



The Young and the Restless: Depression, Sleep, and Resilience in College Students



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Introduction

- 14% prevalence of depression in college students (American College Health Association, 2016)
- 23% of young adults report having sleep disturbance (Taylor et al., 2011); 6.5 hours/night of sleep (Lund, Reider, Whiting, & Pritchard, 2010)
- Sleep disturbance is a common symptom of depression (Peterson & Benca, 2006)
- Positive variables are also important to examine. Resilience, for example, is a construct that assesses individuals' adaptive response to change & is associated with improved psychological health (Smith et al., 2008)
- Minimal research on relationship between depression, sleep disturbance, & resilience

The Present Study

Aim 1: Explore the relationship between depression, sleep disturbance, & resilience

Aim 2: Determine if sleep disturbance or depression better predicts resilience

Exploratory aims: blue light technology, study abroad status, GPA

Participants

124 third-year Davidson students; 60% women & 40% men

Method

- Qualtrics survey administered in Oct/Nov 2016
- Inventory of Depressive Symptomatology – Self Report (University of Pittsburgh Epidemiology Data Center, 2016): 29-item measure of depressive symptoms ($\alpha = .89$)
- Pittsburgh Sleep Quality Index (Buysse, Reynolds, Monk, Berman, & Kupfer, 1989): 19-item measure of sleep
- Brief Resilience Scale (Smith et al., 2008): 6-item measure of recovery from stress ($\alpha = .80$)
- Exploratory measures: Effects of Blue Light-Emitting Electronic Devices, study abroad, GPA

Results

- Depression: 35% mild; 12% moderate – severe
- ~6 hours of sleep/day; 38% slept < 7 hours/day (Figure 1)
- Resilience: moderate – high (Table 1)

✓ Aim 1

- Depression & sleep disturbance: $r = .44, p < .01$
- Depression & resilience: $r = -.44, p < .01$
- Sleep disturbance & resilience: $r = -.25, p < .01$

✗ Aim 2

- Men had > resilience than women: $t(121) = 2.20, p < .05, d = .42$
- ↑ depression significantly predicts ↓ resilience (Table 2)
- Sleep disturbance does not significantly predict resilience
- 16% of variance in resilience accounted for

Acknowledgments

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Results

- Exploratory aims
 - Blue Light Exposure (37% high exposure)
 - Group with > blue light exposure had ↑ sleep disturbance than group with < exposure: $t(114) = 2.25, p < .05, d = .42$
 - Study abroad (40% of students were abroad)
 - Students on campus had significantly worse overall sleep than those abroad, $t(118) = 2.62, p < .01, d = .49$ (Table 3)
 - GPA & depression: $r = -.34, p < .01$

Table 1
Descriptive Statistics of Measures

Measure	Mean (SD)	Range
Depression	15.52 (10.03)	1-44
Sleep problems total	8.70 (2.50)	5-17
Sleep disturbance	2.16 (.39)	1-3
Sleep quality	1.98 (.76)	0-3
Daytime dysfunction	1.38 (.81)	0-3
Sleep latency	1.12 (.88)	0-3
Sleep efficiency	0.93 (.88)	0-3
Sleep duration	0.72 (.89)	0-3
Sleep medication	0.37 (.84)	0-3
Resilience	3.58 (.71)	2.17-5.00

