

Digital Stress, Academic Stress, and Emotion Regulation Difficulties as Predictors of Burnout among Generation Z College Students

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ABSTRACT

Burnout has become an increasingly significant concern among Generation Z college students, particularly in the context of rising academic demands, constant digital engagement, and challenges in emotional self-regulation. Although these factors have been linked to student well-being, their combined and relative influence on burnout remains underexamined. This study examined the predictive effects of digital stress, perceived academic stress, and emotion regulation difficulties on burnout among Generation Z college students. A quantitative cross-sectional design was employed. Data were collected from 418 undergraduate students using standardized self-report instruments administered through an online survey platform. Descriptive statistics and multiple linear regression analyses were conducted using Jamovi software. Findings revealed

that students experienced moderate levels of digital stress, high levels of academic stress, moderate to high levels of emotion regulation difficulties, and high levels of burnout. The regression model was statistically significant, $F(3, 414) = 187.00, p < .001$, explaining 57.5% of the variance in burnout ($R^2 = .575$). Among the predictors, emotion regulation difficulties emerged as the strongest predictor ($\beta = .617, p < .001$), followed by perceived academic stress ($\beta = .129, p = .001$) and digital stress ($\beta = .121, p = .003$). The findings indicate that while academic and digital demands contribute to burnout, difficulties in emotion regulation exert the strongest influence on burnout severity among Generation Z college students. These results underscore the importance of strengthening emotional coping competencies, alongside addressing academic and digital stressors, to reduce burnout risk and inform student support interventions in higher education.

Keywords: *Digital Stress, Academic Stress, Emotion Regulation Difficulties, Burnout, Generation Z, College Students, Higher Education*

INTRODUCTION

In recent years, the rapid expansion of digital technologies has significantly transformed the academic experiences of university students, particularly those belonging to Generation Z (Shtepura, 2025). As digital natives, Generation Z students are continuously immersed in online communication platforms, social media networks, and technology-mediated learning environments (Alruthaya et al., 2021; Bucăța, 2023). While digitally connectivity provides educational and societal benefits, it has also introduced new forms of stress, commonly referred to as digital stress or technostress. Digital stress encompasses pressures related to constant availability, connection overload, approval anxiety, fear of missing out and online vigilance (Steele et al., 2020). At the same time, students continue to face traditional academic stressors such as performance pressure, excessive workload, time constraints, and competitive academic environments (Bedewy et al., 2015; Fayda-Kinik, 2023; Topală, 2025).

When unmanaged, these stressors may contribute to burnout, a multidimensional syndrome characterized by exhaustion, mental distance, cognitive impairment, and emotional impairment (Carmona-Halty, 2024; Van Royen et al., 2024). Given the increasing concerns about student mental health in higher education, understanding how digital and academic demands interact with students' emotional regulation capacities are both timely and socially significant. Investigating these dynamics is essential for informing counseling interventions, institutional mental health programs, and student development policies.

A growing body of international research has established that digital stress is associated with adverse psychological outcomes, including emotional exhaustion and burnout (Borle et al., 2021; Singh et al., 2022; Kaltenecker et al., 2023). Studies in occupational and academic settings have shown that techno-stressors such as information overload, constant connectivity, and online performance pressures significantly predict burnout symptoms (Kaltenecker et al., 2023; Sevic et al., 2025; Kamandulytė, 2026). Similarly, extensive literature confirms that academic stress including performance pressure, workload demands, and examination anxiety is a strong predictor academic burnout among university students (Gonçalves Câmara et al., 2024; Olson et al., 2025; Xia et al., 2025). In addition, research on emotion regulation has consistently demonstrated that difficulties in regulating emotions such as impulse control problems, lack of emotional clarity, and limited coping strategies, are significantly associated with higher levels of burnout (Iuga, et al., 2024; Brandão et al., 2025; Ferreira et al., 2025). Theoretical models such as the Demands-Resources (D-R) theory suggest that high demands (e.g. digital and academic stress) combined with insufficient personal resources (e.g. emotional regulation skills) increase the likelihood of burnout (Demerouti et al., 2001; Salmela-Aro et al., 2022; Jagodics et al., 2023). Overall, prior studies provide strong evidence that stress-related factors and emotional regulation processes are critical determinant of burnout.

