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Conclusions: It was found that two out of three toddlers had increased screen-time and that this increase was significantly associated with more screen time being significantly increase most of them also reported that the coronavirus period also affected their children’s sleep routine, such as a later bedtime. Given the importance of good sleep to child development in general, and to learning and emotional regulation in particular, parents and clinicians should be aware of these risks. It is the task of professionals to develop intervention programs to support parents and their children during the present challenging era. More studies in diverse cultures and age groups are called for.

Acknowledgements:

GENDER AND RUMINATION AS PREDICTORS OF EMOTIONAL AROUSAL AFTER SLEEP RESTRICTION IN PRE-PUBERTAL CHILDREN
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Introduction: There is an abundance of evidence that poor sleep predicts negative behavioral, emotional, academic, and physical health outcomes in children. However, sleep loss is not universal in its negative effects and may look different among individuals with different cognitive response styles including those who are more likely to ruminate. Little is known however about rumination among pre-pubertal children including whether a ruminatory cognitive response style predicts emotional responses to sleep loss. The current study examined these relationships including the potential moderational role of gender since females are known to ruminate more than males.

Materials and Methods: A sample of 53 healthy, pre-pubertal children (7-11 years) completed emotional assessments in the lab when rested and after two nights of sleep restriction (7h and 6h, respectively) monitored with objective sleep measures. At baseline, participants completed questionnaires including the Children’s Response Styles Scale (CRSS) used to measure tendency for rumination. Subjective reports of arousal were measured using the Self-Assessment Manikin (SAM) in response to a series of positive, neutral, and negative images from the International Affective Picture System (IAPS). We conducted a moderation analysis using multiple linear regression to examine whether rumination scores predicted emotional arousal ratings and whether rumination and gender had an interactional effect.

Results: After sleep restriction, children with greater CRSS rumination scores showed significantly less arousal in response to neutral (Beta = -0.57, p < .001) but not positive (Beta = -0.23, n.s) or negative (Beta = -0.17, n.s) IAPS images. There were no main or interaction effects based on gender.

Conclusions: Although previous research has found rumination to mediate the relationship between sleep problems and anxiety among teens, to our knowledge, there have been no studies examining rumination in relation to sleep in pre-pubertal children. Our findings suggest that rumination does not predict responses to ‘emotional stimuli’ (e.g., negative and positive IAPS images) after sleep loss among pre-pubertal children, but may serve to distract children from non-emotional stimuli.

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IMPACT OF COVID-19 PANDEMIC ON THE SLEEP OF HEALTHCARE WORKERS’ OFFSPRING
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Introduction: The COVID-19 pandemic led to work overload in health care workers (HCW) either in the form of COVID-19 related or non-related work. COVID-19 related work is associated with increased anxiety levels and, in some cases, a shift in family dynamics. The aim of this study was to evaluate the impact of this supplementary work and, specifically, COVID-19 related supplementary work in the sleep of HCW offspring in our hospital.

Materials and Methods: A cross-sectional, anonymized, self-reported, online questionnaire survey regarding the period of January to March 2021 was conducted at a level 2 hospital. SPSS was used for statistical testing (Chi-square test or Fisher’s exact test).

Results: 97 HCW were included, 160 offspring younger than 18y, of which 84% were male, with a median age of 7 years [0-17y]. As for parental perceptions regarding their offspring’s sleep: 40.0% of the HCW offspring sleep less than desirable, 36.9% take longer to sleep than desirable, 21.5% wake up earlier than desirable and 18.3% wake up more often during the night than desirable. The majority of all HCW offspring: wake up 1-4h/day of screen time (57.5%), mainly before 8pm (82.5%); have their bedtime before 9pm (83.1%) with low bedtime resistance; lie in bed for 8h or more (93.3%) and practice physical exercise before 6pm (57.5%).

During the COVID-19 pandemic, HCW with supplementary work (n = 97) managed to maintain their offspring’s sleeping habits, namely lower bedtime resistance, physical exercise before 6pm and 1-4h/day of screen time. Specifically, in the COVID-19 supplementary work group (n = 56), HCW managed to keep their offspring’s bedtime consistent.

In the non supplementary work group (n = 63) a difference was found between HCW with COVID-19 related work, when compared to HCW without COVID-19 related work. The group with COVID-19 related work (n = 29) managed to keep their offspring’s sleeping habits, namely lower bedtime resistance, physical exercise before 6pm; screen time 1-4h/day, and before 8pm. However, those who didn’t work in COVID-19 areas (n = 34) showed worse sleeping habits, with higher bedtime resistance, physical exercise after 6pm and screen time ≥5h/day.

Conclusions: Globally, HCW perceive their offspring’s sleep quality as worse due to supplementary work during COVID-19 pandemic, which may serve to distract children from non-emotional stimuli.

HOW DO CHILDREN AND ADOLESCENTS OF SEPARATED PARENTS SLEEP? AN INVESTIGATION OF CUSTODY ARRANGEMENTS, SLEEP HABITS, SLEEP PROBLEMS, AND SLEEP DURATION IN SWEDEN
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Introduction: An increasing number of children and adolescents divide their time between their separated parents’ homes. Although marital conflict is disadvantageous for children’s sleep, little is known about how children of separated parents sleep. The objective was to investigate the association between children’s custody arrangements and sleep habits and sleep initiation difficulties.

