Level of Academic Stress, Motivation, Study Habits, and Performance Among Bachelor of Secondary Education Major in Mathematics Students: An IMRAD-Style

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Abstract — This study examined the relationship among academic stress, motivation, study habits, and academic performance among Bachelor of Secondary Education (BSEd) major in Mathematics students in selected higher education institutions during the School Year 2025–2026. Specifically, the study assessed the respondents' profile, level of academic stress, level of motivation, study habits, and academic performance based on General Weighted Average (GWA). It further determined the significant relationships among the variables and proposed a localized intervention plan. The study utilized a quantitative descriptive-correlational research design involving 170 respondents selected through stratified random sampling. Data were gathered using validated survey questionnaires and analyzed using frequency count, percentage, weighted mean, Shapiro–Wilk Test, Pearson Product–Moment Correlation, and multiple regression analysis. Findings revealed that respondents generally experienced High Academic Stress, particularly in self-perceptions and academic expectations. Learners also demonstrated High Motivation in both intrinsic and extrinsic dimensions, while amotivation was interpreted at a moderate level. Furthermore, respondents exhibited Good Study Habits across all dimensions. Academic performance was generally satisfactory to very satisfactory. Significant relationships were found between academic stress, motivation, study habits, and academic performance. Academic stress negatively influenced academic performance, while motivation and study habits positively predicted academic achievement. The findings served as basis for proposing a localized learner

support and academic enhancement program intended to strengthen student well-being, motivation, and academic resilience among BSEd Mathematics students.

Keywords: Academic Stress, Motivation, Study Habits, Academic Performance, Mathematics Education, College Students

I. INTRODUCTION

Academic stress has become one of the most pressing concerns affecting higher education students worldwide. Increasing academic demands, institutional expectations, examinations, financial limitations, and personal pressures contribute to heightened levels of stress among college learners. In contemporary educational settings, stress has been recognized as a significant factor influencing students' emotional well-being, cognitive functioning, motivation, engagement, and academic performance. Recent educational and psychological studies have consistently emphasized that excessive academic stress negatively affects learners' concentration, memory retention, emotional stability, and academic productivity (Pascoe et al., 2020; OECD, 2023).

Within tertiary education, Bachelor of Secondary Education (BSEd) students majoring in Mathematics encounter unique academic challenges because of the demanding nature of mathematics-related coursework, pedagogical requirements, instructional preparation, and performance expectations. Mathematics education programs often require learners to demonstrate advanced analytical reasoning, problem-solving competencies, instructional planning, and academic consistency. These academic demands may significantly contribute to increased stress levels among students while simultaneously influencing their motivation, study habits, and academic performance.

Academic performance remains a central indicator of learner success in higher education. Academic achievement reflects the extent to which learners successfully attain educational goals and competencies through formal learning experiences. Educational researchers have emphasized that academic performance is not solely influenced by intellectual ability but also by psychological, emotional, behavioral, and environmental factors such as stress, motivation, and study habits (Ryan & Deci, 2020). Students who experience excessive academic stress may

demonstrate lower engagement, decreased motivation, emotional exhaustion, and ineffective learning behaviors, all of which negatively affect academic achievement.

Motivation likewise plays a critical role in learners' academic success. Self-Determination Theory explains that learners who possess high intrinsic and extrinsic motivation demonstrate stronger persistence, greater engagement, and improved academic outcomes because they are driven by both personal satisfaction and future aspirations (Ryan & Deci, 2020). Intrinsically motivated learners actively participate in learning because they enjoy acquiring knowledge, while extrinsically motivated learners are influenced by rewards, recognition, and career aspirations. However, amotivation or lack of academic purpose may contribute to disengagement, low participation, and poor academic performance.

Similarly, study habits significantly affect learner achievement and educational outcomes. Effective study habits include engagement, time management, note-taking, organizing and planning, collaborative learning, and academic preparation. Educational psychology literature emphasizes that learners with productive study habits demonstrate higher self-regulation, improved academic engagement, and stronger educational achievement compared to learners with poor study practices (Zimmerman & Schunk, 2022).

Despite extensive international studies examining academic stress and performance, limited localized research has investigated the combined influence of academic stress, motivation, and study habits on academic performance among BSEd Mathematics students in Philippine higher education institutions. Most existing studies focused on general college populations without specifically examining Mathematics education learners whose academic experiences may differ because of the cognitive and instructional demands of their specialization. Thus, the present study aimed to determine the relationship among academic stress, motivation, study habits, and academic performance among BSEd Mathematics students and propose a localized intervention plan based on the findings.