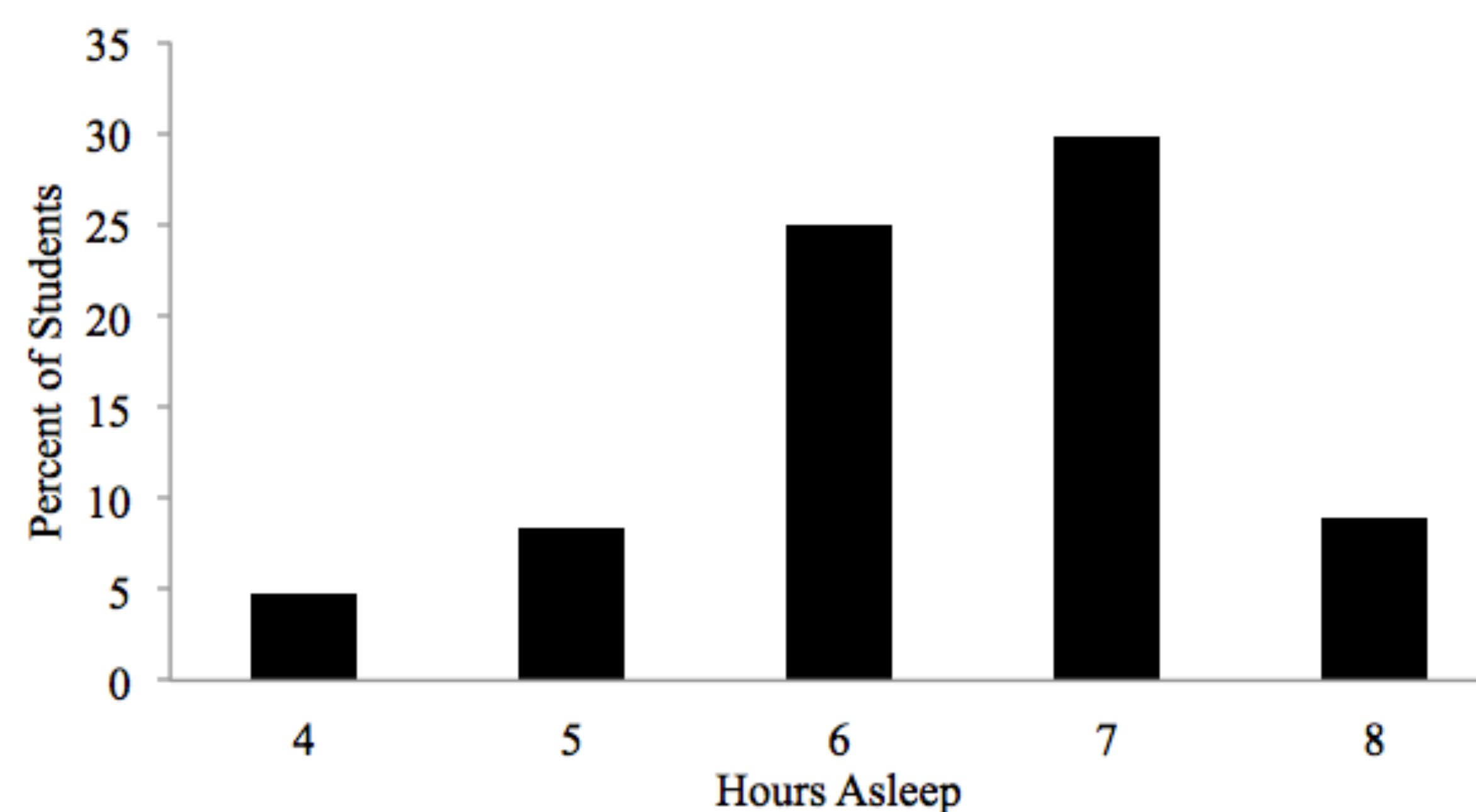


Figure 1. Frequency of reported average hours slept per night during the previous week

Table 2
Hierarchical Regression of Depression and Sleep Disturbance on Resilience

Variable	Model 1			Model 2		
	B	SE	β	B	SE	β
Gender	.27	.14	.19	.13	.13	.09
Depression				-.03	.01	-.40*
Sleep Disturbance				-.01	.03	-.03
R^2		.03			.18	
ΔR^2					.16	
p		< .05			< .001	

Table 3
Descriptive Statistics by Students' Abroad Status

	Abroad	Not abroad
Depression	14.48 (9.81)	16.22 (10.19)
Sleep problems total*	8.00 (2.23)	9.19 (2.61)
Sleep disturbance	2.14 (.35)	2.18 (.42)
Sleep quality	2.14 (.79)	1.88 (.76)
Daytime dysfunction*	1.16 (.71)	1.55 (.87)
Sleep latency*	0.86 (.67)	1.32 (.97)
Sleep efficiency	0.76 (.80)	1.06 (.92)
Sleep duration*	0.50 (.74)	0.84 (.93)
Sleep medication	0.42 (.79)	0.35 (.90)
Resilience	3.64 (.69)	3.53 (.72)

* = Significant difference between groups, $p < .05$

Discussion

- Results align with literature: poor sleep associated with ↑ psychological distress (Milojevich & Lukowski, 2016), ↑ mental toughness related to ↑ sleep & ↓ depression (Brand et al. 2014), & resilience associated with improved psychological functioning & depression associated with worse psychological functioning (Skrove, Romundstad, & Indredavik, 2013)
- Sleep possibly not a significant predictor of resilience due to small correlation & perhaps students who report being resilient do not obtain enough sleep due to prioritizing other activities
- Blue light exposure (short wavelength light) → ↓ melatonin, ↑ body temperature & heart rate, ↑ alertness, changes in circadian timing (Cajochen et al., 2005)
- Differences in academic workloads, culture may → better sleep abroad (Paraskakies, Ntoulos, Ntokos, Siavana, Bitsori, & Galanakis, 2008)
- Difficulty focusing, lack of energy → low GPA or low GPA → feelings of frustration, depression
- **Limitations**
 - Sample: potential sampling bias due to high GPA
 - Subjective, self-report measures: limited reliability of IDS items for depressive symptom clusters & blue light construct assessed use of technology instead of exposure to blue light
- **Implications**
 - Improve sleep quantity & quality: Sleep Treatment & Education Program for Students (Brown, Buboltz Jr., & Soper, 2006)
 - Reduce depression: Email based cognitive behavioral therapy (Trockel, Manber, Chang, Thurston, & Taylor, 2011) and/or yoga (Prathinkanti, Rivera, Cochran, Tungol, Fayazmanesh, & Weinmann, 2017)
- **Future Research**
 - Alternate measure for depressive subtypes such as the Hamilton Depression Rating Scale
 - Use objective sleep measures
 - Examine clinical subsamples

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