Sleep 2023 Meeting

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Title: Sleep in Long-Term Childhood Cancer Survivors Compared to Siblings: A Report from the Childhood Cancer Survivor Study.

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Introduction: Sleep problems following treatment for childhood cancer may persist into adulthood. Because some sleep problems increase with age, it is important to understand whether cancer elevates this risk and assess associations with co-morbidities that frequently develop in long-term childhood cancer survivors. The current study compares sleep in long-term survivors to sibling controls.

Methods: Childhood cancer survivors (≥5 years from diagnosis; n=12,340; 51.5% female; mean [SD] age=39.4 [9.6] years; years since diagnosis=30.9 [7.9]; age at diagnosis=8.5 [5.8]) and siblings (n=2395; 57.1% female; age=44.6 [10.5]) participating in the Childhood Cancer Survivor Study completed the Pittsburgh Sleep Quality Index (PSQI). Binary sleep behaviors (Total Score >5, Short Sleep Duration [<6 hours], Frequent Snoring [>3 times/week], Frequent Sleep Medication Use [≥3 times/week]) were compared between survivors and siblings using a multivariable generalized estimating equation with Poisson error to account for intra-family correlations, adjusting for age, sex, race, and BMI. Poisson regression models evaluated treatment and chronic health conditions (CHCs) as predictors of the PSQI Total Score among survivors with the same adjustment variables.

Results: Survivors were more likely to report Short Sleep Duration (12.0% vs 10.6%; adjusted prevalence ratio [aPR] 1.18, 95% confidence interval [CI] 1.04-1.34), elevated PSQI Total Score (45.1% vs 40.0%; aPR 1.17, 95%CI 1.11-1.23), Frequent Snoring (18.0% vs 17.4%; aPR 1.11, 95%CI 1.01-1.23), and Frequent Sleep Medication Use (13.2% vs 11.5%; aPR 1.28, 95% CI 1.14-1.45) compared to siblings. Among survivors, an elevated PSQI Total Score was associated with female sex (aPR 1.29, 95%CI 1.21-1.37) and BMI (overweight: aPR 1.13, 95%CI 1.06-1.22; obese: aPR 1.32, 95%CI 1.23-1.42), while age at diagnosis and cancer treatment exposures (i.e., chemotherapy/radiation) were not significantly associated. Survivors with 2+ CHCs had increased prevalence of elevated PSQI Total Score (aPR 1.39, 95%CI 1.28-1.50) relative to survivors without CHCs.

Conclusions: Childhood cancer survivors exhibit elevated risk for poor sleep quality, short sleep, and snoring relative to siblings well into middle age. These sleep problems are driven by demographics and current chronic health conditions rather than prior treatment exposures. Elevated use of sleep-promoting medications suggests interest in managing sleep difficulties and an opportunity for future behavioral sleep intervention trials.