Despite the expanding literature on digital stress, academic stress, and emotion regulation, several gaps remain evident. First, most empirical studies have examined these variables independently rather than simultaneously within a unified predictive model. Few studies have investigated how digital stress, academic stress, and emotional regulation difficulties jointly predict burnout in higher education contexts. Second, much of the existing research has been conducted in Western or occupational settings, with limited empirical evidence focusing on Generation Z college students in Southeast Asian or Philippine state university contexts. Third, while digital stress has been increasingly studied in workplace environments, its predictive role in student burnout remains underexplored relative to academic stress. Moreover, limited research has identified which among these factors serves as the strongest predictor of burnout among university students. These deficiencies highlight the need for context-specific, integrative quantitative research that examines multiple stress domains and emotional regulation within a single explanatory framework.

In response to these gaps, this quantitative study aims to examine digital stress, academic stress, and emotion regulation difficulties as predictors of burnout among Generation Z college students. Using a descriptive-correlational research design, the study seeks to determine the levels of digital stress, academic stress, emotion regulation difficulties, and burnout, and identify the relative predictive strength of digital stress, academic stress, and emotion regulation in explaining burnout. Specifically, this study addresses the following research questions: (1) What are the levels of the digital stress, academic stress, emotion regulation difficulties, and burnout among Generation Z college students? (2) Is there a significant relationship between each independent variable and burnout? (3) Do digital stress, academic stress, and emotion regulation difficulties significantly predict burnout? And (4) Which variable is the strongest predictor of burnout?

This study contributes to the literature by integrating digital stress, academic stress, and emotion regulation difficulties within a single predictive framework of student burnout, thereby extending the application of the Demands- Resources theory in higher education contexts. The findings may provide empirical evidence from a Philippine state university setting, addressing the underrepresentation of Southeast Asian populations in burnout research. Practically, the results may inform university administrators, guidance counselors, and student affairs practitioners in designing targeted mental health interventions, digital wellness programs, and emotion regulation workshops. By identifying the strongest predictor of burnout, the study may assist institutions in

prioritizing evidence-based strategies to enhance student well-being and academic resilience. Finally, this research offers both theoretical advancement and practical direction for supporting Generation Z students in increasingly demanding digital and academic environments.

METHODS

Research Design

This study employed a quantitative, cross-sectional predictive research design to examine the extent to which Digital Stress, Perceived Academic Stress, and Emotion Regulation Difficulties predict Burnout among Generation Z college students. Quantitative research is appropriate when the objective is to examine relationships among variables and test predictive models using statistical procedures (Creswell & Creswell, 2023). The design is suitable for determining relationships among variables and assessing the predictive strength of multiple independent variables on a single outcome variable through multiple linear regression analysis.

Research Locale

The study was situated in the higher education context involving Generation Z undergraduate students enrolled in Surigao del Norte State University. Although the data were collected online, the locale of the study refers to the academic setting from which the respondents were recruited.

Sampling Technique

The study employed a non-probability purposive-convenience sampling technique. Participants were selected based on the inclusion criteria that they were undergraduate students belonging to the Generation Z cohort and were accessible during the period of online data collection. The survey link was distributed electronically, and responses were obtained from students who met the study qualifications and voluntarily agreed to participate. This approach is commonly used in quantitative studies when recruitment relies on accessibility and participant willingness, although it may introduce self-selection bias that should be acknowledged in interpretation (Creswell & Creswell, 2023; Nikolopoulou, 2023). Inclusion criteria included: (a) currently enrolled undergraduate students; (b) belonging to the Generation Z cohort; (c) active users of digital technologies; and (d) willingness to provide informed consent.

The final sample size ($N = 418$) was considered adequate for multiple linear regression based on statistical power and common minimum-sample guidelines for regression (e.g., rules-of-thumb based on number of predictors) and on the logic of a priori power analysis for regression models (Faul et al., 2009; Green, 1991; Kang, 2021).

RESULTS AND DISCUSSION

Digital Stress

In Table 1, overall, results indicate that respondents experienced a moderate level of digital stress across all dimensions.

Specifically, Online Vigilance (OV) registered the highest mean score ($M = 3.38$, $SD = 0.851$), suggesting that students moderately experience constant awareness and preoccupation with online activities and notifications. This was followed by Approval Anxiety (AA) ($M = 3.17$, $SD = 0.989$) and Availability Stress (AS) ($M = 3.14$, $SD = 0.825$), indicating moderate concern about being constantly reachable and seeking validation in digital spaces.

