Resilience and Mental Health: Unraveling the Interplay of Depression, Anxiety, and Stress in First–Generation College Students

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Introduction

College students often face a myriad of challenges that contribute to the prevalence of mental health issues such as depression, anxiety, and stress (Ramon-Arbues et al., 2020). The outbreak of COVID–19 further worsened these mental health issues (Salimi et al., 2023). One key factor that could combat these outcomes is resilience, defined as the ability to bounce back or positively recover from adversity and stress (Smith et al., 2008). Despite growing recognition of resilience's protective role, little is known about how its impact differs based on gender and first–generation college student status. This study investigates how resilience mitigates depression, anxiety, and stress among college students, with a specific focus on how gender and first–generation college student status moderate these relationships.

We begin by exploring whether first–generation (FG) students demonstrate different levels of resilience compared to non–first generation (NFG) students. Next, we assess how gender differences emerge within these groups, setting the stage for an in–depth analysis of how resilience correlates with mental health outcomes. We propose that individuals with higher levels of resilience may experience lower levels of depression, anxiety, and stress. This inverse relationship highlights the importance of providing evidence–based approaches to strengthen students' resilience, such as providing opportunities for social support (Ahluwalia et al., 2023).

Resilience and Mental Health in College Students

Resilience is a critical psychological trait that influences how individuals respond to stress and challenges. It serves as a buffer against the negative effects of difficult circumstances, enabling people to quickly regain their mental health and well–being. In a rapidly changing and often unpredictable world, resilience is increasingly recognized as essential for long–term success and personal fulfillment (Kennison, 2022). For college students, resilience is particularly important due to the unique challenges they face during this critical period of development (Ahluwalia et al., 2023). College life is often marked by significant transitions, including moving away from home, adjusting to new academic demands, and navigating social relationships in a new environment. These transitions can be stressful, increasing vulnerability to mental health issues such as depression, anxiety, and stress (Ramon-Arbues et al., 2020). The ability to effectively cope with these challenges—by drawing on resilience—can determine whether a student thrives or struggles during their college years.

Resilience is associated with a wide range of positive outcomes for college students, both academically (Ayala & Manzano, 2018; Sukup & Clayton, 2021) and mentally (Ahmed & Julius,

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2015; DeRosier et al., 2013). Academically, resilient students are more likely to persevere in the face of difficulties, such as poor grades or challenging coursework, especially if they show resourcefulness (Ayala & Manzano, 2018). They are better equipped to handle setbacks, viewing them as opportunities for growth rather than insurmountable obstacles. This adaptive mindset fosters academic success, as resilient students are more likely to employ effective study strategies, seek help when needed, and maintain motivation when faced with adversity.

In addition to academic outcomes, resilience is strongly linked to mental health outcomes. College students with higher levels of resilience are generally better at managing stress, which is a common and often overwhelming experience in higher education. Resilient students tend to employ healthier coping strategies, such as seeking social support, engaging in problem-solving, and maintaining a positive outlook (Ahluwalia et al., 2023; Eisenberg et al. 2016). These strategies help mitigate the impact of stress, reducing the likelihood of developing anxiety and depression. Moreover, resilience can contribute to greater overall life satisfaction and emotional well–being, as it enables students to achieve a sense of balance and perspective during challenging times.

The association between resilience and mental health outcomes is particularly noteworthy given the increasing prevalence of mental health issues among college students. Research indicates that students who lack resilience are more susceptible to experiencing chronic stress, which can lead to a range of negative consequences, including burnout (Jordan et al., 2020), academic failure (Ayala & Manzano, 2018; Sukup & Clayton, 2021), and withdrawal from social activities (Yıldırım & Tanrıverdi, 2021). In contrast, students with high resilience are better able to bounce back from stressors, maintaining their psychological well–being and continuing to engage fully in their academic and social lives. Furthermore, resilience not only protects against negative outcomes but also enhances positive outcomes. For example, resilient students are more likely to develop a strong sense of self–efficacy (Cassidy, 2015), the belief in their ability to succeed in specific situations. This self–efficacy, in turn, promotes a proactive approach to challenges, fostering a cycle of positive reinforcement where success builds further resilience and confidence.

