'s overall score and its two summaries (Physical and Psychosocial Health Summary) in favor of the control group. A significant negative correlation between the CSHQ's subscale "bedtime resistance" and the Performance of Daily Activities Questionnaire's subscale "eating skills" among the study group, meaning, the greater bedtime resistance, the lower eating performance. Besides this only negative correlation, no other significant correlations were found between sleep behavior and ADL including all its components among the study group. A positive significant correlation was found between the Performance of Daily Activities Questionnaire's subscale "play skills" and the PedsQL™'s subscale 'Physical Health Summary' among the study group, meaning, the greater the performance of the children in play skills, the greater their physical health. No significant correlations were found between ADL and quality of life including all its components. The only predictor found to children's quality of life is their group ascription, as the proportion of variance explained by quality of life by group ascription (DCD or control group) was 65%.

Conclusions: children with DCD demonstrate poorer performance in activities of daily living and poorer quality of life compared to typically developing children. Moreover, correlations have been found between bedtime resistance and eating skills, and between play skills and physical health. Due to the possible impacts of DCD on the physical, psychological and social performance and on

the child's daily functioning, it is important for all professionals who treat children with DCD to relate to the variety of aspects of their functioning during the assessment process in order to plan a comprehensive intervention program that will lead to independence in daily function and to adequate quality of life.