Academic Stressors Among STEM Students in Transitional Face-to-Face Classes

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ACADEMIC STRESSORS AMONG STEM STUDENTS IN TRANSITIONAL FACE-TO-FACE CLASSES

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ABSTRACT

This study determined the socio-demographic profile, stress level of academic stressors such as parents' expectations, self-expectations, educational requirements, and peer relationships, and the relationship between the socio-demographic profile and level of stress among Grade 12 STEM students at Baybay City Senior High School during transitional face-to-face classes. The stress level is categorized into very high, high, average, low, and very low. A survey questionnaire was utilized to gather the data using a complete enumeration with 43 males and 62 females for 105 students. Frequency counts, percentages, and the chi-square test were used to examine the survey data. The result of the study revealed that the level of stress of academic stressors among the Grade 12 STEM students was average in parent expectations with a weighted mean of 3.22, highly stressed in self-expectation with a 3.50 weighted average, and academic requirements with a weighted mean of 3.52, and low highlighted in a peer relationship with a weighted mean of 2.08. Also, there was no significant relationship between the respondents' socio-demographic profile and the stress level among academic stressors. Therefore, Grade 12 STEM students at Baybay City Senior High School experienced stress during transitional face-to-face classes. A proposed action plan is designed to manage the level of pressure among the Grade 12 STEM students.

Keywords: parents' expectation, self-expectation, academic requirement, peer relationship, level of stress

INTRODUCTION

Mental health is crucial from childhood and youth to maturity, encompassing emotional, psychological, and social well-being. It influences one's thoughts, emotions, and behavior. Additionally, it provides insight into how someone manages stress, interacts with others, and makes healthy decisions (Centers for Disease Control and Prevention, 2021). Since it cannot be avoided, academic stress significantly impacts how well students perform in all aspects of their academic lives (Subramani Chellamuthu & Kadhiravan Subramanian, 2017). Returning to school from modular learning, adjusting to the home environment, and dealing with friends, classmates, and teachers can reduce student academic stress during transitional face-to-face classes.

Academic stress can endanger physical and mental health. High-level stress could contribute to problems for all individuals, including students. Academic stressors include the number of tasks, disagreements with a classmate, parental expectations for academic success, a desire to achieve intellectual self-actualization, and final writing assignments (Austria-Cruz, 2019). Dealing with stress in

regular daily existence is imperative for maintaining general well-being, as it can enhance temperament, help resistant capacity, advance life span, and permit one to be more productive. Academic stress is psychological distress that might result from projected disappointment related to academic disappointment. Examinations, understanding the lecture, competing with other fellows, inquiries in classrooms, pleasing parents and educators by achieving their educational desires, and presenting progress in subjects are some of the intellectual challenges that students might confront on a routine basis (Malik & Ashraf, 2019).

After transitioning to face-to-face classes, students return to school for learning. The school is considered the most crucial formal agency of education, which plays a significant role in molding a child's ideas, habits, and attitudes. It also serves as the first considerable environment outside the home that provides opportunities for children to learn, increase their abilities, and gain respect and admiration (Mukherjee, 2022). But when the COVID-19 pandemic influenced all walks of life, the education sector was not an exception. According to Al-Maskari et al. (2022), lockdowns, social isolation, work from home, and online classes have been commonplace since the World Health Organization (WHO) declared COVID-19 a pandemic in March 2020. Regular face-to-face sessions were supplanted by remote education, and educational institutions heavily rely on a distance learning model to keep their programs available. In the Philippines, the country immediately opted for online learning. For the benefit of the students, some teachers videotaped and posted their classes online, while others were even more creative and used Google Classrooms, WebQuest, and other platforms (Toquero, 2020).

The teachers and the students are struggling to adjust to the new normal. Due to this, plenty of students experienced stress and burnout while sailing amid the pandemic (Robosa et al., 2021). Modular learning is the most popular kind of distance education in the Philippines. Bernardo (2020) asserts that all public schools now use modular learning since studying through printed and digital modules has become the most popular distance learning technique among parents. This takes into account students who live in remote areas without access to the internet for online education.

Education has changed in recent years due to the COVID-19 pandemic. As life slowly returns to normal since the pandemic appears to have ended, emphasis must be paid to returning to in-person instruction (Stoian et al., 2022). The Philippine government and educational institutions are ready to take advantage of chances for the reopening of schools as governments around the world are slowly and steadily loosening restrictions as the number of COVID-positive cases is now decreasing. Despite the prolonged school closure, this action has given the education department hope for a safe restoration of in-person instruction (Justine Estrellado, 2021).

In order to prepare schools, students, and instructors for the restoration of in-class learning, the Department of Education scheduled a three-month transition period from August 2022 to October 2022 for public and private schools. Schools can implement a learning delivery modality from August 22, 2022, to October 31, 2022. They may implement complete face-to-face, total distance, or blended learning, as stated in DepEd guidelines. However, as directed by DepEd Order No. 34, Series of 2022, all schools providing primary education should have switched to face-to-face instruction by November 2, 2022 (Mingoy, 2022). In this matter, students adjust from using the modular learning modality to full face-to-face classes.