Gender Differences in Resilience

Men tend to exhibit higher resilience than women (Gök, A. & Yılmaz Koğar, E., 2021; Lee, et al., 2020; Yalcin-Siedentopf, et al. 2021), especially in the college context (Graves et al. 2021; Sojer, et al. 2023). This effect might be a function of the types of coping strategies that men and women tend to employ. For instance, Goulet et al. (2023) observed that women who solicit social support exhibit higher resilience and other mental health outcomes. This effect was not seen in men, most likely because men are less likely to utilize social support as a coping strategy. Furthermore, women college students also report higher levels of interpersonal skills and emotional intelligence. Alternatively, men are more likely to employ problem–focused coping strategies and by doing so are also more likely to resolve the problem, eliminate the stressor, and develop a sense of resilience (Graves et al. 2021). It is also important to consider the role of stress perception and reporting in understanding these sex differences. Women in college typically report higher levels of stress and are more likely to employ interpersonal skills and emotional intelligence in their coping strategies (Brougham, et al 2009). Men, on the other hand, are less likely to report stress, which might

contribute to their perceived higher resilience, regardless of whether they exhibit it. This discrepancy in stress reporting may partially explain why men appear more resilient in certain studies, as resilience is often self–assessed or inferred based on reported stress levels.

First–Generation College Students: Resilience and Emotional Challenges:

First–generation (FG) college students, defined as those who are the first in their families to attend college, face unique challenges that differ from their non–first generation (NFG) peers, which resulted in a 27% graduation rate in 2018 (Newsome, 2022). The challenges these students face include financial difficulties (Pratt, et al., 2017), lack of familial academic support (Covarrubias, et al., 2018), and the need to navigate unfamiliar cultural and academic environments (Longwell-Grice, et al. 2016).

Regardless of the challenges FG students face, research suggests that these individuals may exhibit both strengths and vulnerabilities compared to their NFG peers. Alvarado et al. (2017) found that FG students exhibit higher levels of resilience as opposed to their NFG peers. This could be for several reasons including exhibiting increased motivation to improve the socio–economic status of their families, having a history of overcoming adversity (Nelson, 2016), or becoming aware of the support mechanisms of a university to help achieve their goals (Azmitia, et al., 2018). Despite these strengths, FG students often encounter barriers that can undermine their resilience. Financial stress is a significant concern, as many FG students must balance academic responsibilities with part–time jobs or financial worries. This strain can erode their resilience, making it harder to persist through challenges. Moreover, feelings of imposter syndrome—doubting their abilities and fearing they do not belong—are prevalent among FG students. These feelings can sap their confidence and resilience, leading to disengagement or academic underperformance. Family obligations can also create tension, as FG students may feel torn between their academic commitments and family expectations. This conflict can increase stress and reduce their ability to maintain resilience, particularly if family needs are prioritized over academic goals.

These factors make resilience particularly critical for the success of FG students. Existing research highlights the importance of culturally sensitive mentorship as a form of social support that might foster a sense of resilience among these students (Newsome, 2022; Ramos, 2019). Social support from peers, mentors, and campus resources is crucial, as it provides both practical assistance and emotional encouragement, helping students navigate the complexities of college life.

Despite the difficulties experienced by FG college students, a study by Alvarado et al. (2017) suggests that while FG students may exhibit higher levels of resilience, they also show lower emotional intelligence. This leads to an intriguing question: Is the relationship between resilience and mental health consistent across both FG and NFG college students? The exploration of this association provides valuable insights into the nuanced experiences of different student populations. While prior research on first–generation men and women has produced mixed

findings, our study builds on this work by considering resilience across both groups simultaneously, offering a broader perspective on how gender and first–generation status intersect.

Building upon this, the current study aims to extend our understanding by exploring potential gender differences in the proposed relationships. Few studies have systematically investigated whether resilience operates similarly for both men and women college students, making this exploration an important contribution to the existing literature.

Study Rationale

Considering the previous research, it is evident that there are some noteworthy patterns. The inverse relationship between resilience and mental health challenges holds true for both FG and NFG students, challenging previous assumptions about the relationship between resilience and emotional intelligence (Alvarado et al., 2017). Conflicting findings regarding gender differences in resilience and its correlation with stress warrant further investigation, emphasizing the complexity of these relationships within the college student population. These results underscore the importance of considering diverse factors when examining the interplay between resilience and mental health outcomes among college students.

