

**Abstract Submission No.: A-1355****Association of Weekend-to-Weekday Sleep Duration Ratio with Kidney Function**

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**Objectives :** Short sleep duration is known to be associated with a decline in the eGFR in a large cohort of women. However, the association of Weekend-to-Weekday sleep patterns with eGFR in a nationally representative population remains unknown. The objective of this study is to examine the correlation between Weekend-to-Weekday sleep patterns and eGFR in the general population.

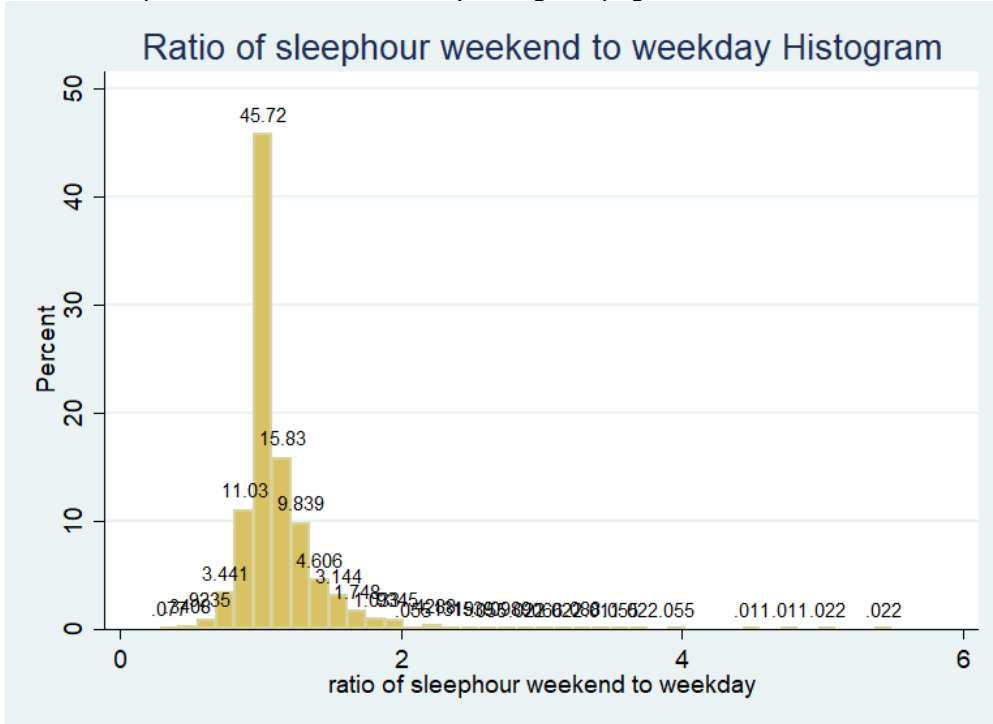
**Methods :** A cross-sectional study was conducted using a population from the 2017-2020 National Health and Nutrition Examination Survey (NHANES). The questionnaire collected self-reported data on the participants' average sleep duration during weekends and weekdays. Their eGFR values were assessed, and the relationship between the weekend-to-weekday sleep duration ratio and eGFR was analyzed by multivariable linear regression analysis.

**Results :** The study involved 9,693 adult participants, with a mean  $\pm$  SD age of  $50 \pm 19$  years and 51% being female. The mean  $\pm$  SD estimated glomerular filtration rate (eGFR) was  $104.73 \pm 65.99$  mL/min/1.73 m<sup>2</sup>. The mean  $\pm$  SD of Weekday and Weekend sleep hours were  $7.59 \pm 1.68$  hr and  $8.26 \pm 1.80$  hr respectively. The study found a significant association between eGFR levels and the Weekend-to-Weekday Sleep Duration Ratio. If the sleep-duration ratio increases by 1, the eGFR level increases by 27.5 and 13.76 mL/min/1.73 m<sup>2</sup> after adjusting for race, gender, and other factors (coefficients (95% CI); P-value = 27.25 (6.54, 47.95); 0.010 and 13.76 (8.85, 18.68); < 0.010, respectively). The severity of urine leakage was identified as an effect modifier with an increase association.

**Conclusions :** The weekend-to-weekday sleep duration ratio was positively associated with eGFR in a general representative population. This study implies that full recovery sleep on the weekend after sleep-deprived weekdays may be able to preserve kidney function. Several factors, including other

comorbidities and sleep environments on weekdays and weekends, may contribute to sleep quality and subsequently eGFR.

ratio of sleephour weekend to weekday histogram.png



ratio of sleephour weekend to weekday histogram.png

