

SLEEP QUALITY IN OBESIC CHILDREN

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Introduction

Overweight and obesity in children is a global problem in the world. According to WHO data for the period from 1975 to 2016 the number of obese children from 5 to 19 years of age in the world has increased more than 4 times (WHO. 2021 URL: <https://www.who.int/ru/news-room/fact-sheets/detail/obesity-and-overweight>). The enormous increase in the incidence of obesity among children has led to an exacerbation of the problem of sleep disorders. From the point of view of brain electrophysiology, sleep is defined as a normal biological process of consciousness in which there are criteria for brain waves. A child spends more than 30% of his life sleeping, and this condition is critical for growth and development. For this reason, sleep pathologies and their clinical consequences have become priority areas of scientific research in recent years [Sánchez-López AM, Noack-Segovia JP., et al. 2020, Aguilar M.C., Sánchez A.L., et al. 2013].

Purpose of the study

To study the quality of sleep and its deprivation in children with obesity degrees I and II.

Materials and methods of research

At the city adolescent clinic in Tashkent, 60 children aged 13-17 years were examined. Among them were 15 children with normal weight with body mass index values ranging from -1.0 to +1 standard deviation (SD, WHO, 2009) (control group). Comparative group – overweight children, n=15, (BMI from +2.0 to +3.0 SD). Two main groups consisted of 30 children with obesity, 15 of them with I and the remaining 15 with II degrees (BMI equal to or more than +3.0 SD). Clinical manifestations of sleep disorders were carried out on the basis of the Russian version of a special questionnaire compiled by Kelmanson I.A., (2017) “Children’s Sleep Habits Questionnaire”, (CSHQ, Chervin R.D. et al., 2000). reflecting a subjective assessment of sleep quality using a 10-point system. A deviation from the norm was considered a score <22. The Epworth scale was used to assess



daytime sleepiness (normative score 0-8 points).

Research results

Based on the frequency and structure of complaints from the examined children, it was found that children with stage II were significantly more likely to have obesity patients reported shorter (80.0%, $p<0.001$), restless (66.7%, $p<0.01$) sleep and, as a consequence, excessive daytime sleepiness (60.6%, $p<0.01$) compared to children of the control group (20.0%, 6.7%, 13.3%, respectively). A similar picture emerged for children from the 1st grade. obesity without significant differences relative to control. According to the questionnaire of Kelmanson I.A. (2017) found that in obese children, sleep disturbance was clinically manifested by more difficulty falling asleep (46.7% and 60.6%, $p < 0.05$ children with I and II obesity, respectively) and waking up in the morning (80.0%, $p<0.05$, 93.3%, $p<0.01$, respectively, children with I and II stages of obesity, versus 40.0% control). A significantly high frequency of sleep behavior disorders was also noted, especially in children from stage II. obesity (80.0%, $p<0.05$, versus 33.3% in the control). Results of a questionnaire survey of the Russian version of Kelmanson I.A. (2017) – CSHQ, in points, showed that obese children scored significantly lower than children in the control and comparative groups (16.6b., $p<0.05$, 13.2b., $p<0.01$, respectively, children with I and II stages of obesity, against control 25.7b). On the contrary, according to the Epworth Daytime Sleepiness Scale (1991), obese children, especially those with stage II. scored the highest points (12.9b, versus 4.3b in the control group).

Conclusion

Sleep disturbance in obese children was clinically manifested by excessive difficulty falling asleep and waking up in the morning, as well as changes in behavior during sleep (restless sleep, bruxism, night awakenings, sleepwalking) with a significant frequency in children with stage 2 obesity. Direct reliable correlations were established between sleep duration of less than 7 hours and BMI ($r=0.80$, $p<0.001$).

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