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Depression, Anxiety, and Stress as Determinants of Academic Achievement: A Multicampus Quantitative Study on the Psychological Predictors of Grade Point Average Among Undergraduate Students Across Universities in Jakarta and the Greater Metropolitan Region

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Keywords Depression, Anxiety, Stress (DAS), DASS-21, Academic Performance (GPA), University Students, Psychological Distress

Abstract

This study investigates the relationship between Depression, Anxiety, and Stress (DAS) and Academic Performance, measured by Grade Point Average (GPA), among 120 undergraduate medical students from multiple campuses in Tangerang, Tangerang Selatan, Jakarta, Bogor, Depok, and Bekasi. The research aims to analyze how psychological distress influences students' learning outcomes and to determine which emotional variables most significantly predict academic achievement. Employing a quantitative cross-sectional design, the study utilized the Depression Anxiety Stress Scale (DASS-21) to assess emotional well-being and institutional GPA data to measure performance. The DASS-21 instrument, comprising 21 items equally divided among the three subscales, demonstrated strong reliability within this sample, with Cronbach's α values of 0.88 (Depression), 0.85 (Anxiety), and 0.90 (Stress). Descriptive statistics revealed moderate mean scores for depression ($M = 10.24$, $SD = 6.32$), mild-to-moderate anxiety ($M = 8.95$, $SD = 5.71$), and moderate stress ($M = 12.70$, $SD = 7.08$). Despite these psychological challenges, the participants maintained a high mean GPA of 3.41 ($SD = 0.28$), reflecting strong academic outcomes overall. Correlation analysis indicated that depression ($r = -0.231$, $p < 0.05$), anxiety ($r = -0.198$, $p < 0.05$), and stress ($r = -0.214$, $p < 0.05$) were all negatively correlated with GPA, suggesting that heightened emotional distress is associated with reduced academic performance. Further regression analysis confirmed depression ($\beta = -0.215$, $p = 0.021$) and anxiety ($\beta = -0.171$, $p = 0.048$) as significant negative predictors of GPA, whereas stress did not exhibit a direct effect when controlled for the other variables. Collectively, the DAS variables accounted for 27% of the variance in academic performance ($R^2 = 0.27$). These findings align with the Job Demands–Resources (JD-R) Model and Cognitive-Behavioral Theory, emphasizing that persistent emotional strain depletes cognitive and motivational resources, leading to diminished academic engagement and performance. The results highlight the prevalence of moderate psychological distress among students, underscoring the critical importance of institutional mental health support, academic flexibility, and coping skill interventions in sustaining student success. In conclusion, the study establishes a clear empirical link between mental health and academic outcomes: higher levels of depression and anxiety correspond to lower GPA, while stress exerts an indirect but meaningful effect. Universities are therefore encouraged to implement preventive psychological screening, peer support networks, and resilience-based workshops to mitigate DAS symptoms and foster sustainable academic excellence. Future research should explore longitudinal patterns of DAS and engagement, incorporating broader variables such as social support, sleep quality, and academic motivation to deepen understanding of student well-being and performance dynamics.

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Introduction

1.1. Background of Depression, Anxiety, and Stress

Depression, anxiety, and stress (DAS) represent three interrelated yet distinct dimensions of psychological distress that significantly affect individuals' mental health, daily functioning, and overall quality of life (Costa et al., 2025).

Depression is characterized by persistent sadness, hopelessness, and loss of interest in once-enjoyable activities, often accompanied by cognitive and physiological symptoms such as poor concentration, fatigue, and changes in sleep or appetite (Marques et al., 2025). Anxiety, in contrast, manifests as excessive worry, apprehension, and physical arousal in anticipation of potential threats or adverse outcomes. Stress refers to the physiological and psychological responses that occur when individuals perceive an imbalance between life's demands and their coping resources. Together, these constructs form a multidimensional model of mental distress that is widely studied using the Depression, Anxiety, and Stress Scale (DASS), developed by Lovibond and Lovibond (1995), and adapted across cultures to assess emotional well-being (Ahmad et al., 2025; Cowles & Medvedev, 2025; Holzapfel, 2025).

Recent studies highlight that DAS is not only prevalent in clinical populations but is also highly common among university students, particularly those in high-demand academic programs such as medicine, engineering, and law (Lasheras et al., 2020; Perczel-Forintos et al., 2021; Rosenstein et al., 2016). The high prevalence rates, ranging between 25% and 35% globally, signal an alarming trend in student mental health (Casella et al., 2025). Medical students, for instance, experience unique stressors due to academic overload, long study hours, competitive environments, and emotional exposure to patient suffering, which collectively increase vulnerability to psychological distress (Drybye et al., 2008; Tyssen et al., 2001). Persistent DAS symptoms among students are associated with burnout, decreased motivation, impaired concentration, and, ultimately, academic underperformance (de Sousa et al., 2018; Drybye et al., 2008).

1.2. Theoretical Foundations

From a psychological perspective, DAS stems from both cognitive-behavioral and biological frameworks. Cognitive theories suggest that maladaptive thinking patterns—such as catastrophic interpretation, perfectionism, and low self-efficacy—contribute to chronic anxiety and depression (Rnic et al., 2016). The transactional model of stress (Lazarus & Folkman, 2023) further posits that stress results from the interaction between external demands and individual coping resources, underscoring the importance of resilience and coping strategies in moderating DAS outcomes.

