2020

There's More to Sleep than Counting Sheep: A Cross Sectional Analysis of Sleep Health

Elizabeth Torres
Sanika Lawate
Hali Russell
Emily Donovan
Pablo Soto

Follow this and additional works at: https://scholarscompass.vcu.edu/uresposters

© The Author(s)

Downloaded from
Torres, Elizabeth; Lawate, Sanika; Russell, Hali; Donovan, Emily; and Soto, Pablo, "There's More to Sleep than Counting Sheep: A Cross Sectional Analysis of Sleep Health" (2020). Undergraduate Research Posters. Poster 338.
https://scholarscompass.vcu.edu/uresposters/338

This Book is brought to you for free and open access by the Undergraduate Research Opportunities Program at VCU Scholars Compass. It has been accepted for inclusion in Undergraduate Research Posters by an authorized administrator of VCU Scholars Compass. For more information, please contact libcompass@vcu.edu.
There’s more to sleep than counting sheep: A cross-sectional analysis of sleep health


¹Department of Psychology, Virginia Commonwealth University

Introduction

- Studies have supported the claim that good physical health has a lasting positive association with the brain and body across all age groups (Warburton et al., 2006).
- Research has found that positive affect has a positive relationship with increased sleep (Ong et al., 2013).
- High levels of activity and positive affect are associated with boosted immunity, increased life expectancy, and resiliency (Nath & Pradhan, 2012).
- Studies have also shown that poor physical health and low affect are negatively associated with sleep quality (Nath & Pradhan, 2012).
- While the associations among physical health, affect, and sleep have been examined, the present study aims to extend these findings to sleep health, a newly developed construct which aims to emphasize the benefits of sleep, rather than the negative effects of the absence of sleep.
- **Aim:** To determine the predictive power of affect for sleep health above and beyond age and physical health.
- **Hypothesis:** Affect will predict sleep health above and beyond age and physical health.

Participants

- **Sample:** Data from this study were drawn from a larger online survey investigating sleep and health outcomes across various developmental stages.

Demographics (N = 3284)

<table>
<thead>
<tr>
<th>Age, M (SD)</th>
<th>Gender (%)</th>
<th>Race/Ethnicity (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>42.7 (16.7)</td>
<td>Male: 45.0</td>
<td>White/Caucasian: 80.8</td>
</tr>
<tr>
<td></td>
<td>Female: 48.5</td>
<td>Black: 8.0</td>
</tr>
<tr>
<td></td>
<td>Other: 6.4</td>
<td>Asian: 6.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Latino: 6.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Native American: 1.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pacific Islander: 0.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other: 1.7</td>
</tr>
</tbody>
</table>

Methods

- **Measures:**
  - Sleep
    - Measured using the RU-SATED scale, which measures sleep health with 6 different items
  - Positive and negative affect
    - Measured using the Positive and Negative Affect Schedule (PANAS)
  - Physical health
    - Measured as the total number of self-reported medical conditions from a list of 18 common conditions
- **Data Analysis:** A hierarchical linear regression was conducted, with age in block 1, physical health in block 2, positive and negative affect in block 3, and sleep health as a dependent variable.

Results

<table>
<thead>
<tr>
<th>Descriptives</th>
<th>M (SD)</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>RU-SATED</td>
<td>7.59 (2.69)</td>
<td>0 – 10</td>
</tr>
<tr>
<td>Physical health</td>
<td>1.25(1.79)</td>
<td>0 – 12</td>
</tr>
<tr>
<td>PANAS Positive affect</td>
<td>14.29 (4.37)</td>
<td>5 – 25</td>
</tr>
<tr>
<td>PANAS Negative affect</td>
<td>10.02 (4.67)</td>
<td>5 – 25</td>
</tr>
</tbody>
</table>

- When age was entered, it predicted sleep health. This initial model revealed that 1.9% of the variance in sleep health was predicted by knowing the participant’s age.
- When physical health was entered, it predicted sleep health. This model revealed that an additional 2.3% of the variance in sleep health was predicted by knowing the participant’s physical health.
- When positive and negative affect were added to the model, they significantly improved prediction, revealing that an additional 9.4% of the variance in sleep health was explained by positive and negative affect.

**Significant Sleep Health Predictors:**

- In the final model, age, physical health, positive affect, and negative affect significantly predicted sleep health outcomes, F(4, 3279) = 128.43, p < .001, R² = .135, with 13.5% variance in sleep health explained.

**Hierarchical Multiple Regression Model**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Model Block</th>
<th>Predictor Variable</th>
<th>β</th>
<th>t</th>
<th>p</th>
<th>Δ R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>RU-SATED</td>
<td>Block 1</td>
<td>Age</td>
<td>.10</td>
<td>5.55</td>
<td>.001</td>
<td>.019</td>
</tr>
<tr>
<td></td>
<td>Block 2</td>
<td>Physical Health</td>
<td>-.09</td>
<td>-5.42</td>
<td>.001</td>
<td>.023</td>
</tr>
<tr>
<td></td>
<td>Block 3</td>
<td>Positive Affect</td>
<td>.17</td>
<td>10.06</td>
<td>.001</td>
<td>.094</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Negative Affect</td>
<td>-.24</td>
<td>-14.16</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conclusion

- The current study suggests that affect predicts sleep health above and beyond age and physical health. Greater positive affect and fewer chronic health conditions are associated with better sleep health.
- Inversely, people who have higher negative affect (i.e., negative emotions, including anger, contempt, disgust, guilt, fear, and nervousness as well as low self-concept) and more chronic health conditions report poorer sleep.

**Future Directions:**

- Longitudinal designs could be used to examine associations among positive affect, physical health, and sleep health over time.
- Clinical samples with chronic medical conditions could be studied to further explore the associations among affect, physical health, and sleep health.
- Given the strong association between affect and sleep health, future studies could also explore interventions that foster positive affect or reduce negative affect to see if manipulation of affect improves sleep health.

References


Acknowledgements

This work was supported by the National Institute on Aging (K23AG049955; PI: Dzierzewski)