Baybay City Senior High School, where the study was conducted, started to reopen full face-to-face classes on the selected strands of the academic track, such as Science, Technology, Engineering, Mathematics (STEM) strand, Accountancy, Business Management (ABM) strand, General Academic (GA) strand, and Arts and Design track, on August 22, 2022, which is the opening of the school year 2022-2023. Other academic strands, like Humanities and Social Sciences and the Technical Vocational Livelihood (TVL) track, use blended learning due to the large number of students. But starting November 2, 2022, all students from different tracks and strands will be in full face-to-face classes, as mandated in DepEd Order No. 34, Series of 2022. Since the opening of full face-to-face classes, there have been some students who went to the clinic as they experienced different stress symptoms like difficulty breathing, dizziness, abdominal pain, and headache, as these symptoms are considered stress

symptoms based on the study of de la Fuente et al. (2020). Most belonged to the STEM (Science, Technology, Engineering, and Mathematics) strand. Returning to school for full-day face-to-face classes after the pandemic, knowing that the students had adjusted to using the new mode of learning, added pressure on the students as they adapted to the new environment and dealt with the various academic demands the teachers made. With these in mind, this study is vital since it determined the level of stress among the identified stressors among Grade 12 STEM students at Baybay City Senior High School in transitional face-to-face classes.

Research Questions

1.   What is the socio-demographic profile of Grade 12 STEM students of Baybay City Senior High School as to:
 1.1. Age
 1.2. Sex
 1.3. Family Economic Status?
2.   What is the level of stress of the Grade 12 STEM students of Baybay City Senior High School in terms of the following academic stressors:
 2.1. Parents Expectation
 2.2. Self- Expectation
 2.3. Academic Requirement
 2.4. Peer Relationship?
3.   Is there a relationship between the socio-demographic profile and the stress level among academic stressors of the Grade 12 STEM students of Baybay City Senior High School?
4.   What action plan was proposed based on the findings of the study?

RESEARCH METHODOLOGY

Research Design

This study utilized a descriptive-correlational study design and was quantitative in nature to determine the level of academic stressors during transitional face-to-face classes. A quantitative research design using the descriptive correlational design is specifically utilized to measure the relationships between two or more variables (Creswell, 2005).

Descriptive-correlational was used for this study as it aims to find out any relationship between the independent variable, which is the identified academic stressors of Grade 12 STEM students, the intervening variable, which is the socio-demographic profile, and the dependent variable, which is the level of stress of the Grade 12 STEM students at Baybay City Senior High School.

Research Respondents

The respondents of this study were 43 males and 62 females, a total of 105 students, constituting the total number of Grade 12 STEM students at Baybay City Senior High School. Complete enumeration, or a census, is when the data are collected for every population element.
This study was conducted at Baybay City Senior High School, Baybay City, Leyte. The respondents were Grade 12 STEM students in the school year 2022-2023. Baybay City Senior High School has 2,589 students with 100 teachers and eight non-teaching personnel. Baybay City Senior High School is a public school in Baybay City, Leyte that only caters to Grade 11 and Grade 12 senior high school students. It has been operated since June 2016, which is the implementation of K-12. Moreover, it offers different tracks such as technical vocational and livelihood, arts and design, and academics. The academic track is composed of four strands: Science, Technology, Engineering, and Mathematics (STEM), Accountancy

and Business Management (ABM), General Academic (GA), and Humanities and Social Sciences (HUMSS).

Research Instrument

A survey questionnaire was utilized in this study. The statements used in the indicators for the instrument were adopted from Academic Stress among Tertiary Level Students by Phillips et al. (2020). It is accessible online, and some questions were modified to suit the study's objective. A dry run and a pilot study were conducted on the survey questionnaire to assess the tool's validity and dependability. Thirty students from the other strand, Grade 12 HUMSS students, were the respondents. The result of the pilot testing was analyzed using Cronbach's alpha with a reliability result of .945, which indicates that the tool is valid and reliable to use.

Part I of the survey questionnaire includes items from the demographic profile of the Grade 12 STEM students, such as the student's age, sex, and family economic status. The family's financial status was based on the family's monthly household net income and categorized based on the Barangay Monitoring Information System (BMIS 2023) with a range from 1,000–5000 (lowest income), 5001 – 10,000 (low income), 10,001– 40, 000 (average income), and 40,001 and above (high income).

Part II will measure the level of academic stressors, which include expectations of parents, expectations of self, educational requirements, and peer relationships. There are five indications per variable for a total of ten items. Respondents used a five-point Likert scale where five was extremely stressed, four was highly stressed, three was moderately stressed, two was slightly stressed, and one was not stressed.

Data Analysis

The respondent's answers were described and categorized. In the first objective, the mean and standard deviation were defined by the socio-demographic profile of the Grade 12 STEM students of Baybay City Senior High School as of age. The sex was identified using frequency counts and percentages to determine the number of males and females. Then, the family's economic status was recognized and categorized utilizing the frequency count and percentage. They identified the family's financial status by knowing the number of low-income and high-income families.

