

Sleep disturbance as a potential link in the coherence of depressive and obsessive-compulsive symptoms

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INTRO

- Research has shown that sleep may play an important role in the onset and maintenance of both depression and obsessive-compulsive disorder (OCD).<sup>1</sup>
- Insomnia may exacerbate symptoms of both conditions, propagating a feedback loop wherein sleep deprivation leads to more severe depressive and OCD symptoms, in turn worsening sleep disturbance over time.<sup>2</sup>
- Research has shown that severe OCD symptoms were consistently associated with greater sleep disturbances, and that sleep may bridge depression to OCD, contributing to the coherence of these conditions.<sup>3</sup>

METHODS

- A large undergraduate sample (N= 253) completed questionnaires assessing insomnia (ISI),<sup>4</sup> OCS dimensions (DOCS),<sup>5</sup> sleep quality (PSQI),<sup>6</sup> and depression symptom severity (DASS)<sup>7</sup>
- Zero-order correlations and regressions were conducted, as well as mediation analyses in SPSS using the PROCESS<sup>8</sup> with an alpha level of 0.05.

RESULTS

- Insomnia was significantly associated with all OCS dimensions. Moderate associations for responsibility for harm and unacceptable thoughts, and weak associations for contamination and symmetry were observed.
- Insomnia was also significantly and moderately associated with depressive symptoms.

Predicting OCS:

- In the regressions analyses, depressive symptoms significantly predicted each OCS dimension; insomnia, however, uniquely predicted only the unacceptable thoughts dimension after controlling for depression.
- In the mediation analyses, the prediction of OCS by depression was only significantly mediated by insomnia for the unacceptable thoughts dimension.

Predicting depressive symptoms:

- Both insomnia and each OCS dimension were significant predictors of depressive symptom severity.
- Further, the prediction of depressive symptoms by OCS was significantly mediated by insomnia for all dimensions.

DISCUSSION

- Our results aligned with the theoretical models suggesting that sleep may moderate OCD and depressive symptoms an that sleep may contribute to the coherence of these conditions.
- However, we found insomnia only predicted the unacceptable thoughts dimension.
- Our findings suggest links between insomnia, depression, and OCD symptoms merit additional consideration in efforts to improve and understand these and related conditions.
- Limitations include the non-clinical sample of college students, the cross-sectional study which could have led to the inclusion confounding variables.



In a cross sectional survey completed by college students, sleep disturbance mediated the association between obsessive-compulsive and depressive symptoms.



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Figure 1. Distress Tolerance Mediates link between Avoidant Coping and depressive and anxiety symptoms.

