Academic Stress and Anxiety Related to Online Learning in NYC College Students During COVID-19

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INTRODUCTION

• Chronic or significantly high levels of stress may lead to mental and physical health problems and can influence morbidity and mortality.
• Anxiety disorders are the most prevalent psychiatric disorders in the general population.
• Online learning has been recommended and implemented as a measure to reduce the spread of COVID-19 in schools.
• In response to the COVID-19 pandemic, colleges have made a widespread shift from in-person to online learning as either a partial or complete means of education. Such a drastic change has resulted in increased levels of stress in the student population, which is likely to have an influence on mental health.

PURPOSE

• To assess whether a relationship exists between perceived stress and anxiety in NYC college students who have transitioned to online learning during the COVID-19 pandemic.

METHODS

• Wagner College IRB approval was granted.
• An *a priori* power analysis revealed that the minimum sample size needed to achieve significance was 90 respondents (G-power Version 3.1.9.6 Germany).
• A *p* value < 0.05 was considered significant.
• An electronic survey was distributed via email and social media.
  ○ Survey consisted of 6 demographic items, 5 education items, and 18 likert-scale questions containing the PSS and GAD-7 instruments.
• Sample size was **N = 278.**
• Data was analyzed with IBM SPSS Version 26 (Armonk, NY) with alpha level set a 0.05.

Inclusion Criteria:
● Subjects ≥ 18 years of age that are currently enrolled in a NYC college or university with no known previous diagnosis of anxiety disorder.
● Completed surveys.
Exclusion Criteria:
● Subjects < 18 years of age, not currently enrolled in a NYC college or university, with known previous diagnosis of an anxiety disorder.
● Incomplete surveys.

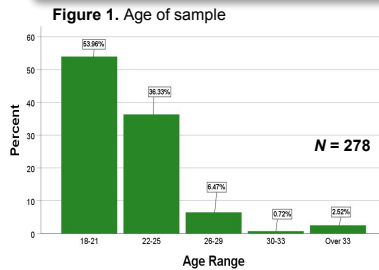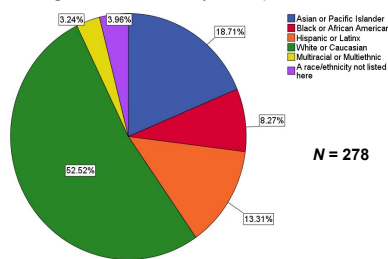## RESULTS

Figures 1 and 2. Demographic data of sample

Figure 1. Age of sample

N = 278

Figure 2. Race/ethnicity of sample

N = 278
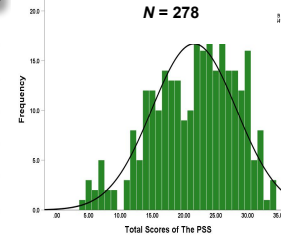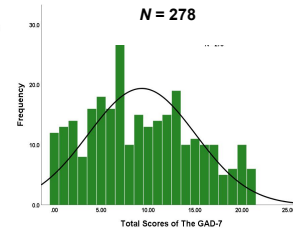
Figure 3. Total PSS scores

N = 278

Figure 4. Total GAD-7 scores

N = 278

Figures 3 and 4. Output data for the total scores of the PSS and the GAD-7 instruments in percentage respectively

Table 1. PSS and demographic variables

Variables	N	Spearman's Rho	p value
Perceived Stress x Enrollment Status	278	0.052	0.391
Perceived Stress x Education Style	278	-0.012	0.841
Perceived Stress x Major	278	-0.057	0.343
Perceived Stress x GPA	278	-0.056	0.354
Perceived Stress x Age	278	0.002	0.969
Perceived Stress x Gender Identity	278	-0.055	0.358
Perceived Stress x Ethnicity	278	-0.092	0.125
Perceived Stress x Sexual Orientation	278	0.016	0.796
Perceived Stress x Household Income	278	-0.121	0.043
Perceived Stress x English Primary Language	278	-0.041	0.497
Perceived Stress x Existing Anxiety Diagnosis	278	0.015	0.804

Table 1. statistical significance found between stress and household income.

Table 2. GAD-7 and demographic variables

Variables	N	Spearman's Rho	p value
Perceived Anxiety x Enrollment Status	278	0.063	0.296
Perceived Anxiety x Education Style	278	-0.013	0.831
Perceived Anxiety x Major	278	0.022	0.709
Perceived Anxiety x GPA	278	-0.006	0.915
Perceived Anxiety x Age	278	-0.077	0.200
Perceived Anxiety x Gender Identity	278	-0.060	0.321
Perceived Anxiety x Ethnicity	278	-0.091	0.132
Perceived Anxiety x Sexual Orientation	278	0.008	0.896
Perceived Anxiety x Income	278	-0.110	0.065
Perceived Anxiety x English Primary Language	278	-0.032	0.590
Perceived Anxiety x Existing Anxiety Diagnosis	278	0.042	0.490

Table 2. No statistical significance was found between perceived anxiety and demographic variable.

CONCLUSIONS

• In our study there was a moderate correlation between the scores from the PSS and GAD-7, however there was no statistically significant correlation found between the stress of online learning and anxiety.
• Our results demonstrated a statistically significant correlation between perceived stress and household income.
• More research is needed to determine the sources of stress and anxiety in college students.

EDUCATIONAL RELEVANCE

Our results highlighted the prevalence of moderate-severe anxiety in college students indicating that the recommendation to screen college aged people should be enforced amongst clinicians.

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