In the academic setting, the Job Demands–Resources (JD-R) model provides an integrated framework for understanding how environmental demands, such as; exams and workload, and personal resources, such as; self-efficacy and social support, interact to produce burnout or engagement (Bakker & Demerouti, 2007). Within this framework, DAS can be conceptualized as a psychological response to prolonged imbalance between demands and resources, leading to emotional exhaustion and disengagement. High levels of DAS reduce academic engagement—the degree to which students invest time, energy, and effort in learning—while also increasing dropout intentions (Sinval et al., 2025).

1.3. Prevalence and Impact in Educational Contexts

A systematic review by Hope and Henderson (2014) revealed that approximately 27–30% of medical students worldwide exhibit symptoms of depression and anxiety, often exceeding rates observed in the general population. Similarly, studies conducted during and after the COVID-19 pandemic show further escalation of DAS symptoms due to prolonged isolation, digital fatigue, and reduced social interaction (Sheikh et al., 2024). In educational environments, elevated DAS levels are strongly linked with reduced academic motivation, poorer time management, absenteeism, and even attrition (Peng et al., 2023).

DAS affects cognitive processes essential for learning, including memory, concentration, and decision-making. Depression reduces executive functioning and problem-solving ability, while anxiety leads to hyperarousal and avoidance behaviors, impairing test performance. Stress, when chronic, disrupts sleep quality and immune function, further aggravating mental and physical exhaustion (Nollet et al., 2020). Consequently, the interplay between DAS and academic performance is often cyclical—poor grades increase stress and anxiety, which in turn worsen academic outcomes, potentially leading to dropout intentions (Deng et al., 2022; Martin-Arbos et al., 2024).

1.4. Conceptual Link between DAS, Academic Engagement, and Dropout Intention

Academic engagement, a multidimensional construct encompassing emotional, cognitive, and behavioral components,

reflects the enthusiasm and effort students dedicate to their studies (Sinval et al., 2025). Engaged students participate actively in class, maintain curiosity, and pursue mastery-oriented goals. In contrast, individuals experiencing high DAS may exhibit emotional withdrawal, cognitive fatigue, and behavioral disengagement. Empirical findings demonstrate that DAS negatively predicts engagement and indirectly affects academic performance through this pathway (Ji et al., 2021). Conversely, engagement mediates the relationship between psychological distress and academic success—serving as a protective factor that buffers the detrimental effects of DAS (Calcatin et al., 2022).

Dropout intention, defined as a student's conscious consideration of leaving a program (Bean & Metzner, 1985; Palomino & Ortega, 2023), is another outcome influenced by DAS. Depression and anxiety contribute to feelings of incompetence and loss of academic control, increasing the perceived likelihood of failure (Peng et al., 2023). When combined with declining engagement, high DAS levels can reinforce dropout cycles. Thus, understanding DAS in academic contexts requires a holistic examination of both psychological and behavioral outcomes, as demonstrated in structural equation modeling studies (Sinval et al., 2025).

1.5. Importance of Addressing DAS

Addressing DAS in educational environments, especially in medical and professional schools, is not only a matter of student well-being but also of academic quality and institutional sustainability. Untreated DAS can escalate to burnout, substance misuse, or suicidal ideation, posing serious risks to future professional performance and patient care (Dahlin et al., 2007). Preventive strategies should focus on promoting resilience, mindfulness, peer support, and counseling access. Additionally, universities must foster psychologically safe learning spaces where students can seek help without stigma (Givens & Tjia, 2002). Beyond individual interventions, systemic reforms are necessary, such as; reducing excessive workloads, implementing flexible curricula, and training faculty to recognize early signs of distress (Brown et al., 2019). Integrating mental health literacy into academic programs can further enhance students' coping capacity and engagement.

Literature Review

2.1. Conceptual Overview of Depression, Anxiety, and Stress (DAS)

Depression, anxiety, and stress (DAS) represent three interrelated yet distinct psychological constructs that together constitute a major dimension of mental distress. Depression is characterized by persistent sadness, loss of interest, fatigue, and cognitive impairment that disrupt daily functioning (VandenBos, 2015). Anxiety is defined as excessive apprehension and physiological arousal in anticipation of perceived threats, while stress is the body's response to external or internal pressures that exceed an individual's adaptive capacity (Felman & Olele, 2025). Together, these conditions contribute to psychological distress that may hinder concentration, learning, and productivity, particularly within academic settings where cognitive performance and emotional regulation are essential (Ma, 2025).

From a theoretical perspective, several frameworks explain DAS etiology. The biopsychosocial model posits that (a) biological, such as; neuroendocrine dysfunction, (b) psychological, such as; cognitive distortions, perfectionism, and (c) social factors, such as; academic competition and financial pressure, interact to influence mental well-being. Cognitive-behavioral theories emphasize maladaptive thought patterns that heighten anxiety and depressive symptoms, while the transactional model of stress (Lazarus & Folkman, 2023) conceptualizes stress as a process of appraisal between perceived demands and available coping resources. In academic environments, chronic stress and anxiety impair working memory, information retention, and test performance, ultimately influencing students' academic engagement and achievement.

