

Sleep duration and added sugar intake of Mexican university students and staff

P. Gamez-Valdez¹, I. Nieto-Marin¹, M. Vera-Aviles², V. Lopez-Teros³, W. Hall⁴ and M. Castro-Acosta¹

¹Facultad de Ciencias de la Nutrición y Gastronomía. Universidad Autónoma de Sinaloa, Culiacán, Sinaloa, México.,

²Department of physiology, anatomy and genetics. University of Oxford, UK,

³División de Ciencias Biológicas y de la Salud, Departamento de Ciencias Químico-Biológicas. Universidad de Sonora and

⁴Department of Nutritional Sciences, School of Life Course and Population Sciences, Faculty of Life Sciences and Medicine, King's College London, UK.

Short sleep duration has been associated with added sugar intake, and both are risk factors for cardiometabolic diseases^(1, 2). The aim of this project is to analyse the relationship between added sugars (AS) intake and sleep duration in Mexican adults.

Healthy subjects (women and men: 18–50 y, BMI 18.5–39.9 kg/M²) from the Autonomous University of Sinaloa, participated in this free-living study. Sociodemographic, anthropometric, and clinical data was used for characterisation. During the 4-week study period, participants completed a 7-day actigraphy record, and four 24-h dietary recall. Sleep duration was objectively assessed using the MotionWare® software. To estimate AS intake, by using a previously developed methodology⁽³⁾, the work team created a food composition table, containing updated AS content for 1706 food items. Protocol was approved by the ethics and research committee of the Faculty of Nutrition and Gastronomy (CE-FCNYG-2021-SEP-001). Data, analysed by ANOVA and ANCOVA with energy intake (kcal/d) and age (y) as covariates, are presented as mean ± SD.

Twenty one healthy subjects (13 W, 8 M) completed the study, for comparison, the sample was categorised into three groups, based on sleep duration: A) 4 to ≤5 h (n = 6); B) >5 to ≤6 h (n = 8); and C) >6 to ≤7 h (n = 7). Age (27.1 ± 8.2 y), BMI (25.3 ± 2.7 kg/M²), waist circumference (84.72 ± 9.38 cm), and blood pressure (SBP 110.38 ± 12.7 mmHg, and DBP 71.79 ± 5.6 mmHg) were equivalent among groups (P ≥ 0.05). Body fat was greater in group C (37.2 ± 5.3%) than in group A (22.2 ± 8.0%) (P = 0.013), and equal to group B (25.8 ± 11.0%).

Sleep analysis showed a sleep duration of 5:34 ± 0:48 h:mm (95% IC: 5:12, 5:56 h:mm), and sleep duration was greater in group C than in A and B (P = 0.000): A) 4:35 ± 0:18 h:mm; B) 5:28 ± 0:14 h:mm, and C) 6:30 ± 0:14 h:mm.

Dietary analysis showed higher intake of energy and carbohydrates in the group A (P ≥ 0.05). Data are presented as the mean of four days: Energy, kcal/d: A) 2401.1 ± 443.0, B) 2016.6 ± 749.8, and C) 1790.9 ± 348.7. Carbohydrates, g/d: A) 275.2 ± 44.5, B) 242.0 ± 74.9, and C) 202.7 ± 35.7. Added sugar (g/d) showed a tendency to a greater intake in group A) 63.8 ± 23.3; than B) 60.5 ± 35.1, and C) 51.75 ± 14.53 (P = 0.071).

All the participants were short sleepers (4 to ≤7 h), however participants with the shortest sleep duration (4 to ≤5 h) showed greater intake of energy and carbohydrates, but a deeper analysis and a bigger sample is needed before conclude if added sugar intake could have any interaction with sleep duration.

Acknowledgments

The International Atomic Energy Agency and Programa de Fomento y Apoyo a Proyectos de Investigacion

References

1. Shahdadian F, Boozari B, & Saneei P (2022) *Sleep Health* (available at: <https://doi.org/10.1016/j.sleh.2022.07.006>).
2. Al Khatib HK, Hall WL, Creedon A *et al.* (2018) *Am J Clin Nutr* 107(1), 43–53.
3. Louie JCY, Moshtaghian H, Boylan S *et al.* (2015) *Eur J Clin Nutr* 69, 154–161.