Hypotheses and Plan of Analysis

Group differences in resilience.

Our first hypothesis (H1) predicted that there will be significant differences in resilience between men and women college students due to the unique challenges faced by each gender. Our second hypothesis (H2) predicted that first–generation college students will exhibit different levels of resilience compared to non–first–generation college students. Our third hypothesis (H3) predicted that there will be an interaction between gender and first–generation status in predicting resilience levels among college students.

Associations between resilience and mental health outcomes.

Having examined the group differences in resilience, it is important to understand how resilience is associated with mental health outcomes (i.e., depression, anxiety, and stress) within these primary groups. This will offer deeper insights into the practical implications of our findings, particularly for mental health interventions and support systems for college students. Our fourth hypothesis (H4) predicted that resilience will be inversely correlated with three mental health outcomes: depression, anxiety, and stress, regardless of gender or FG status.

Method

Participants

This study employed a cross–sectional survey design using convenience sampling to examine resilience and mental health outcomes among first–generation and non–first–generation college students. One–hundred and eighty–three adult college students were recruited. Mean age was 20.02 years (SD = 2.12). One–hundred and eight participants identified as female, 71 as male and

four as non–binary. There were 123 NFG students, 58 FG students, and four students who reported "I don't know."

Materials

As part of a larger study participants completed three questions on a computer or personal mobile device. First, participants completed a demographic questionnaire where they reported their age, gender, and FG status. Then, participants completed a 6–item Brief Resilience Scale (BRS; Smith et al. 2008). Participants rated their agreement with six statements on a Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The average score on the BRS served as an indicator of participants' resilience levels. Then, participants completed a shortened 21–item *Depression, Anxiety and Stress* Scale (DASS-21; Lovibond & Lovibond, 1995). This questionnaire comprises three subscales (i.e., depression, anxiety and stress), each consisting of seven items. Participants rated their experiences over the past week on a Likert scale ranging from 0 (Did not apply to me at all) to 3 (Applied to me very much or most of the time). Subscale scores for depression, anxiety and stress were computed separately.

Procedure

This study was reviewed and approved by the university's Institutional Review Board (IRB) ensuring that all research procedures adhered to ethical guidelines for the protection of human subjects. Participants were recruited in person at the institution's university center, where they were greeted by a research assistant. After providing verbal assent, participants reviewed and signed the informed consent form digitally on the research assistant's iPad. They then completed a 15–minute survey administered via Qualtrics XM.

Data Analysis

The data were analyzed using JASP version 0.18.3. Descriptive statistics, including means and standard deviations, were calculated for each measure. To test H1, H2, and H3, we conducted a 2X2 ANOVA. Due to their limited sample sizes, we excluded two small subgroups, non–binary students ($n = 4$) and students who did not know their generational status ($n = 2$). This exclusion is necessary to ensure the robustness of our findings and the validity of the statistical tests. To test H4, we examined correlations between resilience and three mental health outcomes: depression, stress, and anxiety. This was examined separately for men and women and again separately for first–generation students and non–first–generation students.

Results

Group Differences in Resilience

A 2 (Gender: Men, Women) × 2 (First–Generation Status: Yes, No) analysis of variance (ANOVA) was conducted to examine the effects of gender and first–generation (FG) status on college student resilience. The results revealed a significant main effect of gender, F (1,173) = 6.98, p = .009, indicating that men (M = 3.59, SD = 0.88) reported significantly higher levels of resilience than women (M = 3.29, SD = 0.88). Therefore, H1 was supported, as the findings revealed significant differences in resilience between men and women.

However, the main effect of first–generation status was not significant, F (1,173) = 0.29, p = .59, indicating no significant difference in resilience between first–generation (M = 3.38, SD = 0.94) and non–first–generation students (M = 3.37, SD = 0.88). Therefore, H2 was not supported.

The interaction effect between gender and first–generation status on resilience was also not significant, F (1,173) = 2.53, p = .11, indicating that the effect of gender on resilience did not differ significantly based on whether the student was a first–generation college student. Therefore, H3 was not supported.