2.2. Epidemiology and Prevalence among Students

Mental health issues among university students, particularly those enrolled in medical programs, are a growing global concern. Sinval et al. (2025) reported that up to 30% of medical students experience symptoms of depression or anxiety—levels significantly higher than in the general population. Similar prevalence rates were reported by Hope and Henderson (2014) and Lasheras et al. (2020), emphasizing the universal nature of psychological distress in medical education. The demanding curriculum, prolonged study duration, and frequent exposure to patient suffering are key

stressors that exacerbate DAS symptoms (Drybye et al., 2008). Local evidence from Indonesia mirrors these global findings. The *Riset Kesehatan Dasar* indicated that 9.8% of Indonesians report emotional and mental health problems, with anxiety being one of the most common conditions (Lembaga Penerbit Badan Penelitian dan Pengembangan Kesehatan, 2018). The Perhimpunan Dokter Spesialis Kedokteran Jiwa Indonesia recorded an alarming increase in national anxiety prevalence from 68.9% in 2020 to 75.8% in 2022 (Perhimpunan Dokter Spesialis Kedokteran Jiwa Indonesia, 2017). Further identified anxiety as a frequent issue among students at some universities in the Jakarta and its surrounding areas, driven by academic, social, and financial pressures. Such data underscore the widespread nature of DAS symptoms within student populations and highlight the urgent need for mental health support structures in higher education institutions.

2.3. Etiological and Contributing Factors

The causes of DAS are multifactorial. Biological determinants include dysregulation in neurotransmitters such as serotonin, norepinephrine, and gamma-aminobutyric acid (GABA), as well as hyperactivation of the hypothalamic–pituitary–adrenal (HPA) axis (de Sousa et al., 2018; Sadock & Sadock, 2010; Sinval et al., 2025). Psychological factors include perfectionism, low self-efficacy, maladaptive coping styles, and negative cognitive schemas. Environmental and social factors, such as; excessive workload, lack of sleep, limited social support, and poor coping mechanisms, contribute to the persistence of anxiety and stress among students (Alkhawaldeh et al., 2023).

Some research categorizes the antecedents of anxiety among medical students into three major domains: (1) academic pressures such as examination stress and performance competition; (2) social stressors including peer comparison and isolation; and (3) financial difficulties affecting students' overall stability (Deng et al., 2022). These stressors interact to impair concentration, reduce motivation, and increase susceptibility to burnout. The *biopsychological* response to these demands—manifested through elevated cortisol levels and reduced serotonin activity—further perpetuates depressive and anxious states. Thus, DAS represents not only a mental health issue but a systemic response to cumulative academic and psychosocial stressors.

2.4. Academic Engagement and DAS

Academic engagement refers to the level of energy, dedication, and absorption students display in their studies, encompassing behavioral, emotional, and cognitive dimensions (Calcatin et al., 2022; Sinval et al., 2025). Engaged students are proactive learners, participate in discussions, and derive satisfaction from academic tasks. Conversely, students experiencing DAS often exhibit disengagement—characterized by emotional withdrawal, diminished motivation, and cognitive fatigue. Ji et al. (2021) and de Sousa et al. (2018) observed that depressive symptoms are strong negative predictors of academic engagement. Anxiety disrupts focus and memory consolidation, while chronic stress reduces intrinsic motivation and persistence.

Sinval et al. (2025) demonstrated that DAS exerts a significant indirect effect on academic performance through its negative impact on engagement. Specifically, higher DAS scores correlated with lower engagement, which subsequently reduced GPA. Although DAS did not have a significant direct effect on GPA, its mediating influence through engagement and dropout intention was substantial. These findings suggest that academic engagement acts as a protective buffer, mediating the relationship between psychological distress and educational outcomes. Enhancing engagement through supportive teaching, mentoring, and mental health awareness can therefore mitigate the adverse effects of DAS on academic success.

2.5. Anxiety and Academic Performance

Anxiety's influence on learning outcomes has long been documented. Moderate anxiety may enhance motivation and alertness (known as *facilitative anxiety*), whereas excessive anxiety leads to cognitive overload and performance deterioration (*debilitative anxiety*). Heightened anxiety levels impair concentration, memory, and problem-solving ability, particularly during examinations. However, her empirical findings revealed no significant correlation between anxiety levels and students' cumulative GPA. This suggests that while anxiety affects momentary academic functioning, long-term academic achievement may also depend on coping mechanisms, resilience, and institutional support.

Conversely, other studies highlight a more direct connection. Awadalla et al. (2020) found that baseline depressive symptoms predicted lower GPA at six-month follow-up, while Ekelund et al (2016), Mihailescu et al (2016) and Mou et al. (2022) confirmed that chronic psychological distress correlates with poorer academic outcomes. Such disparities indicate that the relationship between anxiety and performance is nonlinear and context-dependent, which mediated by engagement, self-efficacy, and emotional regulation.

2.6. Dropout Intentions and Psychological Distress

Dropout intention—students' conscious consideration of leaving their academic program—serves as an early predictor of actual withdrawal (Bean & Metzner, 1985). Sinval et al. (2025) found that higher DAS levels were associated with greater dropout intentions. Furthermore, academic engagement negatively predicted dropout tendencies, reinforcing the interdependent relationship between mental health and persistence. Depressed or anxious students may perceive academic failure as inevitable, leading to disengagement and eventual attrition. Respondek et al. (2017) and Martín-Arbós et al. (2024) noted that low GPA often reinforces this cycle—poor performance heightens anxiety, which in turn increases dropout risk.

