REPORT

Covariates of Academic Burnout Among University of California San Diego Students: A Pilot Study

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Abstract

The present study examined covariates of academic burnout among University of California San Diego students near finals week. We hypothesized that 1) high burnout would be linked with poor sleep, 2) longer commute times would be associated with greater burnout, and 3) longer commute times would be associated with poor sleep. Our study used a convenient sample of 55 students and self-report data to examine potential correlates of burnout. Poor sleep quality was significantly associated with greater burnout. Burnout and sleep quality were not significantly associated with commute times. Overall, students reported high levels of burnout, similar to that of child welfare workers in the US. Our findings add to the emerging literature that emphasizes the role of sleep in promoting well-being and highlights the importance of interventions to support student mental health.

This study along with its preliminary findings were presented at the California State University San Marcos 30th Annual Psychology Conference in San Marcos, California, United States on May 3rd, 2024. Updated findings and refinement to the analyses are contained in this report.

Introduction

What is Burnout?

- Burnout has been previously defined as a form of long-term exhaustion caused by prolonged exposure to overwhelming amounts of stress (Maslach et al., 2001)
- Burnout was initially studied in human service professions, however, it has been found that students also experience burnout (Jacobs & Dodd, 2003)
- Academic burnout is an extension of career burnout because student responsibilities resemble work (Lin & Huang, 2014)

Why Study Burnout?

- Burnout is a vital area of study as it holds negative consequences for those who experience it
- It is well documented in the literature that burnout can lead to anxiety, depression, lowered self-esteem, substance abuse, and lower workplace efficacy (Alarcon, 2011)
- University of California San Diego (UCSD) graduates students who report depressive symptoms take more time to finish their program and are more withdrawn from their work (UCSD Division of Graduate Education and Postdoctoral Affairs, 2024). Preventing burnout can be one route to promote better mental health among students and prevent these negative outcomes.

Why Study Commutes?

- More than half of UCSD students (61%) are commuters (UCSD Institutional Research, 2023)
- Commutes can be a source of recurrent stress (Koslowsky & Krausz, 1993) potentially because of time commitment, traffic, difficulties with parking, etc.

Why Study Sleep?

- Sleep can decrease stress levels (Scott et al., 2021) and thus getting sleep may play a role in burnout prevention
- Students (on average) do not get enough sleep: A majority of students do not meet the 7 to 9 hour suggestion for young adults as outlined by The National Sleep Foundation (Lund et al., 2010; Hirshkowitz et al., 2015)
- Sleep deprivation is linked to depression among college students (Mbous et al., 2022)

Relationships Between Burnout, Sleep, and Commute

- Burnout in students is associated with poor sleep (Pagnin et al., 2014; Andrade et al., 2023) potentially because sleep deprivation prevents students from enjoying the restorative effects of sleep
- Longer commutes are associated with reduced sleep duration since individuals have less time for health-promoting behaviors (Christian, 2012; Hori et al., 2020)
- Amponsah-Tawiah et al. (2016) found that higher commute *stress* was correlated with burnout
- Koslowsky and Krausz (1993) found that commute *stress* is associated with lower job satisfaction for people who drive to work

Study Objectives

The present study seeks to examine the potential covariates of academic burnout among UCSD students by determining the bivariate correlations between academic burnout, sleep quality, and commute times. This study contributes to the gap in the literature by examining the correlation between burnout and commute times and will provide a better understanding of what academic burnout looks like at UCSD.

Hypotheses

1. Poor sleep quality would be associated with higher levels of academic burnout
2. Longer weekly commute times would be associated with poor sleep quality
3. Longer commute times would be associated with higher levels of academic burnout

We have no a priori hypotheses regarding the relationship between course load (enrolled unit count) and burnout.

Method

Measures

- Copenhagen Burnout Inventory (Kristensen et al., 2005) work-related dimension modified for students
- Pittsburgh Sleep Quality Index (Buysse et al., 1989). Note: Lower scores indicate greater sleep quality, higher scores indicate more sleep disturbances. This measure was reverse scored for easier interpretation.
- Participants were asked to report demographical data, whether they are a UCSD student, their major, number of enrolled units, and class standing (i.e., freshman, sophomore, junior, senior, graduate)

Procedure

- Participants were recruited in-person, through social media platforms (e.g., Instagram, Discord), and student clubs
- UCSD undergraduate and graduate students who were 18 years old or older completed a self-report questionnaire
- Data was collected one week before finals week (Winter Quarter 2024)

Participant Demographics

- 55 UCSD students (98% undergraduates)
- Ages 18 to 32 ($M = 20.65$)
- Predominantly self-identified as Asian (51%)
- Gender: 62% female, 36% male, 2% other

Data Analysis

- HY conducted data analysis using Jamovi (Version 2.6.2.0); AB, MS assisted in data collection
- There were six extreme outlier scores for sleep quality (sleep duration) that we are unable to interpret. Their scores were removed for analyses involving sleep quality.

