

Outline

Highlights

Abstract

Keywords

1. Introduction

2. Methods

3. Results

4. Discussion

5. Conclusions

Conflict of interest

Authors' contributions

Contributors

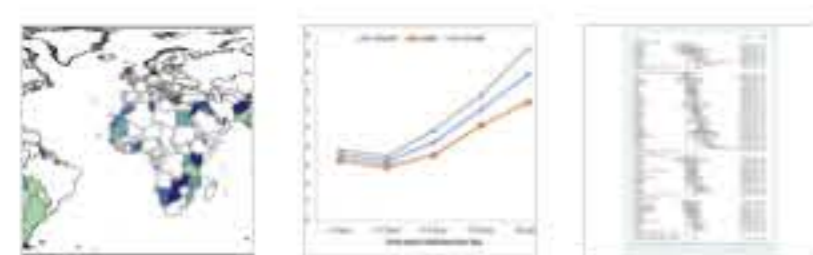
Acknowledgements

Conflict of interest

References

Show full outline

Figures (3)



Tables (2)

- Table 1
- Table 2

Extras (1)

- Multimedia component 1



Sleep Medicine

Volume 58, June 2019, Pages 19-26



Original Article

# Sedentary behavior and anxiety-induced sleep disturbance among 181,093 adolescents from 67 countries: a global perspective

Davy Vancampfort <sup>a, b, c, d, e</sup>, Tine Van Damme <sup>a</sup>, Brendon Stubbs <sup>c, d</sup>, Lee Smith <sup>e</sup>, Joseph Firth <sup>f, g, h</sup>, Mats Hallgren <sup>i</sup>, James Mugisha <sup>j, k</sup>, Ai Koyanagi <sup>l, m</sup>

Show more

Share Cite

<https://doi.org/10.1016/j.sleep.2019.01.048>

Get rights and content

## Highlights

- The prevalence of anxiety-induced sleep disturbance in adolescents is 7.8%.
- Being sedentary is associated with higher odds for anxiety-induced sleep disturbance.
- The association was similar among boys and girls.

## Abstract

### Objectives

Sleep problems are burdensome in adolescents. Understanding modifiable environmental risk factors is essential. There is evidence that physical activity is protective against sleep problems in adolescents. However, the association between sedentary behavior (SB) and anxiety-induced sleep disturbance has not been investigated.

### Methods

Using cross-sectional data from the Global school-based Student Health Survey, we explored the association between SB and anxiety-induced sleep disturbance in 181,093 adolescents [mean (standard deviation, SD) age 13.7 (1.0) years; 48.4% girls] from 67 countries, controlling for confounders (including physical activity). Adolescents reported anxiety-induced sleep disturbance during the past 12 months, and SB, which was a composite variable assessing time spent sitting and watching television, playing computer games, talking with friends during a typical day excluding the hours spent sitting at school and doing homework. Multivariable

## Results

Overall, 7.8% of adolescents had anxiety-induced sleep disturbance. The prevalence of SB was: <1 h/day 39.9%; 1–2 h/day 33.8%; 3–4 h/day 15.4%; 5–8 h/day 7.4%; and >8 h/day 3.6%. Compared to <1 h/day of SB, >8 h/day was associated with a 2.27 [95% confidence interval (CI) = 1.98–2.62] times higher odds for anxiety-induced sleep disturbance. The association was similar among both sexes. The pooled odds ratio for anxiety-induced sleep disturbance when being sedentary ≥3 h/day was 1.42 (95% CI = 1.36–1.48) with only a small degree of between-country heterogeneity ( $I^2 = 41.4\%$ ).

## Conclusions

Future longitudinal data are required to confirm/refute the findings to inform public interventions which aim to reduce anxiety and sleep disturbance in adolescents.

## Keywords

Anxiety; Sleep; Sitting; Adolescence

## Recommended articles

Associations between sleep duration and physic...

Sleep Medicine, Volume 37, 2017, pp. 168-173

Purchase PDF

View details

Associations between meeting combinations of ...

Public Health, Volume 153, 2017, pp. 16-24

Purchase PDF

View details

Correlates of physical activity among 142,118 a...

Preventive Medicine, Volume 127, 2019, Article 105819

Purchase PDF

View details

1 2 Next

## Citing articles (0)

## Article Metrics

### Citations

Citation Indexes: 21

### Captures

Exports-Saves: 11

Readers: 100

### Social Media

Shares, Likes & Comments: 57

Tweets: 61



View details

View PDF



Access through your institution

Purchase PDF

Search ScienceDirect



Previous article in issue

Next article in issue