Similarly, Connection Overload (CO) ($M = 3.09$, $SD = 0.775$) was interpreted as moderate, reflecting that students experience a manageable yet noticeable burden from excessive online interactions. Among the five dimensions, Fear of Missing Out (FOMO) had the lowest mean score ($M = 2.64$, $SD = 0.994$), although still within the moderate range, indicating that while students experience concerns about missing online experiences, it is relatively less intense compared to other stress components.

The relatively consistent standard deviations (SD ranging from 0.775 to 0.994) suggest moderate variability in responses, indicating that students' experiences of digital stress are somewhat similar across the sample.

The moderate levels of digital stress suggest that while digital engagement is a normative feature of Generation Z students, it remains a consistent source of cognitive and emotional demand. This finding is consistent with previous research indicating that university students commonly experience moderate levels of digital stress despite being accustomed to digital environments (Zayed, 2024). For example, a study involving 600 undergraduate students reported an average level of digital stress among participants and found that higher digital stress was negatively associated with students' academic well-being. These findings suggest that although digital technologies are integral to contemporary learning environments, the demands associated with constant digital engagement may still contribute to psychological strain among students.

Table 1. *Descriptive Statistics for Digital Stress (DS)*

DS Dimensions	Mean	SD	Qualitative Description
Availability Stress (AS)	3.14	0.825	Moderate
Approval Anxiety (AA)	3.17	0.989	Moderate
Fear of Missing Out (FOMO)	2.64	0.994	Moderate
Connection Overload (CO)	3.09	0.775	Moderate
Online Vigilance (OV)	3.38	0.851	Moderate

Academic Stress

In Table 2, findings reveal that students generally experience a high level of academic stress, particularly across performance- and workload-related dimensions.

Among the four components, Academic Self-Perception (ASP) recorded the highest mean score ($M = 3.87$, $SD = 0.613$), interpreted as high, indicating that students experience substantial stress related to their academic competence, self-evaluation, and fear of underperformance. This was followed by Perceptions of Workload (PW) ($M = 3.62$, $SD = 0.654$), suggesting that students perceive their academic demands as heavy and demanding.

Similarly, Pressure to Perform (PP) also registered a high level ($M = 3.52$, $SD = 0.722$), reflecting considerable stress arising from expectations to achieve academically. In contrast, Time Restraints (TR) obtained a mean score of 3.30 ($SD = 0.610$), interpreted as moderate, indicating that while students experience pressure related to time management, it is relatively less intense compared to other academic stress dimensions.

The relatively low standard deviations (ranging from 0.610 to 0.722) suggest homogeneity in responses, indicating that students share similar perceptions regarding academic stress levels.

The findings indicate that students generally experience a high level of academic stress, particularly in relation to performance expectations and workload demands. The highest mean score was recorded for Academic Self-Perception, suggesting that students experience substantial stress associated with academic competence, self-evaluation, and concerns about underperformance. This was followed by Perceptions of Workload and Pressure to Perform, indicating that students perceive their academic responsibilities as demanding and feel considerable pressure to meet performance expectations. These results are consistent with previous research highlighting the significant role of academic demands in shaping students' stress experiences. For instance, Pérez-Jorge et al. (2025) found that the primary academic stressors among university students included homework overload and assessment pressure, both of which contributed substantially to students' psychological strain and mental health

challenges. The study further noted that students often struggle to reconcile academic responsibilities with personal life demands, reinforcing the notion that the intensity of academic workload and evaluative pressures constitutes a central source of stress in higher education environments.

Table 2. *Descriptive Statistics for Perceived Academic Stress (PAS)*

AS Dimensions	Mean	SD	Qualitative Description
Pressure to Perform (PP)	3.52	0.722	High
Perceptions of Workload (PW)	3.62	0.654	High
Academic Self-Perception (ASP)	3.87	0.613	High
Time Restraints (TR)	3.3	0.61	Moderate

Emotion Regulation Difficulties

As illustrated in Table 3, results indicate that respondents generally experience moderate to high levels of emotion regulation difficulties, with two dimensions falling within the high range.

Specifically, Goal-directed behavior difficulties (G) recorded the highest mean score ($M = 3.58$, $SD = 0.945$), interpreted as high, suggesting that students experience considerable difficulty maintaining focus and goal-directed actions when emotionally distressed. Similarly, Non-acceptance of emotional responses (NA) was also rated high ($M = 3.48$, $SD = 1.03$), indicating that students tend to struggle with accepting negative emotional experiences.