Materials and Methods: Cross-sectional questionnaire data from the 2013 Health Behaviours of School-aged Children was used. The sample included over 7000 adolescents (50% girls), aged 11-15. Nuclear families were used as a reference in all analyses. The sleep issues were defined as follows: Less than 7h of sleep = insufficient sleep; sleep initiation difficulties >1 per week = insomnia; bedtimes after 11 pm = late bedtimes; more than 2h variability between weekend and weekday bedtimes = jetlag. Short sleep duration, insomnia, late bedtimes and jetlag were respectively used as outcomes from regression analyses where custody was included as independent variables.

Results: The results show differences by custody arrangement, but they are not uniform across the dependent variables. Children and adolescents in sole maternal custody were less likely to sleep as much as recommended (P < .001), more likely to have late bedtimes (P < .001), report sleep initiation difficulties (P < .01) and to report social jetlag between school mornings and weekends (P < .05) compared to those in 2-parent families. Shared physical custody was associated with a higher likelihood of late bedtimes (P < .05) and sleep initiation difficulties (P < .05) compared to those in 2-parent families, but not of sleeping less than recommended or reporting social jetlag. Less-than-equal sharing was generally associated with worse sleep than in 2-parent families.

Conclusions: As custody arrangements seem to be associated with sleep, it is important to understand the mechanisms behind the findings.

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SLEEP? AN INVESTIGATION OF CUSTODY ARRANGEMENTS, SLEEP HABITS, SLEEP PROBLEMS, AND SLEEP DURATION IN SWEDEN
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Introduction: An increasing number of children and adolescents have increased screen-time and that this increase was significantly associated with more screen time being significantly increase most of them also reported that the coronavirus period also affected their children’s sleep routine, such as a later bedtime. Given the importance of good sleep to child development in general, and to learning and emotional regulation in particular, parents and clinicians should be aware of these risks. It is the task of professionals to develop intervention programs to support parents and their children during the present challenging era. More studies in diverse cultures and age groups are called for.

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poor. Surprisingly, during the COVID-19 pandemic, HCW with supplementary work did not exhibit poorer sleep hygiene. Specifically, HCW with COVID-19 related supplementary work did not exhibit poorer sleep hygiene. Poorer sleep hygiene was observed in the offsprings of HCW without supplementary work and without COVID-19 related work. A wider sample size could improve outcome fiability.

### INTERACTIONS BETWEEN SLEEP AND GUT BACTERIA IN HEALTHY DEVELOPING INFANTS

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**Introduction:** Healthy infant development is driven by the maturation of different physiological processes. Two crucial processes are the establishment of sleep rhythms and the growth of a complex holobiontic ecosystem with gut bacteria. Studies have shown a bi-directional link between sleep and gut bacteria in animal models and human adults. However, no study has investigated how these two processes are linked in the first year of life nor how they contribute to healthy behavioral development.

**Materials and Methods:** We quantified habitual sleep (actigraphy-derived sleep composites Sleep Day, Sleep Night, Sleep Timing, Sleep Variability, and sleep stage) and the gut bacterial diversity (16S rRNA gene profiling for computing bacterial diversity, enterotype, and bacterial maturation index), and behavioral development (Ages and Stages Questionnaire) in 162 infants at 3, 6 and 12 months of age. With multilevel and regression models we analyzed links between habitual sleep and gut bacteria, with random intercept cross-lagged panel models we evaluated interactions with behavioral developmental outcomes. Furthermore, in a subset of 32 6-months-old infants, we collected high-density EEG data during the first 2-h of nighttime sleep to quantify slow-wave activity, theta power, and sigma power.

**Results:** We found evidence of a sleep-gut link: daytime sleep (Sleep Day) was negatively linked to gut bacteria diversity (p = 0.02), and nighttime sleep fragmentation (Sleep Activity) was positively linked to bacterial maturation index (p = 0.03) and enterotype (p = 0.048). Sleep Variability was linked to enterotype patterns (p = 0.02). We also found evidence of a sleep-brain-gut link: The two enterotypes differed in slow-wave activity (p = 0.02).

**Conclusions:** Infant sleep and gut bacteria targets as fundamental anchors for non-invasive modification to promote healthy development. Considering that many adult diseases root in early childhood, early interventions can improve lifelong health.

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### LESSONS FROM THE COVID-19 SHUTDOWN: THE WAITLIST CHALLENGE & INSIGHTS IN OVERMEDICATION PATHWAYS

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**Introduction:** This study confirms that sleep complaints and sleep alterations are a key hallmark of JFS and provides important insights on the impact of sleep disturbances on other relevant clinical domains of the disease, such as pain and depression. However, despite patients’ poor subjective sleep assessment, objective sleep macrostructure is preserved when compared to healthy subjects and only few polysomnographic variables are significantly different; more specifically, N3 sleep distribution is significantly altered in JFS patients, with a higher representation during the second part of the night, thus suggesting an impairment in the physiological release process of homeostatic drive to sleep. This last phenomenon may also explain the non-restorative sleep sensation complained by patients upon awakening.