The study was anchored on the Transactional Model of Stress and Coping by Lazarus and Folkman (1984), which explains that stress results from individuals' appraisal of situations and their perceived ability to cope with academic demands. The study was further supported by the Yerkes–Dodson Law, which posits that moderate stress may enhance performance while excessive

stress decreases efficiency and academic productivity. These theoretical foundations provided a comprehensive framework for examining how stress, motivation, and study habits influence academic performance among BSEd Mathematics students.

II. METHODOLOGY

The study employed a quantitative descriptive-correlational research design. This design was appropriate because it enabled the researcher to describe the existing levels of academic stress, motivation, study habits, and academic performance while simultaneously determining the significant relationships among these variables. Descriptive-correlational research is commonly utilized in educational studies to investigate naturally occurring relationships without manipulating variables (Siedlecki, 2020).

The respondents of the study consisted of 170 Bachelor of Secondary Education major in Mathematics students from selected higher education institutions. Stratified random sampling was employed to ensure proportional representation across year levels. Respondents were selected from both public and private institutions to provide broader representation of BSEd Mathematics learners.

The research instrument consisted of structured and validated questionnaires divided into four major sections: profile variables, academic stress, motivation, and study habits. Academic stress was measured in terms of academic expectations, workload and examinations, and self-perceptions. Motivation was measured through intrinsic motivation, extrinsic motivation, and amotivation. Study habits included engagement, organizing and planning, working with others, managing schoolwork stress, note-taking and reading, and preparing assignments/projects. Responses were measured using a five-point Likert scale. Academic performance was determined through the respondents' General Weighted Average (GWA).

Prior to data collection, the instrument underwent content validation by experts in educational research and psychology. Reliability testing was conducted using Cronbach's alpha to ensure internal consistency of the scales. Ethical considerations were strictly observed, including informed consent, confidentiality, voluntary participation, and anonymity of respondents.

Data were analyzed using frequency count, percentage, weighted mean, standard deviation, Shapiro–Wilk Test, Pearson Product–Moment Correlation, and multiple regression analysis. The Shapiro–Wilk Test determined the normality of the data distribution, while inferential analyses examined significant relationships among variables. Variables with normal distribution utilized parametric statistical procedures, whereas variables with non-normal distribution were analyzed using appropriate non-parametric procedures.

III. RESULTS

The findings revealed that the majority of respondents were 20 years old, female, and enrolled in Eastern Visayas State University. Most respondents came from families whose parents had attained high school education and belonged to low- to middle-income households. Fathers were commonly engaged in farming and driving occupations, while many mothers were housewives.

These findings indicate that the respondents generally came from working-class households with moderate educational backgrounds. Educational research emphasizes that socioeconomic status and parental educational attainment significantly influence learners' access to educational opportunities, emotional support, and academic resources (UNESCO, 2023). The predominance of female respondents also aligns with current higher education trends where female participation exceeds male enrollment in teacher education programs.

Level of Academic Stress

The findings revealed that respondents experienced High Academic Stress across all dimensions, particularly in self-perceptions and academic expectations. Learners felt pressured to maintain high academic performance, meet parental expectations, and compete academically with peers. Respondents also reported emotional distress, self-doubt, and anxiety regarding their academic future.

These findings support contemporary studies indicating that academic stress negatively affects emotional well-being, cognitive functioning, and academic engagement among college

students (Pascoe et al., 2020). High stress associated with self-perceptions suggests that learners internalized academic difficulties as indicators of personal inadequacy, thereby increasing emotional vulnerability and performance anxiety.

Level of Motivation

The respondents demonstrated High Motivation in both intrinsic and extrinsic dimensions. Learners were motivated by enjoyment of learning, curiosity, personal growth, parental expectations, recognition, and future career aspirations. However, amotivation was interpreted at a moderate level, indicating that some learners occasionally experienced uncertainty and academic disengagement.

The findings align with Self-Determination Theory, which emphasizes that intrinsically and extrinsically motivated learners demonstrate stronger engagement and academic persistence (Ryan & Deci, 2020). Nevertheless, moderate amotivation suggests that prolonged stress and academic pressures may contribute to emotional exhaustion and reduced academic purpose among some students.

Study Habits of the Respondents

The respondents exhibited Good Study Habits across all dimensions. Learners actively participated in classroom discussions, organized academic tasks effectively, collaborated with peers, managed school-related stress, and practiced productive note-taking and reading behaviors. Respondents also demonstrated responsibility in preparing assignments and projects.

These findings suggest that learners generally possessed effective academic behaviors and self-regulatory skills that positively supported academic achievement. Educational psychology literature emphasizes that productive study habits enhance engagement, time management, self-regulation, and learner achievement (Zimmerman & Schunk, 2022).