In the second objective, the level of stress of the grade 12 STEM students of Baybay City Senior High School in terms of the following academic stressors, such as parents' expectations, self-expectations, academic stress, and peer relationships was used as the weighted mean of the score indicated and categorized as follows:

The data were analyzed using the Chi-square test to determine the relationship between the socio-demographic profile and the level of stress among academic stressors among the Grade 12 STEM students of Baybay City Senior High School. A stress management program was proposed based on the findings of the study.

RESULTS AND DISCUSSION

Socio-Demographic Profile

The first objective of this study was to determine the socio-demographic profile of the grade 12 STEM students at Baybay City Senior High School, including age, sex, and family economic status, using the frequency count and percentage distribution. Table 1 presents the results of the study.

Table 1. Frequency and Percentage Distribution of the Demographic Profile of Baybay City Senior High School Grade 12 STEM Students

Attributes	Frequency	Percentage (%)
Age (in years)		
15 – 17	33	31
18 – 20	72	69
Total	**105**	**100**
Sex		
Female	62	59
Male	43	41
Total	**105**	**100**
Monthly Income (in ₱)		
1,000 – 5000	22	21
5,001 – 10,0 00	38	36
10,001 – 40,000	40	38
40,001 and above	5	5
Total	**105**	**100**

Age. Based on the result, most respondents are 18-20 years old (69%), as grade 12 STEM senior high school students enrolled in Baybay City Senior High School are commonly within this age range, as reflected from the registrar's student records for the school year 2022-2023. As part of the education system in the Philippines, DepEd's K-12 has an additional two years of primary education, which shows that most grade 12 students are between 17 and 18 years of age (Philippines Basic Education, 2014). This indicates that the vast majority of respondents were adolescents. Adolescents are more vulnerable to the problems associated with academic stress as transitions occur at an individual and social level. This age of transition affects them not just in their social and personal environments but also in the institutional setting, particularly when moving up to a higher level of school (Georgiadis et al., 2017).

Sex. In terms of sex, most of the respondents were female rather than male, as there were 62 females (59%) out of 105 grade 12 STEM students. Based on the Learner Information System (LIS), generally, the grade 12 STEM students enrolled in Baybay City Senior High School in the school year 2022-2023 were female. Although there are studies repeatedly stating that math and science are professed as male, and most scientists are male (Makarova et al., 2019). However, Rafanan et al. (2020) contend that senior high school students are now generally interested in biology-related fields, regardless of gender. The alignment of the student's preferred course in college is the primary reason for enrolling in STEM, and personal aspiration is the main reason for pursuing a STEM-related career.

Family Economic Status. Regarding family monthly income, it was observed that the respondents with ₱10,001 to ₱40,000 family monthly income have the highest percentage, followed by the respondents with ₱5,001 to ₱10,000 family monthly income, then with ₱1,000 to ₱5,000 family monthly income, and the lowest percentage was on the respondents with ₱40,001 and above family monthly income. Therefore, the majority of the Grade 12 STEM students belong to the middle family.
The result shows that most respondents belong to the average economic status based on the Barangay Monitoring Information System (BMIS) 2023 category. The DOLE National Wages and Productivity Commission, Region VIII, which covers the provinces of Leyte, including Baybay City, has a minimum wage rate of ₱375 per worker as of January 31, 2023. Mostly, the parents of grade 12 STEM students are government employees, and some are business owners who can provide for their immediate needs and expenses. However, it contradicts Wu et al. (2022) statement that senior high school students faced the stress brought about by the shift from online learning to on-campus learning after returning to school during the post-COVID-19 pandemic period. One of the main factors influencing senior high school

students' stress after their return to school is the family's financial status since their source of income was affected during the pandemic.

The said demographic profile of the Grade 12 STEM students-respondents, which include age, sex, and family economic status were the intervening variables that correlated in this study with the academic stressors of Grade 12 STEM students in the transitional face-to-face classes.

Level of Academic Stress

Parents Expectation

Parents' expectations are one of the everyday stressors in adolescence. Parents' desire for their children's exemplary academic performance, progress in school, and many achievements are some of the expectations that may cause pressure on their children that can lead to stress. The results are presented in Table 2.1.

Table 2.1 Frequency and Percentage Distribution of the Level of Stress in Terms of Parents' Expectations of Grade 12 STEM Students

No.	Indicator	Weighted Mean	Level of Stress
1.	Pass all my subjects.	3.73	High
2.	Learn all my subjects.	3.58	High
3.	Support them financially after finishing my studies.	3.41	High
4.	Be in line with my skills and abilities to my chosen strand. (*STEM*)	3.36	Average
5.	Be an honor student.	3.23	Average
6.	Make them happy with my good grades.	3.21	Average
7.	Finish within the length of the study.	3.18	Average
8.	Be a good role model.	3.13	Average
9.	Show my progress report.	2.84	Average
10.	Focus on academics and less association with friends.	2.54	Low
Overall		**3.22**	**Average**

Legend:

4.20 - 5.0	Very High	1.80 – 2.59	Low
3.40 – 4.19	High	1.00 – 1.79	Very Low
2.60 – 3.39	Average		

The results show that the level of stress of the Grade 12 STEM students in the transitional face-to-face classes in terms of parents' expectations is described as "average," with an overall weighted mean of 3.22. This means that the students-respondents are moderately stressed in terms of expectations from their parents. This statistical data can be explained by the fact that of the ten indicators, three were rated "high," six were rated "average," and one was rated "low."