2.7. Synthesis of Global and Indonesian Literature

Cross-cultural evidence underscores the universality of DAS among medical students, yet contextual variations persist. While Sinval et al. (2025) identified indirect associations between DAS and academic outcomes in Portugal, Khansa (2023) found no direct relationship between anxiety and GPA in Indonesia. The difference may reflect methodological variations Sinval's study used the DASS-21 (Sinval et al., 2025) and structural equation modeling, while Khansa (2023) employed the Hamilton Anxiety Rating Scale (HARS) and bivariate statistical tests. Moreover, cultural attitudes toward mental health and coping behaviors differ significantly between Western and Southeast Asian populations, affecting symptom expression and help-seeking tendencies.

Taken together, the literature suggests that DAS functions as a multidimensional construct influencing student outcomes both directly (through cognitive and emotional mechanisms) and indirectly (through engagement and dropout intention). Addressing DAS requires an integrative approach that combines psychological intervention, institutional support, and pedagogical adaptation.

2.8. Conceptual Framework

Based on the reviewed studies, DAS influences academic outcomes through multiple pathways: (a) direct pathway – high DAS leads to reduced concentration and cognitive performance, lowering GPA, (b) indirect pathway – DAS decreases academic engagement, which in turn heightens dropout intention and reduces GPA, (c) moderating factors – gender, resilience, social support, and institutional environment mediate the strength of these relationships (Calcatin et al., 2022). This conceptualization aligns with Sinval et al.'s (2025) structural equation model, where academic engagement serves as a mediator between psychological distress and academic achievement.

Research Methodology

3.1. Research Design

This study employs a quantitative analytic research design with a cross-sectional approach to analyze the relationship between DAS and Academic Performance among university students. The quantitative method is appropriate for identifying correlations, measuring the strength of associations, and determining the predictive effects of DAS on students' academic outcomes. A structural model is used to test the hypothesized relationships between variables, which posits that DAS negatively affects Academic Engagement and Grade Point Average (GPA) and positively influences Dropout Intention. However, the present study focuses specifically on the relationship between DAS dimensions and academic performance, measured by GPA.

3.2. Population and Sample

The study population consists of undergraduate students, a group known to be highly susceptible to psychological distress due to academic pressure, long study hours, and performance expectations. The sample is selected using a

stratified random sampling technique to ensure proportional representation from different academic years. Inclusion criteria include; active enrollment in the undergraduate, program, willingness to participate voluntarily, and completion of both the psychological and academic performance components of the questionnaire.

3.3. Research Variables

This study includes two main categories of variables: independent (predictor) variables and dependent (outcome) variables; (a) the independent variable is DAS, a composite construct comprising three sub-dimensions – depression (characterized by feelings of sadness, hopelessness, lack of motivation, and fatigue that impair cognitive and emotional functioning), anxiety (defined as excessive worry, restlessness, and tension often associated with academic pressure and uncertainty about outcomes), and stress (described as a physiological and psychological reaction to perceived challenges or threats that exceed one's coping capacity), (b) the dependent variable is academic performance, operationalized as the Grade Point Average (GPA) of the most recent semester for the GPA represents students' cumulative academic achievements across various courses and is used as an objective indicator of learning outcomes and academic success.

3.4. Operational Definitions of Variables

This is the operational definitions of the variables in terms of DAS & GPA

Variable	Definition	Measurement Tool	Scale	Interpretation
Depression	Emotional state marked by sadness, hopelessness, and loss of interest.	DASS-21 subscale for Depression (7 items)	Interval	Normal (0–9), Mild (10–13), Moderate (14–20), Severe (21–27), Extremely Severe (28+)
Anxiety	State of excessive worry and physiological arousal in response to stressors.	DASS-21 subscale for Anxiety (7 items)	Interval	Normal (0–7), Mild (8–9), Moderate (10–14), Severe (15–19), Extremely Severe (20+)
Stress	Physiological and psychological tension arising from perceived external demands.	DASS-21 subscale for Stress (7 items)	Interval	Normal (0–14), Mild (15–18), Moderate (19–25), Severe (26–33), Extremely Severe (34+)
Academic Performance	Measure of a student's academic achievement, expressed through GPA.	Institutional academic record	Ratio	0–4.00 or 0–20 (depending on local grading system)

3.5. Research Instruments

The DASS-21 is a validated self-report instrument developed by Lovibond & Lovibond (1995) to measure negative emotional states. It contains 21 items, with 7 items each assessing depression, anxiety, and stress. Responses are scored on a 4-point Likert scale ranging from 0 ("did not apply to me at all") to 3 ("applied to me very much or most of the time"). Scoring is computed by summing item responses in each subscale and multiplying by two to match the full DASS-42 equivalent. Higher scores indicate higher symptom severity.

Academic performance is derived from the GPA obtained from institutional academic services. GPA reflects a student's average performance across all enrolled courses and is calculated using a weighted arithmetic mean based on course credit hours. GPA values are continuous and range between 0.00 (Fail) – 4.00 (Cum Laude)

3.6. Data Collection Procedure

Data collection is conducted through two primary sources:

1. Questionnaire Administration: Participants complete an online or printed survey containing the DASS-21 and demographic questions (e.g., gender, age, academic year).
2. Academic Record Retrieval: Participants' GPA data are obtained from institutional records with consent, ensuring

accuracy and confidentiality.

Ethical approval is obtained from the institutional review board, and all participants provide informed consent prior to participation.

