

Associations between sedentary behavior and momentary mood in daily life vary across different types of everyday life behaviors

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Introduction

To promote mental health, it is crucial to understand which behaviors enhance mood. While the association between physical activity and mood in everyday life has been well researched, similar studies focusing on sedentary behavior and different life behavior types are rare. Building on previous research showing negative associations between sedentary behavior and mood (Giurgiu et al., 2019), the aim of this study was to 1) replicate the findings and 2) expand previous research by distinguishing different types of everyday life behaviors.

Method

We recruited 73 university students (48% female, $M_{\text{age}}=21.64\pm 2.52$ years) to participate in an observational ambulatory assessment study. We continuously measured sedentary behavior and physical activity via a thigh-worn accelerometer for seven consecutive days. Participants filled in an established mood questionnaire up to ten times a day on movement-triggered e-diaries. In addition, they reported the activity preceding the questionnaire for the previous 15 minutes. We analyzed the data using multilevel modeling.

Results

If a participant spent more time sedentary within the 15 min time frame prior to the e-diary, valence decreased by $B = -0.17$ ($p = 0.030$) and energetic arousal decreased by $B = -0.42$ ($p < 0.001$) points. There was no association with calmness ($p = 0.175$). Looking at the predominant activity over the last 15 minutes, compared to screen time activities, valence was higher after non-screen-based social interactions (e.g., meeting in-person; $B = 3.72$, $p < 0.001$) and exercise ($B = 2.85$, $p = 0.017$). Energetic arousal was lower after non-screen-based (typically sedentary) activities (e.g., reading; $B = -3.85$, $p < 0.001$) and sleeping ($B = -7.66$, $p < 0.001$), while calmness was higher after non-screen-based social interactions ($B = 3.52$, $p < 0.001$) and non-screen-based activities ($B = 2.58$, $p = 0.016$). Daily-life physical activities (e.g., cycling to university) were unrelated to all mood dimensions.

Discussion

In addition to replicating previous findings (Giurgiu et al., 2019), our results show that the type of sedentary behavior is related to valence and energetic arousal. Thus, we conclude that behavior type is important to disentangle the influence of everyday life behavior on mental health and that this should be considered in future studies.

References

Giurgiu, M., Koch, E. D., Ottenbacher, J., Plotnikoff, R. C., Ebner-Priemer, U. W., & Reichert, M. (2019). Sedentary behavior in everyday life relates negatively to mood: An ambulatory assessment study. *Scandinavian Journal of Medicine and Science in Sports*, 29(9), 1340-1351. <https://doi.org/10.1111/sms.13448>