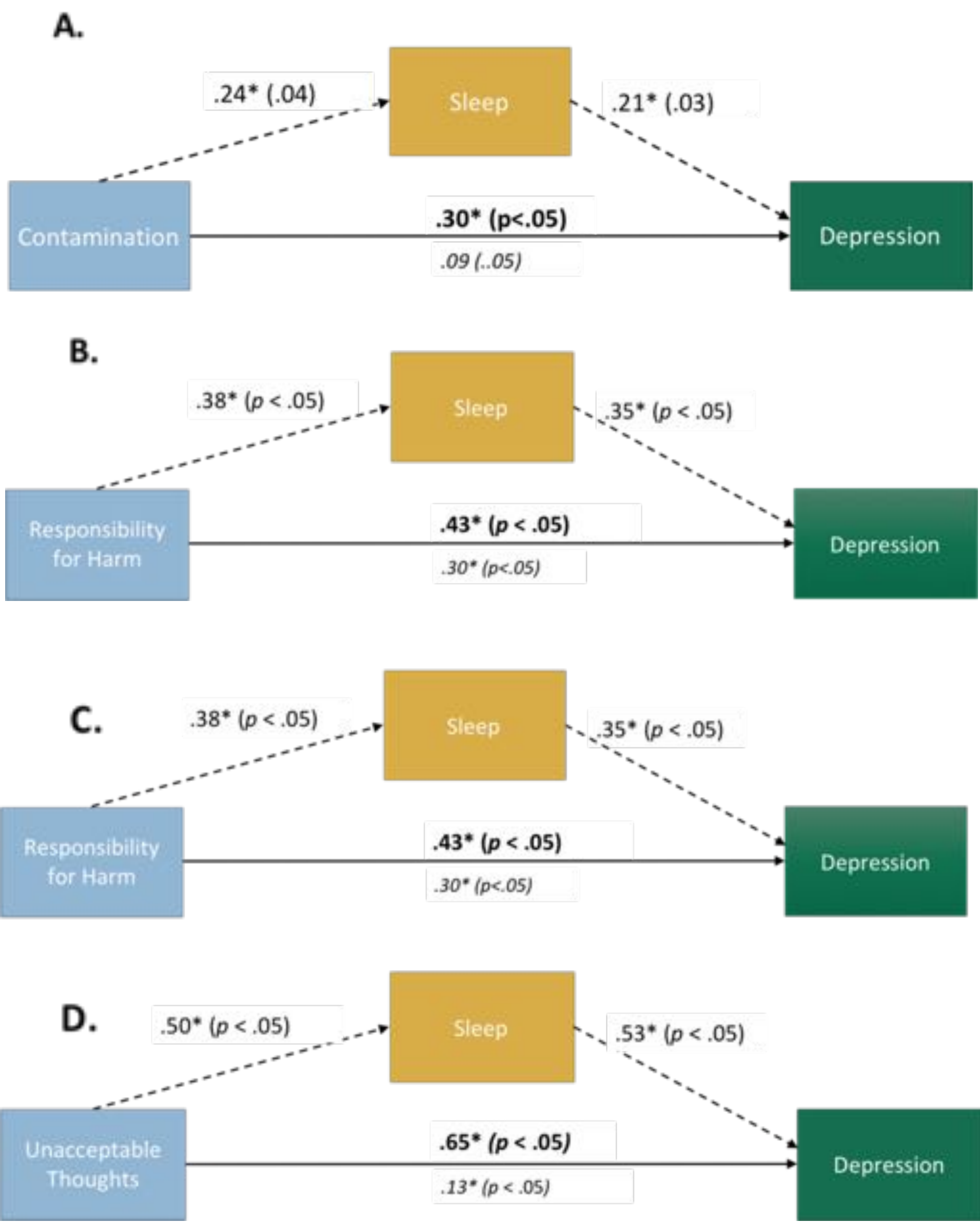


Table 1. Zero-order bivariate (Pearson) correlations.

	1	2	3	4	5	6	7
1. DOCS - Contamination	1						
2. DOCS - Responsibility For Harm	.50*	1					
3. DOCS - Symmetry	.31*	.33*	1				
4. DOCS - Unacceptable Thoughts	.28	.38*	.26	1			
5. PSQI - Sleep Quality	.07	.26	.14	.35*	1		
6. ISI - Insomnia Severity	.13	.23	.15	.37*	.70*	1	
7. DASS - Depression	.18	.29	.20	.54*	.44*	.44*	1

REFERENCES

1. Koffel, E., & Watson, D. (2009). The two-factor structure of sleep complaints and its relation to depression and anxiety. *Journal of Abnormal Psychology*, 118(1), 183–194. doi: 10.1037/a0013945

2. Paterson, J., Reynolds, A., Ferguson, S., & Dawson, D. (2013). Sleep and obsessive-compulsive disorder (OCD). *Sleep Medicine Reviews*, 16(6), 465–474.

3. Thase, M. E., Kupfer, D. J., Fasiczka, A. J., Buysse, D. J., Simons, A. D., & Frank, E. (1997). Identifying an abnormal electroencephalographic sleep profile to characterize major depressive disorder. *Biological Psychiatry*, 41(9), 964–973. doi: 10.1016/s0006-3223(96)00259-4

4. Bastien, C. H., Vallières, A., & Morin, C. M. (2001). Validation of the Insomnia Severity Index as an outcome measure for insomnia research. *Sleep medicine*, 2(4), 297-307.

5. Abramowitz, J. S., Deacon, B. J., Olatunji, B. O., Wheaton, M. G., Berman, N. C., Losardo, D., ... & Björgvinsson, T. (2010). Assessment of obsessive-compulsive symptom dimensions: Development and evaluation of the Dimensional Obsessive-Compulsive Scale. *Psychological assessment*, 22(1), 180.

6. Carpenter, J. S., & Andrykowski, M. A. (1998). Psychometric evaluation of the Pittsburgh sleep quality index. *Journal of psychosomatic research*, 45(1), 5-13.

7. Antony, M. M., Bieling, P. J., Cox, B. J., Enns, M. W., & Swinson, R. P. (1998). Psychometric properties of the 42-item and 21-item versions of the Depression Anxiety Stress Scales in clinical groups and a community sample. *Psychological assessment*, 10(2), 176.

8. Hayes, A. F. (2017). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford Publications.



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# Supplementary Figures

Supplemental Table 1. Demographic information.

		<i>M (SD)</i>	<i>Range</i>
<b>Age</b>		18.99 (1.85)	17 - 32
		<i>N</i>	<i>%</i>
<b>Gender</b>			
	<i>Female</i>	159	62.8
	<i>Male</i>	93	36.8
	<i>Gender nonconforming</i>	1	0.4
	<i>Other</i>	0	0
<b>Race &amp; Ethnicity</b>			
	<i>African American or Black</i>	31	12.3
	<i>American Indian or Alaska Native</i>	2	0.8
	<i>Asian American or Asian</i>	34	13.4
	<i>Hispanic or Latino</i>	16	6.3
	<i>Middle Eastern</i>	3	1.2
	<i>Multiracial</i>	5	2
	<i>White or Caucasian</i>	160	63.2
	<i>Other</i>	2	0.8

Supplemental Table 2. Findings from regression analysis.

Variable		Unstandardized Coefficients		Standardized Coefficients		t	Sig.
		B	Std. Error	Beta			
DOCS_Contam							
	(constant)	1.71	0.30			5.70	.00
	DASS_Dep	.09	.04	.16		2.24	.03
	ISI	.03	.04	.06		.88	.38
DOCS_Harm							
	(constant)	1.56	.32			4.86	.00
	DASS_Dep	.16	.05	.24		3.55	.00
	ISI	.07	.04	.12		1.84	.07
DOCS_Thts							
	(constant)	.94	.34			2.74	.01
	DASS_Dep	.39	.05	.47		8.02	.00
	ISI	.12	.04	.17		2.84	.01
DOCS_Sym							
	(constant)	1.46	.32			4.62	.00
	DASS_Dep	.11	.05	.16		2.35	.02
	ISI	.05	.04	.08		1.14	.26