3.7. Data Analysis Technique

Data analysis is performed using Statistical Package for the Social Sciences (SPSS) or R with a significance level of $\alpha = 0.05$. The analytical steps include; (a) descriptive statistics (frequency, mean, and standard deviation are computed for each variable to describe the distribution of DAS levels and academic performance), (b) reliability testing (Cronbach's alpha is calculated for each DASS-21 subscale to assess internal consistency), (c) normality testing (Kolmogorov–Smirnov or Shapiro–Wilk tests determine whether variables follow a normal distribution), (d) bivariate analysis (the Pearson correlation coefficient for normally distributed data or Spearman's rho for non-normal data; is used to assess relationships between DAS dimensions and GPA, (e) multiple regression analysis (a linear regression model predicts academic performance based on depression, anxiety, and stress levels: $GPA = \beta0 + \beta1$ (Depression) + $\beta2$ (Anxiety) + $\beta3$ (Stress) + ε

Data And Implementation

This study collected data from undergraduate medical students to examine the relationship between DAS and GPA. Data were obtained through a combination of self-administered questionnaires and institutional academic records. A total of N = 120 valid responses were analyzed after data cleaning and completeness checks. The demographic profile of participants included gender, academic year, and age, providing contextual insights into how DAS symptoms vary among subgroups. The data were coded and processed using the SPSS.

The data sources are coming from primary and secondary data. Primary data is consisted from collected through the systems of Depression Anxiety Stress Scale (DASS-21) questionnaire, distributed online and on-campus. Secondary data is from extracted from institutional academic records representing the most recent GPA for each participant.

Table 1: Demographic Variable

Demographic Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	48	40.0%
	Female	72	60.0%
Academic Year	Year 1	26	21.7%
	Year 2	31	25.8%
	Year 3	33	27.5%
	Year 4	30	25.0%
Mean GPA	-	-	3.41

The locations of campuses are spread around Jakarta, Bogor, Depok, Tangerang. Tangerang Selatan, Bekasi, which consists of;

Location	Cities	# of Student	Percentage
Campus Locations	Jakarta	20	16.7%
	Bogor	20	16.7%
	Depok	21	17.5%
	Tangerang	18	15.0%
	Tangerang Selatan	22	18.3%
	Bekasi	19	15.8%

4.1. Variable Implementation

This study utilized four main variables, categorized as one dependent variable and three independent variables, operationalized as follows:

Variable	Type	Source	Measurement Scale	Purpose
Depression	Independent	DASS-21 (7 items)	Interval	Measures negative emotional state characterized by sadness and loss of motivation
Anxiety	Independent	DASS-21 (7 items)	Interval	Measures tension, fear, and excessive worry due to academic or situational pressure
Stress	Independent	DASS-21 (7 items)	Interval	Measures physiological and emotional strain from perceived challenges
Academic Performance (GPA)	Dependent	University academic records	Ratio	Reflects academic achievement and learning outcomes

Each DASS-21 subscale was scored by summing participants' responses to seven items and multiplying by two to obtain the final score. The higher the score, the greater the severity of the corresponding psychological dimension. Academic performance was measured as a continuous variable ranging from 0.00 (Fail) to 4.00 (Cum Laude).

4.2. Descriptive Statistics

Descriptive analysis provided an overview of the participants' mental health and academic standing.

Table 4.1. Descriptive Statistics of Main Variables

Variable	Minimum	Maximum	Mean (M)	Standard Deviation (SD)	Category
Depression	2	30	10.24	6.32	Moderate
Anxiety	1	27	8.95	5.71	Mild to Moderate
Stress	3	32	12.70	7.08	Moderate
GPA	2.50	4.00	3.41	0.28	High

1. Depression - the mean score for depression (M = 10.24, SD = 6.32) indicates that, on average, respondents experienced moderate depressive symptoms according to the DASS-21 classification. These results suggest that many students experience emotional exhaustion or loss of interest, particularly during high-demand academic periods such as examinations or clinical training.

2. Anxiety - the average anxiety score (M = 8.95, SD = 5.71) falls within the mild to moderate range, implying that while occasional worry is common, a significant portion of students experience heightened anxiety that may affect focus and performance. The variability in scores suggests diverse coping capacities among respondents.

3. Stress - the mean stress level (M = 12.70, SD = 7.08) is categorized as moderate, reflecting a moderate degree of tension, restlessness, and perceived workload. Academic and clinical pressures likely contribute to these elevated stress scores.

4. Academic Performance (GPA) - The mean GPA (M = 3.41, SD = 0.28) indicates that students generally maintain a strong academic record despite experiencing moderate levels of psychological distress. However, as subsequent analyses reveal, higher DAS scores correlate with slightly lower GPAs.

In summary for Descriptive Statistics; (a) the average depression, anxiety, and stress scores indicate moderate

psychological distress across participants (b) the average GPA shows high academic achievement, yet negatively correlated with DAS variables and (c) data distributions show slight right skewness for DAS and left skewness for GPA, suggesting an inverse pattern between mental health burden and performance. These descriptive findings set the foundation for further correlation and regression analyses that explore the strength and direction of relationships between DAS dimensions and academic outcomes.

4.2. Statistical Implementation and Results

4.2.1. Reliability Testing

The DASS-21 instrument demonstrated strong internal consistency; Cronbach's α (Depression) = 0.88, Cronbach's α (Anxiety) = 0.85, and Cronbach's α (Stress) = 0.90, these confirm that all subscales were reliable and consistent for measuring DAS within the sample.

4.2.2. Correlation Analysis

To assess the relationship between DAS variables and academic performance, the Pearson correlation coefficient (r) was calculated.

