



Analyzing adolescent sleep is crucial for understanding the possible effects of sleep disturbance on the development of their reproductive systems and future fertility

We read with interest the recent article by Hrozanova et al. [1], which used the SOMNOFY® sleep monitor to analyze sleep, and found that social jetlag was less severe in girls than boys. They also concluded that adolescent boys have longer sleep onset latency at weekends, and less REM sleep during weekdays, than girls. We write to highlight the possible effects of social jetlag on the reproductive system of teenagers, and comment on the best methods to analyze sleep patterns.

Sleep is essential for homeostatic maintenance, including in respect of the immunological, endocrine and reproductive systems [2]. Any modulation of the circadian rhythm pacemaker located in the suprachiasmatic nucleus can impact the hypothalamus-pituitary-gonadal (HPG) axis. It has already been shown that boys subjected to disrupted sleep patterns present altered testosterone levels [3]. Sleep changes can promote changes in spermatogenesis and increase the risk of infertility [2]. Disruption of the HPG axis, cytokine storms and the overproduction of reactive oxygen species may underlie the interplay between poor sleep quality and sperm functionality impairment [4].

Future studies should use polysomnography (PSG), which can more accurately detect sleep fragmentation and changes in N1 sleep than the SOMNOFY® monitor [5]. These two alterations are frequently observed in obstructive sleep apnea, which is strongly associated with obesity, and is a significant public health problem with a growing prevalence among teenagers.

Puberty is crucial for the establishment of the reproductive hormonal profile across the lifespan, and sleep disturbances initiated during adolescence may be sustained into adulthood; thus, the social jetlag highlighted by Hrozanova et al. might have a long-term impact on male fertility. We propose that the HPG axis, testosterone levels and sperm functionally are interesting factors that should be further investigated in future studies involving the objective analysis of sleep in adolescents.

Declaration of competing interest

The authors declare no conflict of interest.

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