In contrast, Impulse control difficulties (I) ($M = 3.25$, $SD = 1.08$), Limited access to emotion regulation strategies (S) ($M = 3.29$, $SD = 0.926$), and Lack of emotional clarity (C) ($M = 3.37$, $SD = 0.907$) were interpreted as moderate, suggesting that while students encounter challenges in managing emotions, these difficulties are not as elevated as those related to goal-directed functioning and emotional acceptance.

The relatively larger standard deviations (ranging from 0.907 to 1.08) compared to academic stress indicate greater variability in emotional regulation capacities among students. This suggests that emotion regulation difficulties are not uniformly experienced across respondents. Consistent with this pattern, Tanacioğlu Aydın and Pekşen Süslü (2023) reported that difficulties in emotion regulation among university students were significantly associated with resilience, suggesting that higher emotion regulation difficulties may undermine students' capacity to cope effectively with stressful experiences. Moreover, DERS-based research among undergraduates indicates that specific facets of emotion dysregulation have meaningful functional consequences: Miller and Racine (2022) found that difficulties achieving goals when upset and non-acceptance of emotions were associated with multiple impulsive and maladaptive behaviors, underscoring the salience of these dimensions as mechanisms through which emotional distress may translate into problematic functioning in young adults.

ERD Dimensions	Mean	SD	Qualitative Description
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Non-acceptance (NA)	3.48	1.03	High
Goal-directed behavior (G)	3.58	0.945	High
Impulsive control (I)	3.25	1.08	Moderate
Limited to ER Strategies (S)	3.29	0.926	Moderate
Lack of Emotional Clarity (C)	3.37	0.907	Moderate

Table 3. *Descriptive Statistics for Emotion Regulation Difficulties (ERD)*

Burnout

As observed in Table 4, findings indicate that respondents generally experience moderate to high levels of burnout, with three out of four dimensions falling within the high range.

Among the dimensions, Exhaustion (E) recorded the highest mean score ($M = 3.74$, $SD = 0.758$), interpreted as high, suggesting that students frequently experience feelings of physical and emotional depletion related to academic demands. This indicates that exhaustion is the most pronounced manifestation of burnout in the sample.

Similarly, Cognitive Impairment (CI) ($M = 3.50$, $SD = 0.89$) and Emotional Impairment (EI) ($M = 3.50$, $SD = 0.887$) were also rated high, suggesting that students experience noticeable difficulties in concentration, memory, emotional stability, and emotional responsiveness as a result of stress exposure.

In contrast, Mental Distance (MD) registered a mean score of 3.37 ($SD = 0.763$), interpreted as moderate, indicating that while students experience some degree of detachment or reduced engagement, it is less pronounced compared to exhaustion and impairment-related dimensions.

The relatively consistent standard deviations (ranging from 0.758 to 0.89) suggest moderate variability in burnout experiences among respondents. These findings are consistent with prior evidence highlighting the prominence of exhaustion as a central manifestation of burnout among university students. For instance, Omar et al. (2026) reported elevated burnout among medical students during examination periods, with exhaustion and cognitive impairment emerging as the most pronounced dimensions. In addition, a systematic review and meta-analysis of studies conducted in low- and middle-income countries found that burnout constitutes a substantial burden among university students, with emotional exhaustion among the most commonly reported symptoms (Kaggwa et al., 2021). Collectively, these findings reinforce the notion that sustained academic pressures and demanding learning environments can contribute to significant emotional and cognitive strain among university students.

Table 4. *Descriptive Statistics for Burnout (B)*

B Dimensions	Mean	SD	Qualitative Description
Exhaustion (E)	3.74	0.758	High
Mental Distance (MD)	3.37	0.763	Moderate

Cognitive (CI)	Impairment	3.5	0.89	High
Emotional (EI)	Impairment	3.5	0.887	High

Regression Analysis

As shown in Table 5, a multiple linear regression analysis was conducted to examine whether Difficulty in Emotion Regulation, Perceived Academic Stress, and Digital Stress significantly predict Burnout among college students ($N = 418$).

The overall regression model was statistically significant, $F(3, 414) = 187.00$, $p < .001$, indicating that the set of predictors reliably explains variation in burnout levels. The model yielded an R value of .758 and an R^2 of .575, suggesting that 57.5% of the variance in burnout is explained by the combined effects of the three predictors. The adjusted R^2 of .572 indicates that the model retains strong explanatory power after adjusting for the number of predictors included.

