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ASSOCIATIONS BETWEEN DIET AND SLEEP HEALTH IN THE UK BIOBANK STUDY

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Introduction: It is well known that the prevalence of clinical and sub-clinical sleep issues is quite high, with a great economic and social burden on the society. As it is expected that the numbers of people suffering from clinical and subclinical sleep problems will increase in the coming years, new primary and/or complementary methods to improve and prevent poor sleep health across the population are urgently needed. In the current study, we aimed to conduct the largest investigation of diet and sleep health to date, through systematically examining the UK Biobank (UKB) data to find out whether diet quality and food groups play a role on sleep health.

Methods: This cross-sectional population-based study involved 502,494 participants. UKB food frequency and sleep questionnaires at baseline were used. Also, healthy diet, healthy sleep, and partial fibre intake scores were created. ANCOVA and regression models were used to examine the associations of healthy diet and dietary fibre intake scores with sleep health. Adjusted models included age, sex, BMI, and mental health symptomatology.

Results: We showed that both healthy diet and high partial fibre intake scores were associated with increased healthy sleep scores. Also, higher intakes of vegetables, fruits, fish, and unprocessed red meat were found to be associated with increased healthy sleep scores. On the other hand, processed meat intake was inversely associated with sleep health.

Conclusion: A healthy dietary pattern, and food groups (vegetables, fruits, fish, water) and nutrients (fibre) that are consumed as a part of a healthy dietary pattern were associated with better sleep health. Further work is needed to identify underlying mechanisms behind the impact of diet on sleep health.

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SLEEP AMONG YOUTH DURING THE COVID-19 PANDEMIC: DIFFERENCES BETWEEN SUMMER AND SCHOOL-YEAR

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Introduction: Insufficient sleep is highly prevalent among school-age youth and adolescents, which has been exacerbated by the COVID-19 pandemic. However, it is unclear whether sleep during COVID-19 varies based on whether school is in session. We examined the sleep of school-age youth and adolescents during COVID-19 and described changes in rates of insufficient sleep from summer (Time 1) to school year (Time 2). We further examined whether insufficient sleep is associated with mental health service utilization.

Methods: Adults in Southwestern Pennsylvania with children under 18 years old in their household completed a repeated cross-sectional electronic survey. The survey was designed to assess usage of, and unmet need for, health and social service resources, among other health behaviors. As responses were anonymous with no longitudinal linking, we used descriptive statistics and Chi-Square tests to examine our aims at each time point. Insufficient sleep was operationalized as <9 hours (school-age youth) and <8 hours (adolescents) of sleep duration, per National Sleep Foundation standards.

Results: Data were analyzed from n=97 school-age youth and n=83 adolescents at Time 1, and n=77 school-age youth and n=82 adolescents at Time 2. Most school-age youth (76.3%) obtained sufficient sleep at Time 1, which was maintained at Time 2. However, while 75.6% of adolescents obtained sufficient sleep at Time 1, that number fell to 63.3% at Time 2. Youth with insufficient sleep were more likely to utilize mental health services than those obtaining sufficient sleep at a borderline level of statistical significance (p-value = 0.097), after controlling for age group.

Conclusion: The rate of insufficient sleep among adolescents during COVID-19 is meaningfully higher than non-COVID, school-year rates recently reported among adolescents. Youth with insufficient sleep are more likely to utilize mental health services, though the direction of causality in that association is unknown. Future work should focus on strategies for increasing access to sleep promotion programs that support sleep health and mental health during a time of great stress.

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MENTAL HEALTH CLUSTERS DURING COVID-19 PANDEMIC ARE ASSOCIATED WITH MULTIPLE DIMENSIONS OF SLEEP IN A SAMPLE OF PREGNANT WOMEN

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Introduction: Sleep and mental health have a bidirectional relationship. During pregnancy, poor sleep health, depression and stress are common and have been associated with poor maternal and fetal outcomes. The COVID-19 pandemic has introduced additional physical and psychological risk factors, due to high mortality rate, and economic and social repercussions. This study examines whether prenatal maternal mental health clusters are associated with multiple dimensions of sleep during pregnancy in the context of the COVID-19 pandemic.

Methods: From June-December 2020, participants were recruited as part of the COVID-19 Mother Baby Outcomes (COMBO) Cohort at Columbia University (N=188; at recruitment gestational age: 32.2±8.2 weeks; age: 32±6.75 years; N=74 Hispanic, N=65 White non-Hispanic, N=27 Black/African American, N=22 other). Survey data on maternal depression (PHQ-9), perceived stress (PSS), Covid-related stress, and sleep health (PSQI) were collected. Using hierarchical clustering, we created maternal mental health clusters (MMHC). Regressions analyses were implemented to estimate the associations between multiple dimensions of sleep based on MMHC.

Results: \We derived three MMHC: Low-risk (no depression, no Covid-stress, low-moderate perceived stress), Covid-stress (no depression, moderate Covid-stress, low-moderate perceived stress) and high-risk (moderate depression, moderate Covid-stress, moderate to high perceived stress). Maternal age, gestational age, income, and race were not significantly different across clusters. The Covid-stress cluster compared to the low-risk cluster reported worse subjective sleep quality (ß=0.34±0.11, p=0.0025),