Academic Performance

The respondents generally achieved satisfactory to very satisfactory academic performance based on their General Weighted Average. Most learners obtained grades within acceptable academic standards despite experiencing high levels of academic stress.

The findings suggest that while learners experienced stress, many remained academically resilient because of positive motivation and effective study habits. However, excessive stress still posed risks to emotional well-being and long-term academic sustainability.

Relationship among Variables

The study revealed significant relationships among academic stress, motivation, study habits, and academic performance. Academic stress demonstrated a significant negative relationship with academic performance, indicating that increased stress was associated with lower academic achievement. Conversely, motivation and study habits showed significant positive relationships with academic performance.

These findings support previous studies emphasizing that stress negatively affects cognitive functioning and emotional well-being, while motivation and productive study habits enhance learner engagement and achievement (Ryan & Deci, 2020; Zimmerman & Schunk, 2022). Multiple regression analysis further revealed that motivation and study habits significantly predicted academic performance, highlighting their critical role in sustaining educational success.

IV. DISCUSSION

The findings affirm that academic stress remains a major educational concern among BSEd Mathematics students. Learners experienced pressure arising from academic expectations, examinations, workload demands, and self-perceptions. Such stress negatively influenced emotional well-being and academic functioning. Similar findings were reported by Pascoe et al. (2020), who emphasized that excessive academic stress contributes to emotional exhaustion, reduced engagement, and lower academic performance among university students.

The high levels of intrinsic and extrinsic motivation among respondents indicate that learners remained strongly committed toward educational achievement despite academic challenges. Intrinsic motivation allowed learners to appreciate learning for personal satisfaction, while extrinsic motivation reinforced persistence through career aspirations and parental expectations. These findings are consistent with Self-Determination Theory, which explains that motivated learners demonstrate greater resilience, engagement, and academic persistence (Ryan & Deci, 2020).

The findings regarding study habits further highlight the importance of self-regulation and academic preparation in promoting learner success. Learners who organized tasks effectively, engaged actively in learning, and utilized productive study techniques demonstrated stronger academic functioning. Zimmerman and Schunk (2022) similarly emphasized that self-regulated learners exhibit stronger academic achievement because they effectively manage time, monitor progress, and apply strategic learning behaviors.

The significant negative relationship between academic stress and academic performance suggests that excessive stress undermines learners' cognitive functioning and emotional stability. Stress may impair concentration, memory retention, and problem-solving skills, thereby reducing academic productivity. Conversely, the positive relationships between motivation, study habits, and academic performance indicate that learners who maintain strong motivation and productive study behaviors are more likely to succeed academically despite stressful conditions.

The study therefore underscores the importance of developing institutional interventions that address student stress, strengthen motivation, and enhance study habits. Higher education institutions should establish counseling services, mentoring programs, academic support systems, and stress management initiatives to promote learner well-being and resilience.

V. CONCLUSION

The study concluded that Bachelor of Secondary Education major in Mathematics students generally experienced high levels of academic stress while simultaneously maintaining high motivation and good study habits. Academic stress significantly negatively affected academic performance, whereas motivation and study habits positively influenced educational achievement.

These findings demonstrate that learner achievement is multidimensional and influenced by psychological, emotional, and behavioral factors.

The study further concludes that although students demonstrated resilience and positive learning behaviors, persistent academic stress may threaten emotional well-being and long-term academic sustainability. Therefore, educational institutions must prioritize learner support systems that strengthen emotional resilience, academic motivation, and effective study practices.

The findings provided empirical basis for proposing a localized intervention plan aimed at improving learner well-being, motivation, stress management, and academic performance among BSEd Mathematics students.

VI. RECOMMENDATIONS

Based on the findings of the study, the following recommendations are offered:

1. Higher education institutions should implement stress management and psychosocial support programs for BSEd Mathematics students.
2. Guidance counselors and teachers should provide mentoring activities that strengthen learners' emotional resilience and academic confidence.
3. Schools should conduct seminars and workshops on effective study habits, time management, and self-regulated learning.
4. Faculty members should promote supportive classroom environments that reduce excessive academic pressure while maintaining academic rigor.
5. Parents should be encouraged to provide balanced academic expectations and emotional support for learners.
6. Student organizations should initiate peer support groups and collaborative learning activities that enhance motivation and emotional well-being.
7. Future researchers may conduct similar studies involving other academic programs, variables, and educational contexts to validate and extend the findings of the present study.
8. A localized learner support and academic enhancement program should be institutionalized to strengthen student well-being, motivation, study habits, and academic achievement.