Examination of individual predictors revealed that Difficulty in Emotion Regulation was the strongest predictor of burnout ($B = 0.528$, $SE = 0.033$, $t = 16.09$, $p < .001$, $\beta = .617$). This indicates that, holding academic stress and digital stress constant, a one-unit increase in emotion regulation difficulties is associated with a 0.528-unit increase in burnout. The standardized coefficient ($\beta = .617$) reflects a strong positive effect, suggesting that emotional regulation deficits substantially contribute to burnout severity.

Perceived Academic Stress also significantly predicted burnout ($B = 0.179$, $SE = 0.054$, $t = 3.30$, $p = .001$, $\beta = .129$). Although statistically significant, the magnitude of its standardized effect is relatively small compared to emotion regulation difficulties. Similarly, Digital Stress significantly predicted burnout ($B = 0.121$, $SE = 0.040$, $t = 3.00$, $p = .003$, $\beta = .121$), indicating a positive but modest contribution.

Comparison of standardized coefficients demonstrates a clear hierarchy of influence: Emotion Regulation Difficulties ($\beta = .617$) exert a substantially stronger effect on burnout than Perceived Academic Stress ($\beta = .129$) and Digital Stress ($\beta = .121$). This suggests that while external stressors contribute to burnout, internal emotional regulation capacity plays a dominant role in explaining burnout levels among students.

Table 5. *Multiple Linear Regression Predicting Burnout ($N=418$)*

Predictor	B	SE	β	T	p
Intercept	0.723	0.163	—	4.43	<.001
Emotion Regulation Difficulties	0.528	0.033	0.617	16.09	<.001
Academic Stress	0.179	0.054	0.129	3.30	.001
Digital Stress	0.121	0.040	0.121	3.00	.003

Model Fit: $R = .758$, $R^2 = .575$, Adjusted $R^2 = .572$, $F(3, 414) = 187.00$, $p < .001$.

The results of the multiple linear regression analysis indicate that difficulty in emotion regulation, perceived academic stress, and digital stress significantly predict burnout among college students, collectively explaining 57.5% of the variance in burnout levels. Among the predictors, difficulty in emotion regulation emerged as the most influential factor, suggesting that students who struggle to manage emotional experiences are more vulnerable to burnout symptoms. This finding underscores the central role of emotional self-regulation in shaping students' responses to academic and psychological stressors. Consistent with this interpretation, Iuga and

David (2024) reported that difficulties in emotion regulation are positively associated with academic burnout and its core dimensions. In addition, perceived academic stress significantly predicted burnout in the present model, indicating that heightened academic demands and pressures contribute to students' burnout experiences. This finding aligns with longitudinal evidence demonstrating that stress significantly predicts academic burnout among college students (Zhang et al., 2023). Finally, digital stress was also found to significantly predict burnout, suggesting that technology-related academic demands may contribute to students' psychological strain. Supporting this interpretation, research examining digital burnout among nursing students found that increased exposure to digital academic resources and prolonged screen time were associated with elevated levels of digital burnout and poorer psychological health (Ibrahim et al., 2025). Communally, these findings suggest that while external academic and digital stressors contribute to burnout, students' ability to regulate emotional experiences remains the most influential factor in explaining burnout severity.

CONCLUSION

This study examined the predictive roles of digital stress, perceived academic stress, and emotion regulation difficulties on burnout among Generation Z college students. The findings reveal that while both academic stress and digital stress significantly contribute to burnout, difficulty in emotion regulation emerges as the most substantial predictor. The regression model accounted for a considerable proportion of variance in burnout, highlighting the combined influence of environmental demands and individual coping capacities in shaping students' burnout experiences.

The results suggest that burnout among college students is not solely driven by external stressors but is strongly influenced by students' ability to regulate emotional responses to these demands. These findings contribute to the growing body of research emphasizing the importance of personal resources within the Demands–Resources framework of student well-being. In particular, strengthening emotion regulation competencies appears to be a critical protective factor that may buffer students against the negative effects of academic and digital pressures.

Largely, the study provides empirical evidence that interventions targeting emotional coping processes may be more impactful than approaches focusing exclusively on reducing workload or managing digital stress. Consequently, higher education institutions may benefit from integrating emotional regulation training, resilience-building initiatives, and mental health support programs to better equip students in navigating the psychological demands of contemporary academic environments.

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