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

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There's more to sleep than counting sheep: A cross-sectional analysis of sleep health

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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)

Age, *M* (*SD*)	42.7 (16.7)
Gender (%)	
Male	45.0
Female	48.5
Other	6.4
Race/Ethnicity (%)	
White/Caucasian	80.8
Black	8.0
Asian	6.3
Latino	6.6
Native American	1.6
Pacific Islander	0.5
Other	1.7

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

Descriptives	M (SD)	Range
RU-SATED	7.59 (2.69)	0 – 10
Physical health	1.25(1.79)	0 – 12
PANAS		
Positive affect	14.29 (4.37)	5 – 25
Negative affect	10.02 (4.67)	5 – 25

- 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, $F(4, 3279) = 128.43$, $p < .001$, $R^2 = .135$, with 13.5% variance in sleep health explained.

Hierarchical Multiple Regression Model

Measure	**Model Block**	**Predictor Variable**	***β***	***t***	***p***	**Δ R^2**
RU-SATED	Block 1	Age	.10	5.55	.001	.019
	Block 2	Physical Health	-.09	-5.42	.001	.023
	Block 3	Positive Affect	.17	10.06	.001	.094
		Negative Affect	-.24	-14.16		

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.

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