REFERENCES

[1.] Ahmad, I., Gul, R., & Zeb, M. (2022). A qualitative inquiry of university students' experiences of exam stress and its effect on academic performance. Arena of Schooling. https://link.springer.com/content/pdf/10.1007/s42087-022-00285-8.pdf

[2.] Ahmed, Y., Taha, M. H., Al-Neel, S., & Gaffar, A. M. (2018). Students' perception of the learning Environment and its relation to their study year and performance in Sudan. International journal of Medical education, 9, 145–150. https://doi.org/10.5116/ijme.5af0.1fe.

[3.] Andrews, B., Wilding, J. M., & Higson, H. E. (2017). Perfectionism and academic performance in students: The role of minimal stress. Journal of Educational Psychology https://doi.org/10.1037/edu0000151.

[4.] Araújo, A. M., Duarte, J., & Pinto, A. M. (2019). Stress, academic performance, and the mediating role of stress management strategies in university students. Cogent Psychology, 6(1), 1-17.American Psychological Association.(2020). Stress effects on the body. APA.

[5.] Barbayannis G, Bandari M, Zheng X, Baquerizo H, Pecor KW and Ming X (2022) Academic Stress and Mental Well-Being in College Students: Correlations, Affected Groups, and COVID-19. Front. Psychol. 13:886344. Doi: 10.3389/fpsyg.2022.886344 Academic Stress and Mental Well-Being in College Students: Correlations, Affected Groups, and COVID-19.

[6.] Barrera, J. D. (2024). Mathematics academic performance: Multiple regression analysis model among BSEd mathematics students. International Journal of Multidisciplinary: Applied Business and Education Research. https://ejournals.ph/article.php?id=24787

[7.] Blazar, D. (2016). Teacher and teaching effects on students' academic performance, attitudes, and behaviors (Doctoral dissertation, Harvard University). Harvard DASH Repository. http://nrs.harvard.edu/urn-3:HUL.InstRepos:27112692

[8.] Chawla K, Sachdeva V. Domains of stress and coping strategies used by 1st-year medical students. Natl J Physiol Pharm Pharmacol. (2018) 8:366–9. 10.5455/njppp.2017.

[9.] Decillo, A. K. E., Bernabe, R. C., Mercene, A. C., Tiosan, M. R. P., Torga, G. C., & Villanueva, M. J. (2017). Academic stress and academic performance of BEEd students of Occidental Mindoro State College (Unpublished undergraduate thesis). https://www.academia.edu/34691387/ACADEMIC_STRESS_AND_ACADEMIC_PERFORMANCE_OF_BEEd_STUDENTS_OF_THE_COLLEGE_OF_TEACHER_EDUCATION_IN_OCCIDENTAL_MINDORO_STATE_COLLEGE_A_THESIS_PROPOSAL

[10.] Devi, B., Lepcha, N., & Basnet, S. (2023). APPLICATION OF CORRELATIONAL RESEARCH DESIGN IN NURSING AND MEDICAL RESEARCH. Journal of Xi'an Shiyou University, 60-69.

[11.] Devi, R. S., & Mohan, S. (2015). A Study on Stress and Its Effects on College Students. International Journal of Scientific Engineering and Applied Science (IJSEAS), 1, 449-456.

[12.] Elledge, L. C., Willroth, E. C., Herrera, S., Camacho, A. M., & Campbell, M. (2020). Stress and academic performance: A longitudinal study of high school students. Journal of School Psychology, 81, 55–68. https://doi.org/10.1016/j.jsp.2020.04.004.

[13.] Essel, G., & Owusu, P. (2017). Causes of students' stress, its effects on academic success, and stress management by students (Bachelor's thesis, Seinäjoki University of Applied Sciences). https://www.theseus.fi/bitstream/handle/10024/124792/Thesis%20Document.pdf.

[14.] El Ansari, W., et al. "Academic Stress Among University Students: A Multi-country Perspective." Journal of Environmental Research and Public Health, vol. 18, no. 1, 2021, p. 298.

[15.] Francia, M. A., Hernandez, R., Signo, C., & Bacosmo, J. (2025). Stress, study habits and academic performance of students in Cavite State University–Carmona Campus. Psychology and Education: A Multidisciplinary Journal. https://www.academia.edu/123616787/Stress_Study_Habits_and_Academic_Performance_of_Students_in_Cavite_State_University_Carmona_Campus

[16.] Habiba, S., & Wirahadikusumah, A. (2020). Understanding Stress and Aggressive Behavior of Undergraduate students at Universiti Utara Malaysia (Uum). International Journal of Advanced Research, 8(01), 323-333. https://doi.org/10.21474/ijar01/10298.