The indicator with the highest weighted mean states, "Pass all my subjects," a weighted mean of 3.73 described the stress level as "high." This finding indicates that most respondents were highly stressed due to their parents' expectation that they would pass all their subjects.

Fear of failure and making their parents proud are two of the common reasons why students feel pressured about passing all their academic subjects. High parental expectations are linked to adolescents' academic performance, according to Noursi and Daheri (2021). Parents may react negatively to their kids' failures if unmet expectations lead to stress and sadness. Furthermore, Dockery

et al. (2022) assert that behavioral problems at school hurt parents' expectations, shaped mainly by their impressions of their children's academic progress.

The second highest weighted mean was the indicator, "Learn all my subjects," with a weighted mean of 3.58, described as "high." This result further means that most of the respondents were highly stressed by this indicator. This is supported by the study of Guo (2022), which shows that parents pay more attention to their kids' learning quality, including their internal drive for studying, learning self-discipline, and effective learning strategies. The three main components of the parents' educational expectations for their children are quality expectations, learning expectations, and life expectations. In other words, parents today have expectations for their children's quality of life in addition to their expectations for their learning.

The third highest weighted mean was the indicator, "Support them financially after finishing my studies," with a weighted mean of 3.41, which is described as "high." One of Filipinos' many beliefs is that every family member has several obligations to uphold. To properly respect others and maintain harmony within the family, carrying out one's obligations is crucial. Traditionally, in a family, one of the typical parents' expectations was that if their children finished their studies, they could help the family financially (Scroope, 2017). Lai et al. (2022) also states that enhancing parents' knowledge of the value of education may be a new strategy to boost future human capital accumulation. Parents who have greater educational aspirations for their kids will profit more from their children's higher education. Most people know the value of education as a significant investment in human capital development. Most people see the value of education as a substantial investment in human capital development. As for the influential factors that affect educational achievement, family background or parents' economic situation has a good influence on parental aspirations for their children's education, which in turn has a beneficial impact on children's educational attainment. However, there are still instances where parents of poor socioeconomic status desire their kids to have a better life by getting a decent education, inspiring them to work hard in school and graduate from high school.

The lowest weighted mean was "Focus on academics and less association with friends," with a weighted mean of 2.54, which is described as "low." Although the highest weighted mean in this stressor states "Pass all my subjects," which somehow contradicts the lowest weighted mean that states "Focus on academics and less association with friends," these two indicators imply that the respondents were not that stressed about focusing on academics, as their parent's expectations were not particular on how focused they are in their academics, but what more made them stressed was to pass all the subjects, as this is the high expectation that their parents always expect from them. The study by Mahmud (2021) reveals that parents' investments and their high expectations for their children's educational development increase students' workloads outside of school hours and reduce their time for important daily activities like physical activity and social interaction, as parents are more focused and particular on their children's passing grade.

The overall results show that the level of stress of the Grade 12 STEM students in terms of their parents' expectations was found to be "average" which indicates that the parents' expectations moderately stressed to the students. According to the study by Guo (2022), if parents have high expectations for their children's education because they think it would benefit them, this encourages their development. Conversely, if they believe that educational expectations are likely to cause stress and anxiety, they lower them, which naturally causes their children to fall under their expectations. This is supported by the study of Subramani and Venkatachalam (2019), which found that parental expectations were one of the top five sources of academic stress. Understanding the source of academic stress from different spheres could enable counselors as well as educational institutions to create awareness and tailor-made intervention programs for students.

Self- Expectation

Self-expectation provides clarity, direction, and accountability. Firm hopes or convictions that something will occur or you will obtain what you desire. But sometimes, students' academic expectations are too high to attain, which may result in experiencing pressure and stress. Stress has many harmful effects on people's health, but it varies depending on people's responses to stress (Habib et al., 2017). The consequences of stress can differ from person to person, despite the fact that numerous studies have previously provided strong scientific evidence that sustained and rising stress levels may result in physical and mental health issues (Quing & Baudin, 2021). Some people react to stress unhelpfully, while others tend to be more adaptable to it because they have adapted to it due to accepting reality. Table 2.2 presents the result.