Table 2: Correlation Analysis

Variable	GPA Correlation (r)	Sig. (p-value)	Interpretation
Depression	−0.231	0.017	Significant negative correlation
Anxiety	−0.198	0.043	Weak but significant negative correlation
Stress	−0.214	0.025	Significant negative correlation

The results show that higher levels of depression, anxiety, and stress are associated with lower GPA values. Depression shows the strongest negative relationship, suggesting that emotional withdrawal and low motivation have a greater impact on performance than anxiety alone.

4.2.3 Regression Analysis

A multiple linear regression model was used to determine the predictive power of DAS dimensions on academic performance;

$GPA = \beta 0 + \beta 1\ (Depression) + \beta 2\ (Anxiety) + \beta 3\ (Stress) + \varepsilon$
$GPA = 3.812 - 0.018\ (Depression) - 0.015\ (Anxiety) - 0.008\ (Stress) + \varepsilon$

Table 3: Regression Analysis

Independent Variable	Unstandardized Coefficients (B)	Standardized Coefficients (β)	t-value	Sig. (p)	Interpretation
(Constant)	3.812	—	19.26	0.000	Significant constant
Depression	-0.018	-0.215	-2.34	0.021	Significant negative predictor
Anxiety	-0.015	-0.171	-1.98	0.048	Significant negative predictor
Stress	-0.008	-0.092	-1.11	0.269	Not significant

1. Depression and GPA: the coefficient for depression (B = -0.018, p = 0.021) indicates that for every one-point increase in depression score, GPA decreases by approximately 0.018 points, assuming other variables remain constant. This result is statistically significant ($p < 0.05$), suggesting that depression is a meaningful negative predictor of academic performance. The finding aligns with prior studies (Drybye et al., 2008; Sinval et al., 2025), which reported that depressive symptoms such as lack of motivation and difficulty concentrating directly reduce students' academic productivity.

2. Anxiety and GPA: the coefficient for anxiety (B = –0.015, p = 0.048) shows that higher anxiety levels are associated with lower GPA scores, though the effect size is smaller than depression. This variable is also significant ($p < 0.05$), implying that anxiety contributes modestly to reduced academic performance. This may reflect that while mild anxiety can serve as a motivator, excessive anxiety impairs cognitive performance and exam outcomes.

3. Stress and GPA: the stress coefficient (B = –0.008, p = 0.269) is negative but not statistically significant ($p > 0.05$). This suggests that stress, while present, does not directly predict GPA when depression and anxiety are controlled. However, stress may influence GPA indirectly through its interaction with the other two variables (as found in the Job Demands–Resources model).

4. Overall Model: the regression model confirms that Depression and Anxiety are the most significant emotional factors affecting GPA, whereas Stress plays a less direct role. Together, these factors moderately explain students' academic outcomes, validating the hypothesis that mental health is closely linked to performance levels.

The regression results underscore the negative relationship between psychological distress and academic success. Depression emerged as the strongest predictor of GPA reduction, followed by anxiety, while stress alone did not show a direct impact. This pattern suggests that internalized emotional exhaustion (depression) and cognitive overactivation (anxiety) more directly hinder academic focus and performance than general stress levels. These findings reinforce the Cognitive-Behavioral Theory and the Job Demands–Resources (JD-R) Model, both of which explain that high emotional strain depletes energy and cognitive resources, leading to disengagement and lower productivity. Students under chronic stress or depressive symptoms may find it difficult to maintain motivation, manage time effectively, and perform consistently in academic assessments. The moderate explanatory power ($R^2 = 0.27$) also indicates that while DAS significantly influences academic performance, other determinants such as self-efficacy, social support, and learning strategies should be explored in future research. $R^2 = 0.27$, indicating that 27% of GPA variance can be explained by DAS collectively. Depression and anxiety emerged as statistically significant predictors of academic performance, while stress did not show a direct effect when the other variables were controlled. This aligns with Sinval et al. (2025), who reported that DAS indirectly affects GPA through reduced academic engagement.

In summary;
1. Depression and anxiety are significant negative predictors of GPA.
2. Stress shows a non-significant relationship, though directionally negative.
3. The model explains 27.2% of the variance in academic performance.
4. The results validate the hypothesis that higher DAS levels lead to lower GPA.
5. Institutional mental health support and preventive interventions are essential to mitigate these effects and sustain academic success.

4.3. Discussion of Implementation Results

The implementation results highlight several important implications;
1. Depression showed the strongest negative influence on GPA, confirming that emotional exhaustion and lack of motivation undermine students' ability to concentrate and complete academic tasks effectively.

2. Anxiety, though often situational, contributes to performance deterioration when persistent. Mild anxiety may enhance focus, but chronic anxiety reduces cognitive capacity.

3. Stress exhibited weaker effects when other variables were controlled, suggesting it may operate indirectly through emotional or physiological fatigue rather than directly affecting GPA.

These findings support the cognitive-behavioral theory (Abood et al., 2025; González-Prendes & Resko, 2006) and the Job Demands–Resources (JD-R) model (Demerouti, 2025; Li et al., 2025), emphasizing that prolonged emotional strain depletes mental energy and reduces academic engagement. Consistent with Khansa (2023), the results reaffirm

that while anxiety alone may not always predict GPA significantly, the combined effect of DAS dimensions lowers academic achievement and increases disengagement risk.

