

The Association Between Sleep Characteristics and Energy Balance-Related Behaviour in Parents of 4- to 6-Month Old Infants

Joachim D'Hondt, Lore Daelman, Yanni Verhavert, Dirk Aerenhouts

Vrije Universiteit Brussel, Brussels, Belgium

Introduction: The postpartum period involves substantial lifestyle changes for both parents, often leading to disruptions in energy balance-related behaviours (EBRB) (i.e. sleep, diet, physical activity (PA), and sedentary behaviour (SB)). Given that sleep loss is an inherent challenge during the postpartum period and that EBRB are closely interconnected, this study aimed to investigate the associations between sleep characteristics and EBRB in parents of infants aged four to six months.

Methods: Twenty-four couples (31.5 ± 3.7 years) with a 4 to 6-month old biological child were recruited via convenience sampling. Body height and weight were measured at baseline. Sleep quality and dietary intake were assessed over one week using the Pittsburgh Sleep Quality Index and the Food Frequency Questionnaire, respectively. Simultaneously, participants wore a wrist-worn *GT3X ActiGraph* to objectively measure sleep quantity, PA (moderate-to-vigorous physical activity [MVPA] and light-intensity physical activity [LIPA]), and SB. Multiple linear regression models examined associations between sleep and EBRB, controlling for BMI, age, and sex.

Results: Sleep characteristics were not significantly associated with dietary intake ($p = 0.167\text{--}0.898$). While sleep quality did not predict MVPA, LIPA, and SB ($p = 0.332\text{--}0.906$), sleep quantity was a significant negative predictor for MVPA ($\beta = -0.900$, $t = -2.944$, $p = 0.005$) and LIPA ($\beta = -0.288$, $t = -2.045$, $p = 0.047$), and a significant positive predictor for SB ($\beta = 1.395$, $t = 3.992$, $p < 0.001$).

Conclusion: Shorter sleep duration was associated with more MVPA and LIPA, as well as with less SB. These counterintuitive findings may partly be explained by the increased light physical demands of caring for an infant while maintaining daily routines – possibly requiring parents to stay more active despite getting less sleep. Alternatively, it may be that parents who prioritise time for PA may do so at the expense of sleep or SB. Overall, these results suggest that the chronic sleep loss often experienced during the postpartum period does not necessarily have an adverse effect on EBRB. This may reassure parents and health professionals that occasional short sleep in early parenthood is not necessarily harmful for PA or SB.