Table 2.2 Frequency and Percentage Distribution of the Level of Stress in terms of Expectations of Grade 12 STEM Students

No.	Indicator	Weighted Mean	Level of Stress
1.	Do well on every examination or test.	4.10	High
2.	Pass all my subjects.	3.79	High
3.	Express ideas fluently.	3.69	High
4.	Show confidence in all my subjects.	3.64	High
5.	Perform well in class.	3.60	High
6.	Finish within the length of the study.	3.53	High
7.	Concentrate and focus during classes.	3.32	Average
8.	Be interested in all subjects.	3.19	Average
9.	Demonstrate interest in all subjects.	3.15	Average
10.	Attend to my classes every day.	2.95	Average
Overall		**3.50**	**High**

Legend:

4.20 - 5.0	Very High	1.80 – 2.59	Low
3.40 – 4.19	High	1.00 – 1.79	Very Low
2.60 – 3.39	Average		

Table 2.2 shows that the respondents show a "high" overall level of stress in terms of self-expectation with a weighted mean of 3.50, indicating that Grade 12 STEM students were highly stressed during transitional face-to-face classes. This result is attributed to the fact that, among the ten indicators, six were rated "high," and the remaining four were rated "average."

As shown in the table, the three indicators that accumulated the highest weighted mean were those that stated, "Do well every examination or test," with a weighted mean of 4.10. Then followed the statement "Pass all my subjects" with a weighted mean of 3.79. The students-respondents experienced high stress in these two indicators, which supported the study of Matutino & Singson (2020); in particular, an honor student enrolled in a Catholic school where students with academic honors are given scholarships; consequently, it became a motivating factor for the students to perform well in their academics. Students generally consider academic expectations to be a great source of academic stress. Furthermore, this could be validated by a study conducted by Subramani and Venkatachalam (2019), where fear of failure in exams was one of the top five sources of academic stress, with a 96% rate. Understanding the source of academic stress from different spheres could enable counselors as well as educational institutions to create awareness and tailor-made intervention programs for students.

The third indicator states "Express ideas fluently," with a weighted mean of 3.69, also described as "high". The respondents claimed that they experienced a high level of stress when expressing their ideas. The common reason why most of the students at Baybay City Senior High School stress about

speaking their ideas fluently is because the English language is the medium of instruction used by the teachers and students in school. Although expressing ideas is one of the students' outlets as they release their negative emotions or feelings, some students claim that they are not confident or fluent enough to express their ideas using English in class. This finding is supported by Holandyah et al. (2022), who claim that one of the students' difficulties was overcoming language barriers, enjoying speaking their tongue, managing psychological issues, and looking for engaging conversational topics. Students were challenged by various issues that prevented them from having good speaking skills in English.

In Baybay City Senior High School, two of the significant requirements to be qualified to enroll in the Science, Technology, Engineering, and Mathematics (STEM) strand are passing the entrance examination and the percentage of student grades, mainly not less than 85% in English, Science, and Mathematics subjects. As part of the STEM strand with these requirements, most students were very particular in their academic performance. These factors were reflected in the result. The indicators, which state "showing confidence in all my subjects" with a weighted mean of 3.64, "perform well in class" with a weighted mean of 3.60, and "finish within the length of study" with a weighted mean of 3.53, is described as having a "high" stress level. These results imply that most STEM students are particular in their academic performance, are competitive, and want to be known as confident and well-performed students. Getting high grades is their goal, and they are eager to perform well in school, which makes them feel stressed and pressured. Also, they want to finish their studies within the school year as honor students. This result is supported by Matutino and Singson (2020), who generally justify that students consider academic self-expectations as a great source of academic stress, especially as honor students, where students with academic honors are given scholarships. Therefore, it became the driving force behind each student's academic success. Moreover, Esperanza and Bulusan (2020) further assert that because scholars are required to uphold their high academic standing in order to maintain their scholarship, they are more exposed to personal, social, and educational pressures.

The indicator with the lowest weighted mean was the statement "Attend to my classes every day," with a weighted mean of 2.95, which described that the respondents experienced only a low level of stress in terms of attending their classes every day. This result implies that returning to face-to-face classes after almost two years of modular learning excites most students to return to school. This is supported by the study of Girl & Cardinas (2022), which found that students' academic excitement on their return to complete face-to-face classes was high, while their level of academic challenges was moderate. Students are highly excited to return to school with sensible challenges.

Academic Requirement

School requirements, prerequisites, work, and demands are students' workloads that must be met to get a passing grade. Heavy academic workloads and spending too much time on schoolwork can increase academic stress. The impact of COVID-19 on the education sector can be said to be cruel because, during the pandemic, the education system has changed a lot, as the school was previously conducted offline, then became online, and was held offline again. Students have to adapt several times to the existing system. The implementation of face-to-face schools again needs attention to various aspects, especially regarding students' mental readiness to handle the different school workloads (Nurfajrin et al., 2021). This conforms with the study of Liverpool et al. (2023), which found that even if students may be permitted to resume in-person instruction, it's probable that they are still dealing with the pandemic's effects on their mental health and welfare. Table 2.3 displays the result.