Results

Table 1

Descriptive Statistics and Bivariate Correlations of Academic Burnout, Sleep Quality, Commute Time, and Enrolled Unit Count

Variable	1.	2.	3.	4.	*M*	*SD*	*n*
1. Academic Burnout					56.30	17.96	55
2. Sleep Quality	–.40**				13.14	3.25	49
3. Commute Time	.03	.14			80.89	77.38	55
4. Enrolled Unit Count	–.12	.05	–.15		16.02	3.14	55

*$p < .05$, ** $p < .01$, ***$p < .001$

Note: Commute times is reported in minutes. The Pearson's *r* value for class standing is not meaningful (categorical variable).

Review the Hypotheses

1. Poor sleep quality would be associated with higher levels of academic burnout
2. Longer weekly commute times would be associated with poor sleep quality
3. Longer commute times would be associated with higher levels of academic burnout

Results of Correlation Matrix

- Poor sleep *is associated* with academic burnout, $r(47) = –.40$, $p = .004$
- Commute times are not significantly correlated with sleep, $r(47) = .14$, $p = .350$
- Commute times are not significantly correlated with academic burnout, $r(53) = .03$, $p = .846$

Population Parameter Estimation: Academic Burnout 95% Confidence Interval

- $M = 56.30$ (CBI ranges from 0 to 100)
- 95% CI [51.55, 61.05]

Interpretation of Burnout Level

- Similar levels of burnout as US Child Welfare Workers (Leake et al., 2017)
- 72.73% of sampled students experience moderate to high levels of burnout as measured through the Copenhagen Burnout Inventory (50–74 is considered moderate, 75–99 is high, 100 is severe) (Borritz et al., 2006)

Results (Continued)

Table 2

Multiple Regression Analysis of Academic Burnout Results

Covariates	Standardized Beta	95% Estimate	*p*-value
Sleep Quality	–.40**	[–.67, –.13]	.004
Commute Time	.10	[–.18, .37]	.480
Enrolled Unit Count	–.22	[–.49, .05]	.103

*$p < .05$, ** $p < .01$, ***$p < .001$

Model Fit

- $R = .47$
- $R^2 = .22$
- Adjusted $R^2 = .17$
- $F(3, 45) = 4.35$, $p = .009$

Multiple Regression Assumption Checks

- Normality of Residuals: Shapiro-Wilk = 0.99, $p = .903$
- Collinearity: All VIF between covariates are ≤ 1.05

Results of Multiple Regression Analysis

- Only sleep quality is significantly associated with academic burnout $\beta = –.40$, $p = .004$ when controlling for commute time and enrolled unit count
- Surprisingly, we did not find a significant association between enrolled units and academic burnout

Discussion

Key Findings and Implications

- Poor sleep quality and academic burnout are significantly correlated
- UCSD students experience a high level of burnout near finals
- More needs to be done to protect the well-being of students at UCSD
- Commute times are not significantly associated with sleep quality or burnout in this sample
- Course load is not associated with burnout

Limitations

- Small sample
- Data was collected before finals: It is unclear if estimates of burnout will fluctuate during different periods in the academic year
- During the time of data collection, geopolitical events and campus demonstrations may have influenced students' responses to burnout
- Cross-sectional design is unable to establish causation

Future Directions for Research

- **Power and Sample Size:** Replicate the findings in a larger sample. With greater statistical power, can we detect any effect from commute times and course load?
- **Parameter Estimation:** Fully random sample or weighing scheme to get a representative estimate of academic burnout at UCSD. Does academic burnout fluctuate throughout different times of the academic year/quarter?
- **Longitudinal Design:** Collect long-term data and analyze long-range predictors of burnout. Also examine the long-term effects of burnout on mental health and learning outcomes and academic performance. Was our estimate of burnout inflated due to finals?
- **Additional Covariates:** It was suggested that work hours/work stress should be another measured variable as it can be a significant source of stress for students. Additionally, it was suggested by conference attendees that time commitments to club administration, research, and extracurriculars may be useful variables. Other unstudied variables include GPA and time spent in class.
- **Burnout:** There are multiple dimensions of burnout as measured by the Copenhagen Burnout Inventory. Further studies should investigate *personal* burnout in addition to academic burnout.
- **Mediation Model:** Use a set of experiments and the existent literature to test whether stress levels mediate a relationship between sleep quality and academic burnout.
- **Prevention:** Research institutional interventions and individual interventions that can prevent (or reduce) academic burnout. As of November 2024, the Learning Sustainable Well-Being program is being rolled out to other academic departments at UCSD, expanding the "PSYC 88 Learning Sustainable Well-Being: Compassion for Self and Others" course to more students (see Dobkins et al., 2023 for more detail). It would be interesting to examine whether the curriculum that incorporates lessons on compassion and mindfulness can make individuals more resistant to burnout.

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