[17.] Hafen, C. A., et al. "Mindfulness Training Improves Well-being and Academic Achievement in Middle School Students: Evidence from a Randomized Controlled Trial." Mindfulness, vol. 10, no. 7, 2019, pp. 1196–1207.

[18.] Higgins, E. T., Scholer, A. A., & Shah, J. Y. (2018). The Psychology of Regulation for Supporting Primary and Secondary Control and Minimizing Systemic Stress. Perspectives on Psychological Science, 13(5), 586–609. https://doi.org/10.1177/1745691618764253.

[19.] Idd, O. R. (2020). The influence of teachers' motivation on students' academic performance in public primary schools (Master's thesis, The Open University of Tanzania). https://repository.out.ac.tz/2753/

[20.] Jober, G. G. (2023). The effects of motivation on teachers' performance in primary schools of Yem Special Woreda (Master's thesis, Addis Ababa University). https://etd.aau.edu.et/server/api/core/bitstreams/3893fd90-215a-48b3-8aac-1cb09cbb5d3a/content

[21.] Johnson, E. L., Bowman, N. A., & Boothe, D. (2019). Stress and its impact on academic performance in adolescents: A comprehensive review. Journal of Adolescence, 76, 165–177. https://doi.org/10.1016/j.adolescence.2019.08.008.

[22.] Kotter, T., Wagner, J., Bruheim, L., & Voltmer, E. (2017). Perceived Medical School stress of undergraduate medical students predicts academic performance: An observational study. BMC Medical Education, 171, p 256. Retrieved https://www.ncbi.nlm.nih.gov/pudmed/29246231.

[23.] Lazarus, R. S., & Folkman, S. (1984). Stress, appraisal, and coping. Springer Publishing Company.

[24.] Leung, L., Lu, Y., & Jiang, Y. (2021). Stress, academic engagement, and academic performance: The mediating role of academic self-efficacy. Frontiers in Psychology, 12,674137.

[25.] Lin, X., Su, S., & McElwain, A. (2019). Academic Stressors as Predictors of Achievement Goal Orientations of American and ESL International Students. Journal of International Students, 9(4), 1134–1154. https://doi.org/10.32674/jis.v9i4.752.

[26.] Pompilus, E.S., Pompilus, A. (2021).the impact of stress on academic performance.Academia Letters Article 3326.https://doi.org/10.20935/AL3326.

[27.] Ramachandiran, M., & Dhanapal, S. (2018). Academic Stress Among University Students: A Quantitative Study of Generation Y and Z's Perception. Social Sciences & Humanities, 26(3),2115-2128.

[28.] Santiago, H. B., & Pio, J. M. (2025). Factors affecting BSEd mathematics students' learning achievement in mathematics at Ifugao State University. Pedagogy Review. https://digi-journalphils.com/wp-content/uploads/2025/07/SC-0625-001-Santiago-et-al-Formatted.pdf

[29.] Serfraz, A., Mehta, A. M., Saleem, H., Banaras, S., & Altintas, V. (2020). Socio-Economic and Ethica Implications of Stress on Teacher-Student Relationship, 23(6), 1-8.

[30.] Shetty, S., Kamath, N., & Nalini, M. (2022). Academic stress and study habits of health science university students. Journal of Health and Allied Sciences NU. https://www.thieme-connect.com/products/ejournals/pdf/10.1055/s-0041-1730746.pdf

[31.] Smith, A., & Jones, B. (2022). The impact of stress levels on academic performance: A longitudinal study. Journal of Educational Psychology, 115(3), 321-335.Johnson, C., Brown, D., & Garcia, E. (2021). Effects of stress-reduction interventions on academic performance: A meta-analysis. Educational Psychology Review, 28(2), 247-265.

[32.] Yang C, Chen A, Chen Y. College students' stress and health in the COVID-19 pandemic: the role of academic workload, separation from school, and fears of contagion. PloS ONE. (2021) 16:e0246676. 10.1371/journal.pone.0246676.

[33.] Yerkes, R. M., & Dodson, J. D. (1908). The relation of strength of stimulus to rapidity of habit formation. Journal of Comparative Neurology and Psychology, 18, 459–482. https://doi.org/10.1002/cne.920180503

[34.] Yikealo, D., Tareke, W., & Karvinen, I. (2018). The Level of Stress Among College Students: A Case in The College of Education. Eritrea Institute of Technology. Open Science Journal https://doi.org/10.23954/osj.v3i4.169.