Table 2.3 Frequency and Percentage Distribution of the Level of Stress in terms of Academic Requirement of Grade 12 STEM Students

No.	Indicator	Weighted Mean	Level of Stress
1.	Too much school work.	4.02	High
2.	Examinations are tough.	3.95	High
3.	Passing all the subjects.	3.72	High
4.	Too many assignments and projects.	3.66	High
5.	Teachers give unannounced quizzes.	3.63	High
6.	Examination time needs to be longer to complete the answers.	3.57	High
7.	All subjects are essential.	3.55	High
8.	Study materials are incomplete and confusing,	3.32	Average
9.	Assignments are completed on time.	3.12	Average
10.	Perfect attendance.	2.61	Average
	Overall	**3.52**	**High**

Legend:

4.20 - 5.0	*Very High*	1.80 – 2.59	*Low*
3.40 – 4.19	*High*	1.00 – 1.79	*Very Low*
2.60 - 3.39	*Average*		

The results show that the level of stress of the Grade 12 STEM students in the transitional face-to-face classes in terms of academic requirements is described as "high," with an overall weighted mean of 3.52. This statistical data can be explained by the fact that of the ten indicators, seven were rated "high" and three were rated "average."

The indicator that got the highest weighted mean is "too much school work," with a weighted mean of 4.02, which is "high." The result is due to the fact that Baybay City Senior High School Grade 12 STEM strand has eight subjects every semester, and every subject has a lesson that requires written outputs and performance tasks. All these tasks and outputs must be completed and submitted over a period, which may cause a lot of pressure and stress considering that all these tasks and outputs are the basis of their academic performance and grades. This result could be justified by the study of Maajida et al. (2018), in which it was mentioned that science students experienced higher stress levels than those studying in other strands. When internal and external demands, such as excessive workloads, are combined, the individual's ability to handle the situation is exceeded. Depression, worry, and stress can all be detrimental to many young adults' ability to succeed in school and college. Students who do not cope well with stress have a very drastic effect on their studies and behavior. These may result in student burnout, as asserted by Veyis et al. (2019), who claim that school burnout is a significant risk factor for students who have dealt with academic stress and that it is essential to take into account its mediating function in efforts to lessen academic stress and boost motivation.

The "Examinations are tough" indicator with a weighted mean of 3.95 is also "high." The fact that the students in Baybay City Senior High School came from modular learning due to the pandemic, answered only the questions in the module, and did not experience having any major examinations during the pandemic made them feel that the examination was strict. During transitional full face-to-face classes, some students frequently encounter anxiety and uneasiness during tests or examinations. This outcome is connected to the findings of Sarı et al. (2018), who found that many countries faced many exams in many fields in the education and training process from school. Each step left behind leads to new exams and natural stresses. Also, the educational system is constantly changing from modular learning to face-to-face classes, which multiplies the stress on the student. The third indicator with the

highest mean is "passing all the subjects" with a weighted mean of 3.72, which is also "high." Passing all the subjects is an academic requirement that serves as the basis for students to be successful in their studies. Most of the STEM students aim to pass all eight subjects in two semesters, which makes them feel stressed as eight subjects need to be focused on. Also, aiming for a higher grade in each subject will add more pressure. Thus, Tang et al. (2020) concludes that students in higher grade levels and important schools will likely experience more significant academic pressure and achievement expectations, such as the need to pass all subjects. Long-term homeschooling can impact student's academic achievement and is particularly stressful for these students.

The lowest weighted mean of all indicators in terms of the academic requirement was the indicator "Perfect attendance" with a weighted mean of 2.61, which is described as "average." STEM students are somehow competitive and very particular about their academic grades, so attending classes and having perfect attendance is a must. Absences made them stressed, as not attending classes negatively impacted their grades and academic performance. Although Gourault (2022) states that student attendance is one of the significant challenges parents and teachers face in the era of social media, in which many children and teens are going to school, competition among classmates is an excellent motivation for a student to attend class. Also, students are motivated by peer and institutional recognition, such as receiving certificates and awards for being honor students. Furthermore, Ervin (2022) highlights the significance of attendance because regular attendance increases students' chances of academic success. It will aid students in improving their academics, forming healthy coping mechanisms, abstaining from risky behavior, and increasing their chances of completing their education.

Academic demands such as too many assignments and projects, unannounced quizzes, examinations, and the importance of each subject are also described as "high" levels of stress. The majority of stressors are academic-related; hence, targeted, specific treatments are required to reduce students' stress levels significantly. Teaching techniques and environments should be adapted to the needs of the students. Utilizing student welfare services effectively, creating more "student-friendly" environments, and organizing regular, inclusive extracurricular activities can all be effective stress relievers. The majority of students supported including stress management education in the curriculum; hence, steps should be taken to implement it (Hena et al., 2020).

Peer Relationship
Positive peer interactions have a significant impact on other aspects of teenage development. Positive peer relationships can increase adolescents' academic achievement. However, on the negative side, peer influence can lead to discipline problems and delinquent behaviors inside and outside school. Table 2.4 presents the results of peer relationships.

