UC San Diego
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Coughing Under Pressure: Exploring Stress-Cold Connections in UCSD Undergraduates

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Background

- Perceived stress is our **exposure** and frequency of cold symptoms is our **outcome**
- **98%** of college students report experiencing some level of stress[1]
- UCSD Undergraduate students experience on average, **3-4 colds per year**, which is the national average[2]
- Research shows that academic stress increases susceptibility to **immune dysregulation, inflammation, and metabolic disorders**[3]
- Evidence linking this exposure and outcome remains inconclusive due to genetics and lifestyles not being standardized in research

Objective

- To examine the association between perceived stress levels and common cold symptoms among UCSD undergraduate students

Method

- Cross-sectional study conducted at UCSD from April-May 2025 targeting **undergraduate students** (N=100) using an anonymous Qualtrics survey
- Convenience Sampling:
  - Social Media Platforms -> Instagram, Discord, email,
  - Word-of-mouth in different classes
- 10-Item New Hampshire Employee Assistance Program **stress scale**[4]:
  - 1 = Never, 2 = Almost never, 3 = Sometimes, 4 = Fairly often, 5 = Often
  - For questions 4, 5, 7, and 8, scores were reverse coded (1 = Often to 5 = Never)
- **Data analysis** includes Spearman Correlation and Linear Regression via SPSS v.29

Results

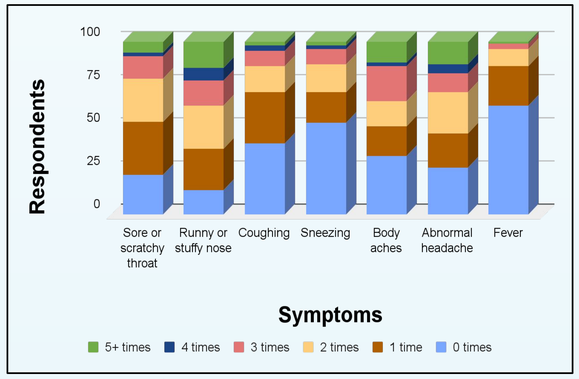
Table 1. Collected Demographics (N=100)

Ethnicity:	**n**
Asian	55
Hispanic/Latino	18
White	11
Middle Eastern/North African	5
Black/African American	2
Other / Mixed Ethnicities	9
Departments:	
Arts & Humanities	3
Biological Sciences	26
Data Science	3
Engineering	9
Health Sciences	23
Physical Sciences	4
Scripps Institute of Oceanography	2
Social Sciences	38
Double Counted (Multiple Categories) (e.g., Health + Social Sciences, Bio + Health, etc.)	12

Table 2. Stress Level Distribution

Stress Levels	**n (%)**
Low (10-23)	0%
Moderate (24-36)	76%
High (37-50)	24%

Figure 1. Cold Symptom Frequency



Runny nose and sore throat are the most common symptoms, possibly reflecting mild or seasonal illnesses (Fig. 1). This distribution is right-skewed (more values concentrated on the lower end), suggesting that most people experienced each symptom infrequently

Table 3: Spearman Correlation

	Correlation Coefficient	**p-value**
Stress Scores & Cold Symptoms	0.204	0.041

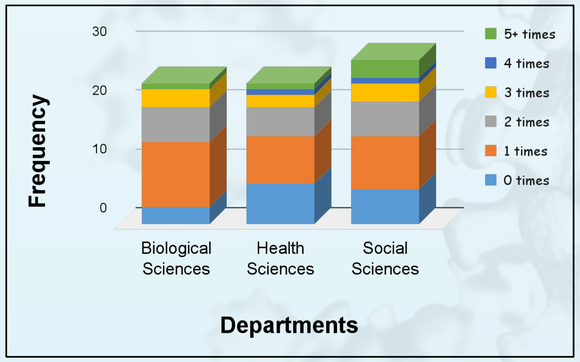
There is a weak (ρ = 0.204) but statistically significant correlation (p-value 0.041) between cold symptoms and stress scores

Table 4. Linear Regression

	Unstandardized B	**Standardized Coefficient Beta**	**p-Value**
Constant	0.952	x	0.864
Stress Scores	0.477	0.283	0.004

Higher perceived stress levels were significantly associated with more frequent cold symptoms among UCSD undergraduates (p=0.004).
("x" indicates a missing value from SPSS output)

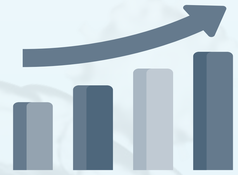
Figure 2. Sore Throat Frequency Across Majors



Sore throat is among the most common symptoms (Fig. 1). The graph suggests that **Social Sciences students** are most prone to frequent sore throats, followed by **Biological Sciences students** (Fig. 2). This pattern may be influenced by factors such as academic workload, stress levels, or social and study habits specific to each department, but further investigation is needed to determine any causal relationships

Conclusions

- Based on the Spearman correlation test, there is a **positive correlation** between perceived stress and common cold symptoms experienced amongst undergraduate students
- The Linear Regression Test shows that students who report **higher stress levels** are more likely to experience **more cold symptoms** due to the positive correlation
- Findings from **Figure 2** reveal that Biological Science majors experienced more sore throats than Computer Science majors, which suggests that Biological Science majors experience **higher levels of stress**
- These findings expand on current research that had only established connections between stress and **chronic conditions** such as depression and heart disease[5]



Policy Implications

- **Stress management courses** should be included as part of UCSD's curriculum to address these findings, such as the Science of Wellbeing course given at Yale University[6]
- **Stress assessments** in routine student health services at UCSD are warranted to possibly limit the onset of the common cold on campus

Acknowledgments & References

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