Impact of sleep behavioral problems in the performance of working memory of primary school-aged children

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Introduction: Behavioral sleep problems are one of the most challenging issues in childhood which have been increasing these years by developing computer-based games and the internet. These disorders may influence the learning processing by disrupting the working memory. In this study, the prevalence and effect of these problems on school-aged children are surveyed.

Materials and Methods: We studied 105 primary school students (7-12 years old). Firstly, we identified behavioral sleep problems by BEARS screening questionnaire. Then we evaluated the students’ working memory capacity by Daniman and Carpenter tests. Using SPSS and independent t-test, the comparison study of working memory scales among children with and without sleep problems was done.

Results: Overall 37 students (35.23%) had one or more sleep problem. The most common problem was over sleepiness during the day (56.7%); after that, the most prevalent disorders were frequent awakening during the night and difficulty to start of sleep respectively (40.5% and 21.6%). The mean of working memory score was 69.2±10.98 (35.07-94.44). In student with sleep problems, it was 61.55±10.95 and with the other students, it was 73.36±8.25. The difference between the two groups was statistically significant.

Conclusion: Having a great role in learning and educational progress, working memory is deeply influenced by sleep disorders. Therefore, early diagnosis of these problems and training the principles of sleep hygiene is of crucial importance.