Table 2.4 Frequency and Percentage Distribution of the Level of Stress in terms of Peer Relationship of Grade 12 STEM Students

No.	Indicator	Weighted Mean	Level of Stress
1.	Fear of rejection from classmates/ friends.	2.42	Low
2.	Pressure for class attendance.	2.33	Low
3.	Conflict with friends/ classmates.	2.26	Low
4.	Acceptance and value of classmates/ friends in a particular group.	2.26	Low
5.	Lack of mutual help among classmates.	2.21	Low
6.	Feelings of inferiority.	2.12	Low
7.	Difficulty to get along with them.	2.07	Low
8.	Competition among classmates for grades.	1.94	Low

9.	Adjusting with the opposite gender.	1.75	Very Low
10.	No close friends among the classmates.	1.44	Very Low
Overall		**2.08**	**Low**

Legend:

4.20 - 5.0	*Very High*	*1.80 − 2.59*	*Low*
3.40 − 4.19	*High*	*1.00 − 1.79*	*Very Low*
2.60 − 3.39	*Average*		

The result presented in the fourth stressor about peer relationships was "low," with a weighted mean of 2.08. The three (3) highest weighted means were. First, the indicator states "fear of rejection from classmates or friends," with a weighted mean of 2.42. Experiencing fear of rejection from classmates or friends is common for senior high school students in their adolescence, where they adjust and transition to their individual and social levels (Georgiadis et al., 2017). The fear of rejection, losing friends, and being teased makes many adolescents susceptible to negative peer pressure (Agnihotri, A. K. 2018).

The second was the indicator, "pressure for class attendance," with a weighted mean of 2.33. Peer influence on senior high school students in terms of attending classes is pervasive; it can add pressure on the students. However, it depends on what kind of influence they have from their peers. According to Bankole Adeyemi (2019), peer groups are significant in students' lives. They contribute significantly to the social climate at school and establish and uphold a culture distinct from that of the home. Peer groups are here to stay; as a result, parents, teachers, and administrators should watch for the different types of peers their children hang out with at home and school. They should make every effort to ensure that their kids develop relationships with peers who will motivate them to attend class and positively impact their academic success.

The third indicator was "conflict with friends or classmates," with a 2.26 weighted mean. Conflicts with friends or classmates cannot be avoided in adolescents, which affects their academic performance and may lead to stress. The result implies that friends might potentially be a stressful factor. Especially after the pandemic, since students came from modular learning, most of the students concerned about returning to full face-to-face classes are about not having enough friends, peer pressure, interpersonal disputes, being in a different class than friends, being unable to keep up with friends in one or more areas, and being unable to keep up with friends in general. These are a few of the highly prevalent reasons for stress. Many students are susceptible to peer pressure because they are worried about losing their friends (Agnihotri, A. K. 2018). The present research evidence that academic procrastination induces academic stress, yet resistance to peer influence guards against such negative consequences. It is recommended that interventions be designed to boost resistance to peer influence among young adults to fight against stress induced by academic procrastination (Malik & Ashraf, 2019).

The most minor indicator of the level of stress in terms of peer relationships is the statement that there are "no close friends among the classmates," with a weighted mean of 1.44, which is described as "very low." Senior high school students are not particular about the closeness that they have with their friends and classmates; what is more critical for them is that they have a group of friends that they can talk to or share their thoughts with inside the classroom and as long as they can feel that they belong and are not being rejected. Although Agnihotri, A. K. (2018) emphasizes that friends can also be a source of stress. Stress among students frequently comes from concerns about not having enough friends, not being in the same class as friends, being unable to keep up with peers in one or more areas, interpersonal problems, and peer pressure. Many students are vulnerable to lousy peer pressure because they fear rejection, losing friends, and being teased.

The overall finding indicates that, with a weighted mean of 2.08, the majority of respondents had low stress in terms of peer relationships. This result implies that students do not consider peer relationships a high stressor. Being with their friends, close friends, or classmates when in school will help them

lessen their stress or pressure when doing school work. Modular learning or homeschooling during the pandemic affected the student's interaction with their friends, making them more focused on spending time with their families. Therefore, students are excited to spend time with their classmates and friends when they return to full face-to-face classes. Thus, the Malik & Ashraf (2019) study points out that peer influence, resistance, and academic stress have a substantial negative association. As resistance to peer influence increases, academic stress decreases. Moreover, Kurniasih et al.'s (2020) study found six factors identified as sources of students' academic stress. The six factors were academic demands, parent-child relationships, childhood traumatic experiences, peer pressure, financial matters, and self-expectancy.

Significant Relationship Between the Socio-Demographic Profile and

Level of Stress among Academic Stressors

The third objective of this study is to determine the relationship between the socio-demographic profile of the grade 12 STEM students at Baybay City Senior High School, including age, sex, and family economic status, and the level of academic stress, such as parent's expectations, self-expectations, educational requirements, and peer relationships using a chi-square test. The significance or non-significance of the relationship between the sociodemographic profile and the level of stress among the academic stressors is presented in Table 3.

