

Relationship Between Physical Activity, Sedentary Behaviour, and Sleep Duration Behaviours Among Adults in 16 European Countries (2008–2015, HETUS Second Wave)

Roksana Shiran, Claudio R. Nigg

University of Bern, Bern, Switzerland

Objective: The purpose of this study is to investigate the health behaviours in a 24 hour movement context. The authors explore the relationship of health behaviours with each other.

Participants and Methods: Three health behaviours (physical activity (PA), sedentary behaviour (SB), sleep duration (SD)) were self-reported through 24-hour time-use diaries from the Harmonised European Time Use Surveys (HETUS, Wave 2, 2008–2015), covering adults aged 18–80+ (Female $n = 106,973$, 56.7%; Male $n = 81,702$, 43.3%) across 16 European countries.

Results: The study revealed the following evidence of transfer: (1) higher PA is associated with lower SB, (2) higher PA is associated with longer SD, and (3) longer SD is associated with lower SB. The following compensation evidence was found: (1) higher PA was associated with higher SB, and (2) shorter SD with higher PA.

Conclusion: In this cross-national European study, PA, SB, and SD exhibit complex, bidirectional relationships that reflect both synergistic and compensatory effects. These findings highlight the importance of integrated movement behaviour approaches in public health strategies. Further research is needed to investigate causal pathways and the broader bio-psycho-social and environmental influences on these relationships.

Keywords: Physical activity, sedentary behaviour, sleep duration, health behaviour, public health, European

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