Table 1. *Means, Standard Deviations, and Correlations of Measures*

	Females (n = 108)	Males (n = 71)	Non-First Gen (n = 123)	First Gen (n = 58)
Resilience	3.29 (.88)*	3.59 (.88)*	3.37 (.88)	3.38 (.04)
Depression	1.77 (.87)	.87 (.91)	1.84 (.89)	1.90 (.99)
Anxiety	1.91 (.88)	.90 (.80)	1.96 (.81)	2.03 (.97)
Stress	2.20 (.83)	.19 (.91)	2.21 (.84)	2.28 (.96)

Note. *Indicates a significant difference between groups.

Associations Between Resilience and Mental Health Outcomes

To investigate H4, the association between resilience and depression, anxiety, and stress, a series of bivariate correlations was run. It was predicted that higher levels of resilience would be associated with lower levels of depression, stress, and anxiety. The results revealed a moderate negative correlation for resilience and depression (r = -.43, p < .001), anxiety (r = -.38, p < .001), and stress (r = -.43, p < .001) for the entire sample.

Additionally, these correlations were examined for men and women separately (see Table 2). As predicted, resilience was negatively associated with depression (r = -.44, p < .001), anxiety (r = -.37, p < .001), and stress (r = -.49, p < .001) for women. Resilience was negatively associated with depression (r = -.38, p = .001), anxiety (r = -.33, p = .006), but not stress (r = -.19, p = .120) for men.

Table 2. *Correlations of All Measures for Men and Women*

	Resilience	Depression	Anxiety	Stress
Resilience	--	-.44***	-.37***	-.49**
Depression	-.38***	.	.69***	.69***
Anxiety	-.33**	62***	--	.28*
Stress	-.19	65***	.62***	--

Note. Correlations for women are depicted above the diagonal whereas correlations for men are seen below.

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

Additionally, these correlations were examined for FG and NFG students separately (see Table 3). As predicted, resilience was negatively associated with depression (r = -.36, p =.006), anxiety (r = -.32, p = .010), and stress (r = -.31, p = .020) for FG students. Resilience was negatively associated with depression (r = -.47, p = .001), anxiety (r = -.41, p = .001), and stress (r = -.41, p < .001) for NFG students.

Table 3. *Correlations of All Measures for FG and Non-FG Participants*

	Resilience	Depression	Anxiety	Stress
Resilience	--	-.36**	-.32**	-.31*
Depression	-.47***		.77***	.73***
Anxiety	-.41***	62***	--	.72***
Stress	-.41***	64***	.65***	--

Note. Correlations for FG are depicted above the diagonal whereas correlations for non-FG are seen below.

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

Discussion

The present study sought to examine group differences in resilience based on gender and first-generation (FG) college student status, and to investigate the correlations between resilience and mental health outcomes, specifically depression, anxiety, and stress. Our findings offer several key insights into these relationships.

H1-H3: Group Differences in Resilience

As predicted in H1, men exhibited significantly higher levels of resilience compared to women, a result consistent with previous research (Gök & Yılmaz Koğar, 2021). This could be attributed to the different coping strategies employed by men and women, with men more likely to engage in problem–focused coping, which has been linked to increased resilience (Graves et al., 2021). However, this interpretation warrants caution, as men may underreport emotional distress due to social norms around emotional expression. Conversely, women tend to employ emotion–focused coping and seek social support, which, while beneficial for mental health, may not foster resilience to the same extent in certain contexts. Additionally, gender differences in stress perception may contribute to these findings, with women more likely to report higher levels of stress (Brougham et al., 2009).

Contrary to H2, our results did not show significant differences in resilience between FG and NFG students. This finding challenges some prior research suggesting that FG students exhibit higher resilience due to the unique challenges they face (Alvarado et al., 2017). One possible explanation is that FG students in our sample may have benefited from resilience–focused campus initiatives, such as mentoring and social support programs, reducing typical resilience disparities

reported in prior research. This finding underscores the importance of campus resources and mentorship programs, which may help FG students develop resilience on par with their NFG counterparts (Newsome, 2022; Ramos, 2019).

The lack of a significant interaction between gender and FG status (H3) suggests that the effects of gender on resilience do not vary significantly by first–generation status. While prior studies have highlighted the distinct challenges FG students face (Covarrubias et al., 2018), this interaction effect may be minimal in the context of resilience, where other factors such as access to support systems or coping styles may play a larger role.