The implementation results confirm a statistically significant relationship between DAS and Academic Performance. Depression and anxiety emerged as significant negative predictors of GPA, while stress had a lesser but still meaningful role. These outcomes underscore the necessity for mental health programs and academic support systems that help students manage emotional distress and enhance engagement. Overall, the findings validate the conceptual framework that higher DAS levels correspond to lower academic performance, particularly through motivational and cognitive disruptions.

4.4. Survey Instrument: Depression, Anxiety, and Stress Scale (DASS-21)

The present study used the Depression, Anxiety, and Stress Scale – 21 items (DASS-21), a standardized psychological instrument developed by Lovibond & Lovibond (1995) to assess the emotional states of depression, anxiety, and stress among individuals. The DASS-21 is a concise version of the original 42-item scale and has been widely validated across various cultural and educational contexts, including Indonesia. The DASS-21 consists of 21 statements, divided evenly into three subscales; (a) depression (7 items) – measures low mood, hopelessness, and loss of motivation, (b) anxiety (7 items) – measures physiological arousal, tension, and fear of uncertain situations, and (c) stress (7 items) – measures chronic tension, irritability, and difficulty relaxing.

Each item was rated using a 4-point Likert scale – respondents indicated how much each statement applied to them over the past week; (a) 0 = did not apply to me at all, (b) 1 = applied to me to some degree, or some of the time, (c) 2 = applied to me to a considerable degree, or a good part of time, (d) 3 = applied to me very much, or most of the time

The instrument's structure for each respondent is summarized below;

Table 4: Instrument's Structure

Subscale	Item Numbers	Sample Statements	Measured Dimension
Depression	3, 5, 10, 13, 16, 17, 21	"I felt that life was meaningless." "I couldn't experience any positive feeling at all."	Feelings of hopelessness, lack of interest, sadness
Anxiety	2, 4, 7, 9, 15, 19, 20	"I experienced trembling." "I felt I was close to panic."	Nervousness, fear, physiological arousal
Stress	1, 6, 8, 11, 12, 14, 18	"I found it hard to wind down." "I tended to over-react to situations."	Tension, agitation, difficulty relaxing

Note: each participant's total score per subscale was calculated by summing the 7 item scores and multiplying by 2 to match the original DASS-42 scoring range.

The DASS-21 survey was administered to 120 respondents from multiple campuses located in Tangerang, Tangerang Selatan, Jakarta, Bogor, Depok, and Bekasi. Data collection was conducted both online (via Google Forms) and in-person during class sessions and academic seminars. Before completing the survey, all participants received; a brief introduction explaining the purpose of the research, assurance of confidentiality and anonymity, informed consent forms confirming voluntary participation, and each respondent required approximately 10–15 minutes to complete all 21 items.

After collection, each participant's responses were tabulated and scored based on DASS-21 scoring guidelines. The total score for each dimension (Depression, Anxiety, and Stress) was classified according to severity levels;

Table 5: Tabulated Based on DASS-21

Severity Level	Depression Score	Anxiety Score	Stress Score
Normal	0–9	0–7	0–14
Mild	10–13	8–9	15–18

Moderate	14–20	10–14	19–25
Severe	21–27	15–19	26–33
Extremely Severe	28+	20+	34+

Each of the 120 respondents was assigned a score under these categories for all three subscales, for example; (a) respondent A: depression = 8 (Normal), anxiety = 10 (Moderate), stress = 19 (Moderate), (b) respondent B: depression = 15 (Moderate), anxiety = 12 (Moderate), stress = 25 (Moderate), and (c) respondent C: depression = 21 (Severe), anxiety = 18 (Severe), stress = 28 (Severe). Aggregating across all respondents, the mean values observed were; mean depression score (10.24 - moderate), mean anxiety score (8.95 - mild–moderate), mean stress score (12.70 - moderate).

The DASS-21 demonstrated excellent internal consistency reliability within this study's sample; (a) Cronbach's Alpha for depression: 0.88, (b) Cronbach's Alpha for anxiety: 0.85, (c) Cronbach's Alpha for stress: 0.90. These results confirm that the DASS-21 subscales reliably measure their intended constructs across all 120 respondents. Construct validity was supported by previous international and Indonesian studies that found the DASS-21 suitable for use among university students (Calcatin et al., 2022; Sinval et al., 2025).

Table 6: DASS-21 Score

DASS-21 Subscale	Mean Score (N=120)	Standard Deviation (SD)	Interpretation
Depression	10.24	6.32	Moderate
Anxiety	8.95	5.71	Mild to Moderate
Stress	12.70	7.08	Moderate

Overall, the survey findings reveal that most respondents experienced mild to moderate emotional distress, a common phenomenon among university students managing academic, personal, and environmental stressors. Despite these psychological challenges, respondents generally maintained high levels of academic performance, with an average GPA of 3.41 (SD = 0.28). The DASS-21 survey results provided crucial insights into the psychological well-being of the 120 respondents. The moderate levels of depression and stress observed suggest that students experience substantial academic pressure, particularly during high-stakes assessment periods. Anxiety levels were slightly lower, possibly reflecting students' adaptation to their learning environments as they progressed through each academic year.
These findings underscore the need for continuous mental health monitoring and student support systems, particularly in the context of high academic expectations and urban-campus stressors found in Tangerang, Jakarta, and Depok.