Table 3. Relationship between socio-demographic profile and level of stress among academic stressors of the Grade 12 STEM students of Baybay City Senior High School

Socio-demographic Profile	Academic Stressor	Chi-Square Value	df	Contingency Coefficient	p-value	Significance
Age	Parents Expectation	2.186a	3	.146	.535	Not Significant
	Self- Expectation	3.783a	3	.190	.286	Not Significant
	Academic Requirement	3.821a	3	.190	.281	Not Significant
	Peer Relationship	4.188a	3	.198	.242	Not Significant
Sex	Parents Expectation	3.620a	3	.185	.305	Not Significant
	Self- Expectation	1.646a	3	.127	.649	Not Significant
	Academic Requirement	5.874	3	.230	.127	Not Significant
	Peer Relationship	.772a	3	.086	.856	Not Significant
Family Economic Status	Parents Expectation	3.485a	6	.187	.746	Not Significant
	Self- Expectation	3.197a	6	.180	.784	Not Significant
	Academic Requirement	4.424a	6	.201	.620	Not Significant

Peer Relationship	.367a	4	.061	.985	Not Significant

The result shows that based on age and the level of stress in parents' expectations, self-expectations, academic requirements, and peer relationships, the $rho\ value$ is greater than the alpha level of .05. The outcome demonstrates that there is insufficient data to conclude that the variables are related. Regardless of age, whether the student is 15–17 years old or 18–20 years old, the student's stress level in the four identified stressors does not depend on them or is insignificant. Contrary to the study of Ramachandran, which pointed out that age has a relationship to the stress level since Generations Y and Z, 18–25 years old, fall under the moderate level of stress category with a percentage of 78.2%. It was also definitely shown that their studies, peer pressure, family issues, financial issues, and other issues were among those recognized as sources of stress.

Likewise, the result of the sex of the respondents and the level of stress in four academic stressors, such as parents' expectations, self-expectations, educational requirements, and peer relationships, was found to be not significant since the $ro\ value$ is greater than the alpha level of .05. It could be expounded that the level of stress in four identified academic stressors during transitional full face-to-face classes has no association to its sex. The non-significant result on the socio-demographic and level of stress, particularly on sex, was supported by the study of Wu et al. (2022), which revealed that there was no statistically significant difference in the stress score of the students of different genders. This may be related to the equalization of education resources and psychological services in recent years, which has reduced, to a certain extent the disparities in education and socio-economic status about gender. The findings, however, contradict Singh et al.'s 2022 study, which found a substantial difference between secondary school children in terms of academic stress and emotional adjustment. Compared to male students, female students are less emotionally adjusted and tend to experience more academic stress. This is supported by the study of Yousif et al. (2022), which shows a high prevalence of academic stress. The participant's gender and living circumstances were substantially correlated with their level of academic stress. The individuals' inability to recall all they had studied, anxiety about the exams, and lack of focus during study sessions were the leading causes of academic stress. Lastly, the family's economic status result shows that the rho value is still higher than the alpha level of .05, and it was found to be insignificant. Therefore, it could be explained that students, whether they have a family monthly income of ₱1,000- ₱5,000, or ₱5001- ₱10,000, or even ₱10,001- ₱40,000 or ₱40,001 and above, there is no such connection to the level of stress in academic stressor during transitional full face-to-face classes. Since the calculated Chi-square value is higher than the ρ-value, the four stressors' socio-demographic composition has no significant effect on the amount of stress. The Sundarasen et al. (2020) study confirms that age, gender, academic specialization, and housing situation were strongly connected with anxiety and stress levels during the COVID-19 pandemic and lockdowns. Financial limitations, distance learning, and performance-related uncertainty were the primary sources of stress. This claim is supported by the study of Yousif et al. (2022), which presents a high prevalence of academic stress. The level of academic stress was significantly associated with participants' gender and living conditions.

Although the result shows a non-significant relationship between the socio-demographic profile of the respondents and their level of stress, the socio-demographic profile, including age, sex, and family economic status, helped the study realize that during the transitional period of face-to-face classes, Grade-12 STEM students experienced high, moderate, and low stress among academic stressors regardless of their age, sex, and family economic status. Therefore, the students-respondent socio-demographic profile has no relationship to the level of stress among academic stressors.

CONCLUSION

Grade 12 STEM students' level of stress among the academic stressors shows that students experienced academic stress during transitional face-to-face classes; hence, students show moderate and high stress among the stressors. Indicators of a particular stressor need to be addressed and given full attention through planning and proposing some activities, like stress awareness and stress management. Since the students come from the science, technology, engineering, and mathematics (STEM) strand, they have to pass an entrance examination and meet the qualifications to be enrolled in this strand, so most of the STEM students are competitive and particular in their academic performance. Parents' expectations are an additional pressure and stressor for the students. However, some parents are unaware of or have no negative intention of expecting something from their children.

Based on the study results, the following are recommended: conduct a symposium or seminars for parents, teachers, and students focusing on stress awareness and management among academic stressors. Implement training workshops and seminars for teachers on strategizing when giving school requirements to students. Assess students' level of pressure and stress towards their self-expectation about their academic performance with the school guidance coordinator and clinic in charge and with the help of Baybay City Division school nurses. Coordinate with the Department of Education-Baybay City Division Health Team and collaborate with the local government unit, particularly the Baybay City Health Office, on the best materials to conduct stress awareness and management activities. Adopt the action plan being proposed about stress awareness and management activities. Conduct further study regarding academic stressors among senior high school students.

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