H4: Resilience and Mental Health Outcomes

Turning to the correlations between resilience and mental health outcomes (H4), the results confirmed the hypothesized inverse relationship between resilience and depression, anxiety, and stress. Higher resilience was associated with lower levels of depression, anxiety, and stress, supporting the notion that resilience acts as a protective factor against negative mental health outcomes (Ahmed & Julius, 2015). These findings align with a growing body of literature suggesting that resilience is critical for fostering mental well–being among college students, particularly in the face of stress (Ramon-Arbues et al., 2020).

Interestingly, the gender differences in resilience extended to its association with stress. While resilience was negatively correlated with stress for women, no such correlation was found for men. This result is surprising and suggests that, as mentioned above, men may experience or report stress differently, potentially underreporting it or using coping mechanisms that are less effective in reducing perceived stress levels (Brougham et al., 2009). Future research might explore whether emotion–focused coping strategies commonly employed by women enhance the protective effects of resilience in ways not captured by traditional resilience scales.

The study's findings also demonstrated that the inverse relationship between resilience and mental health outcomes holds true for both FG and NFG students. This highlights the broad applicability of resilience as a protective factor across student populations. However, given that FG students face unique challenges (Pratt et al., 2017), these results suggest that while resilience buffers against negative mental health outcomes, targeted interventions may still be needed to support this group in other areas, such as academic persistence and emotional intelligence (Alvarado et al., 2017).

Limitations and Future Directions

Despite these important findings, there are several limitations to consider. First, the cross–sectional nature of the study limits our ability to draw causal inferences. Future research could employ longitudinal designs to explore how resilience develops over time and its long–term impact on mental health. Second, the use of self–report measures for resilience and mental health may be subject to bias, as participants may underreport or overreport their experiences. Future studies could incorporate objective or behavioral measures of resilience to complement self–report data.

Another important limitation of this study is the binary approach to measuring gender. While we examined resilience differences between men and women, gender is increasingly recognized as a multifaceted construct that extends beyond the binary framework. Non–binary and

gender–diverse individuals may experience resilience and mental health outcomes differently, and our exclusion of these participants due to small sample size limits the inclusivity of our findings. Future research should aim to include larger, more diverse gender groups and adopt more nuanced measures of gender identity to capture the full range of experiences and how they intersect with resilience and mental health.

Additionally, the study's sample size, while adequate, may limit the generalizability of the findings, particularly for the smaller subgroups, such as non–binary students. Further research with larger and more diverse samples is needed to explore resilience across a wider range of demographic groups. Finally, while the current study focused on gender and FG status, other factors such as socioeconomic status or race/ethnicity may also play a role in shaping resilience and its relationship to mental health outcomes. Future research could examine these additional variables to provide a more comprehensive understanding of resilience in college students.

Conclusion

This study contributes to our understanding of resilience and its relationship with mental health outcomes in college students. The findings underscore the importance of resilience as a protective factor against depression, anxiety, and stress, while highlighting key gender differences in resilience levels and its associations with stress. Although first–generation status did not significantly influence resilience levels, the protective role of resilience was evident across both FG and NFG students. These results suggest that fostering resilience through targeted interventions and support systems could be crucial for promoting mental health and well–being in college students, regardless of their background.

In the context of higher education institutions, the findings from this study can help stakeholders understand the importance of fostering resilience within college students to ensure optimal academic and mental health outcomes. Building off of this study, and similar research, programs that cultivate resilience can be developed and implemented on and around college campuses. Furthermore, recognizing gender–based differences in resilience and stress may allow for tailored interventions that better address the needs of male, female, and non–binary students.

The results of the study suggest that resilience benefits students from various backgrounds, reinforcing the need for inclusive strategies that support both FG and NFG populations. While the groups may face some similar challenges, FG status comes with a unique set of obstacles. Despite these differences, resilience can serve as a buffer for many challenges. Therefore, prioritizing resilience–building programs in higher education institutions is an important step. Programs must be accessible, adaptable, and sensitive to diverse experiences. If applied correctly, resilience–building programs can promote overall well–being, academic success, and mental success within student populations.

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