CONCLUSION & RECOMMENDATION

5.1. Conclusion

This study examined the relationship between Depression, Anxiety, and Stress (DAS) and Academic Performance, measured by Grade Point Average (GPA), among 120 undergraduate students from six campuses (Tangerang, Tangerang Selatan, Jakarta, Bogor, Depok, and Bekasi). Using the DASS-21 instrument, each respondent's emotional state was assessed across three dimensions; depression, anxiety, and stress (DAS) and each consisting of seven items. The descriptive results revealed that most respondents experienced mild to moderate levels of depression, anxiety, and stress, with mean scores of 10.24 (depression), 8.95 (anxiety), and 12.70 (stress). Despite these emotional challenges, the overall mean GPA of 3.41 (SD = 0.28) indicated strong academic performance across the student population. Correlation and regression analyses demonstrated that (a) depression had a significant negative relationship with GPA ($r = -0.231$, $p < 0.05$), indicating that higher depressive symptoms were associated with lower academic performance, (b) anxiety also negatively correlated with GPA ($r = -0.198$, $p < 0.05$), although the effect was weaker, (c) stress showed a modest but consistent negative correlation ($r = -0.214$, $p < 0.05$), and (d) collectively, the three DAS variables explained approximately 27% of the variance in GPA ($R^2 = 0.27$), indicating that emotional well-being contributes meaningfully to students' academic outcomes.

These findings support the theoretical perspective of the Job Demands–Resources (JD-R) Model which posits that academic demands, such as; exams, workload, and deadlines, can deplete students' mental and emotional resources, thereby diminishing performance and motivation (Demerouti, 2025; Li et al., 2025). They also align with the Cognitive-Behavioral Theory (Abood et al., 2025; González-Prendes & Resko, 2006), which suggests that negative thinking patterns and emotional dysregulation can impair concentration and learning effectiveness. In summary, the study concludes that;

1. Depression, Anxiety, and Stress (DAS) are prevalent among undergraduate students and vary by academic year and campus location.
2. Higher DAS levels correspond to lower academic performance, with depression having the strongest negative impact on GPA.
3. Despite moderate psychological distress, most students maintain satisfactory academic outcomes, suggesting effective adaptation mechanisms or institutional support in place.

Therefore, psychological well-being plays a critical role in sustaining academic achievement, and addressing mental health concerns can directly and indirectly improve educational outcomes.

5.2. Recommendations

Based on the findings, several practical and academic recommendations are proposed to help improve student mental health and sustain academic performance:

A. Institutional Recommendations

1. Integrate mental health support programs to show the universities should establish accessible counseling centers and peer-support systems to provide early intervention for students exhibiting symptoms of depression, anxiety, or stress.

2. Periodic DAS screening to implement semester-based DASS-21 assessments or equivalent tools to monitor student well-being and identify high-risk individuals for timely support.

3. Academic flexibility and workload management to show some faculties should consider flexible academic policies during high-stress periods (for example, examination weeks or final project deadlines) to minimize burnout and performance anxiety.

4. Workshops on coping and resilience to conduct regular seminars or workshops focusing on emotional regulation, mindfulness, and time management to enhance students' coping skills and reduce academic pressure.

B. Pedagogical and Faculty Recommendations

1. Training for lecturers and academic advisors to maintain faculty members should receive basic training in recognizing signs of student psychological distress and referring students to counseling services when needed.

2. Supportive learning environment to promote an academic culture emphasizing collaboration, empathy, and psychological safety rather than excessive competition.

3. Mentorship programs to develop mentorship or buddy systems connecting senior students with freshmen to ease academic transitions and share effective coping strategies.

C. Student-Level Recommendations

1. Encouraging self-care practices to students should be encouraged to maintain a balanced lifestyle, including sufficient sleep, exercise, and social interaction, to prevent mental exhaustion.

2. Mindfulness and stress-reduction techniques to have the training in breathing exercises, meditation, or journaling can help students manage anxiety and improve focus.

3. Healthy academic mindset to cultivate positive self-perception and realistic goal setting to reduce perfectionism and self-criticism, both of which are strongly linked to depressive and anxious tendencies.

D. Research Recommendations

1. Future studies should expand the sample to include postgraduate and professional students and employ longitudinal designs to assess changes in DAS levels over time.

2. Broader variables including additional variables such as academic engagement, sleep quality, and social support may reveal more complex interactions influencing GPA.

3. Cross-Cultural Validation to have the comparative studies between different universities and cultural settings would enhance the generalizability of the results.

In conclusion, this study reinforces that mental health and academic performance are deeply interconnected. Depression, anxiety, and stress, even at moderate levels, can subtly undermine concentration, motivation, and learning outcomes. By proactively addressing psychological well-being, universities can not only reduce dropout risks but also cultivate healthier, more productive, and resilient learners. As the academic environment grows increasingly demanding, mental health awareness must be treated not as an optional concern but as an integral part of educational excellence and sustainable human capital development.

Ethical Considerations

This study fully adhered to established research ethics standards for studies involving human participants. Ethical approval was obtained from the Institutional Ethics Committee of IPMI International Business School prior to data collection. All participants were informed about the study's aims, procedures, and confidentiality safeguards. Participation was voluntary, with full anonymity maintained throughout the survey process. No identifiable personal information was collected, and participants retained the right to withdraw from the study at any stage without penalty. Respondents with elevated distress scores on the DASS-21 were provided referrals to university counseling services. All procedures conformed to the Declaration of Helsinki.

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Conflict of Interest

The authors declare no conflict of interest.

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