

Effects of Noise Pollution on Sleep Quality

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Objective

To examine the relationship between noise pollution and quality of sleep among UCSD undergraduates.

Background

- **Sleep Deprivation:** major public health issues linked to chronic diseases among college students
- **Environmental Noise Pollution:** traffic, roommates, indoor disturbances, impact sleep quality, recognized by WHO
- **Undergraduates are a vulnerable group:** research exists explaining how campus noise affects sleep, health & academic performance

Methods

- **Cross sectional study:** anonymous, self-reported 11-item online Google Form survey distributed to undergraduate students via social media and word-of-mouth.

Objective Measurements:

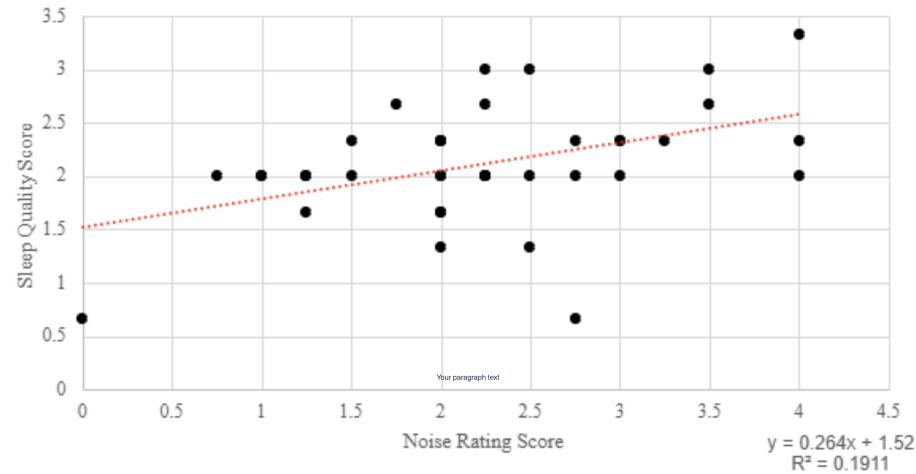
- **Weinstein Noise Sensitivity Scale (WNSS)** adjusted to 5-point Likert Scale: Higher WNSS score relates to higher perceived noise sensitivity
- **Pittsburgh Sleep Quality Index (PSQI)** adjusted to 5-point Likert scale: Higher PSQI score relates to poorer perceived sleep quality

Statistical Approach:

- **Excel and SPSS Software:** Scores combined to produce Likert scale sum score.
- **Linear regression analysis** and **Pearson's correlation**

Results

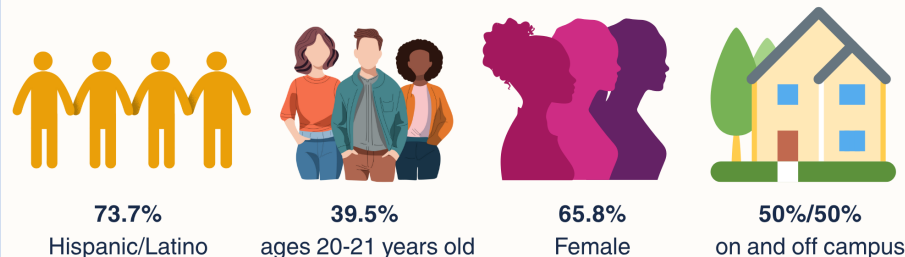
Figure 1. Correlation Between Noise Exposure and Sleep Quality Outcome Among Undergraduates



Sample Characteristics

- **Total Participants:** n= 38
- **Exposure:** noise pollution
- **Outcome:** sleep quality
- **Pearson's Correlation:** weak positive relationship
- **p-value:** 0.02, statistically significant against $p < 0.05$

Major Participant Characteristics



Conclusion

- **Weak, positive** correlation between increased exposure to noise pollution and poor sleep quality
- **Low R^2 value** can be attributed to the complexity of measuring sleep behavior
- **Causality cannot be inferred** because study is cross-sectional
- **Further research** is needed to investigate the potential difference between groups that live on-campus vs. off-campus

Policy Implications

- **Promote Quiet hours for on Campus housing:** implementation & enforcement of nighttime noise regulations to help support students sleep
- **Education on sleep hygiene:** Public Health campaigns can help raise awareness about the impacts of environmental noise on sleep & academic performance
- **Invest in noise mitigation tools:** Provide students with access to noise cancelling tools or sound proof areas

Acknowledgements

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