



Examining the Relationship between Aspects of Sleep and Psychological Symptoms in a College Student Sample

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INTRODUCTION

- The deterioration of **sleep quality** can be a manifestation of several psychological **disorders**.
- Research has previously documented various disorders as having a **negative impact** on sleep.
- In addition, poor sleep quality and conditions such as insomnia can lead to a **greater likelihood** of developing a mental illness.
- Sleep and symptoms of psychological disorders, therefore, have a **reciprocal** relationship with each factor being interdependent on the others.
- Sleep is commonly assessed using the **Pittsburgh Sleep Quality Index (PSQI)**, from which seven sleep components are calculated:
 - Sleep quality (**C1**), sleep latency (**C2**, time it takes to fall asleep), sleep duration (**C3**), sleep efficiency (**C4**, time asleep/time in bed), sleep disturbance (**C5**), sleep medication use (**C6**), and daytime dysfunction (**C7**).
- Since **emerging adulthood** is when the onset of mental disorders is most common, the present study seeks to address how different PSQI component scores **relate** to scores on depressive and anxiety measures in a sample of **college students**.

MATERIALS & METHODS

- Participants:** Students (N=474) in Introductory Psychology courses (PSYC 1000) at a southeastern university were recruited via Sona Systems research participation management program. The majority were **Caucasian** (68%), **female** (66%), and **freshmen** (86%); on average participants were **18** years old.
- Procedures:** Interested PSYC 1000 students were directed to an online survey provided using Qualtrics. After providing **informed consent**, participants were advanced to the survey. Upon completion of the survey, participants received research credit for their PSYC 1000 course.
- Measures:** In addition to demographics, the survey assessed the following variables:
 - Sleep:** Pittsburgh Sleep Quality Index (Buysse et al., 1989).
 - Depressive Symptoms:** Patient Health Questionnaire 9 (Kroenke et al., 2001).
 - General Anxiety Symptoms:** Generalized Anxiety Disorder 7 scale (Spitzer et al., 2006).
 - Executive Functioning:** Cognitive Failures Questionnaire (Broadbent et al., 1982).

RESULTS

- Scores on the PHQ-9, GAD-7, and CFQ **positively correlated** with PSQI totals and all components.
- Those that scored above the clinical cutoff for the PHQ-9 for depression had **significantly higher** PSQI scores compared to those that did not meet the cutoff.
- Those that scored above the clinical cutoff for the GAD-7 for anxiety had **significantly higher** PSQI scores compared to those that did not meet the cutoff except for C3.

Significant findings for depression:

- PHQ positively correlated with PSQI total and **all components**.
- If met PHQ cutoff, **higher** total, components 1, 2, 3, 4, 5, 6, 7
 - Compared to those who do **not** meet cutoff.
- If ever **diagnosed** with depression, **higher** total and component 2, 7
 - Compared to those **never** diagnosed.
- If ever **diagnosed** with depression and consider it a **current problem**, **higher** component 7
 - Compared to those who had been diagnosed and **don't** consider it a current problem.

Significant findings for anxiety:

- GAD positively correlated with PSQI total and **all components**.
- If me GAD cutoff, **higher** total, components 1, 2, 4, 5, 6, 7
 - Compared to those who do **not** meet cutoff.
- If ever **diagnosed** with anxiety disorder, **higher** total, component 6, 7
 - Compared to those **never** diagnosed.
- If ever **diagnosed** with anxiety and consider it a **current problem**, **higher** component 7
 - Compared to those who had been diagnosed and **don't** consider it a current problem.

DISCUSSION

- Results indicate that students experiencing anxiety and depressive **symptomatology** may also be experiencing issues with:
 - Sleep quality, sleep latency, sleep disturbance, sleep efficiency, sleep medication use, and daytime dysfunction.
- Since sleep problems are **reciprocally** related to anxiety and mood disorders, the data provide convincing **support** for the addition of behavioral sleep medicine in conjunction with other traditional psychotherapies for **treating** anxiety and depression.
- Future research should examine **experimental** approaches of behavioral sleep medicine designed for the **college student population** to determine if these approaches, in turn, lead to a reduction of psychological symptomatology.



REFERENCES

- Broadbent, D. E., Cooper, P. F., FitzGerald, P., & Parkes, K. R. (1982). The Cognitive Failures Questionnaire (CFQ) and its correlates. *British Journal of Clinical Psychology*, 21(1), 1–16. <https://doi.org/10.1111/j.2044-8260.1982.tb01421.x>
- Buysse, D. J., Reynolds, C. F., Monk, T. H., Berman, S. R., & Kupfer, D. J. (1989). The Pittsburgh Sleep Quality Index: A new instrument for psychiatric practice and research. *Psychiatry Research*, 28(2), 193–213. [https://doi.org/10.1016/0165-1781\(89\)90047-4](https://doi.org/10.1016/0165-1781(89)90047-4)
- Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001). The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine*, 16(9), 606–613. <https://doi.org/10.1046/j.1525-1497.2001.016009606.x>
- Spitzer, R. L., Kroenke, K., Williams, J. B. W., & Löwe, B. (2006). A Brief Measure for Assessing Generalized Anxiety Disorder: The GAD-7. *Archives of Internal Medicine*, 166(10), 1092–1097. <https://doi.org/10.1001/archinte.166.10.1092>