

Examining Coping Mechanisms for Managing Academic Stress and Fear of Failure to Enhance Students' Mathematics Performance

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Abstract. This study examined the coping mechanisms used by Grade 10 students in managing stress and fear of failure, with the goal of enhancing their academic performance in Mathematics at Don Vicente Rama Memorial National High School, Division of Cebu City, during the school year 2023–2024. The study employed a descriptive-correlational research design and involved 226 randomly selected students. Data were analyzed using frequency count, percentage, weighted mean, and Pearson's *r*. Findings revealed that most respondents were female (134 out of 226) and the majority were 16 years old (113 out of 226). In terms of family background, most parents were high school graduates, and the majority of households had a monthly income of ₱10,000.00 and below. Results further showed that students experienced a high level of fear of failure, with an overall weighted mean of 3.60, while their coping strategies were moderately utilized. In terms of academic performance, most respondents fell within the proficient level, earning grades between 85 and 89. Statistical analysis indicated no significant relationship between academic stress, coping strategies, and students' performance in Mathematics. Similarly, no significant relationship was found between fear of failure, coping strategies, and academic performance. Based on these results, the study strongly recommends the adoption of the proposed action plan to further improve students' performance in Mathematics.

Key Words and Phrases: Teaching mathematics, coping mechanisms, managing academic stress

1. Introduction

Mathematics holds a central place in the school curriculum because of its vital role in shaping students' analytical and problem-solving abilities. It builds a strong foundation in logical reasoning and critical thinking, skills that are necessary for success across different areas of study and professions [1]. Beyond the classroom, mathematics serves as a fundamental tool in fields such as science, engineering, finance, and technology. Through its systematic approach, it trains learners to think logically, evaluate situations, and develop solutions to complex problems. More importantly, mathematics provides a framework for understanding the world around us, offering methods to measure, describe, and interpret concepts like distance, time, space, and quantity.

Mathematics is not always simply a subject but a language that helps us talk thoughts and ideas efficiently [2]. It offers a not unusual language for scientists, engineers, and different professionals to percentage and collaborate on complicated initiatives. It teaches us problem-solving competencies, logical reasoning, and crucial thinking, which might be important in our non-public and expert lives. It allows us to develop analytical abilities that permit us to address complicated troubles, make

sound decisions, and come up with innovative solutions. Mathematics is also essential in everyday life, whether in computing taxes, managing personal finances, or understanding the effects of interest rates on loans. It equips individuals with the ability to make sound decisions that influence their daily activities. Studying mathematics nurtures creativity and curiosity as it encourages learners to think beyond conventional solutions and develop new ideas [3]. It promotes a love for knowledge and supports lifelong learning. Moreover, mathematics provides the groundwork for other disciplines such as physics and chemistry by helping students grasp the core principles and concepts needed for advanced studies and research. In scientific investigations, mathematics is widely applied to model, analyze, and predict complex systems and phenomena, enabling researchers to test hypotheses and expand knowledge to address real-world problems. It also highlights the beauty of patterns and relationships in natural systems, which may not be visible at first glance. In essence, mathematics serves as a powerful tool to comprehend and solve challenging problems.

Despite its importance, many students find mathematics difficult, which often results in stress and anxiety, particularly for those struggling with the subject [4]. Mathematics requires consistent practice, precision, and accuracy, where even small mistakes can lead to incorrect answers. This pressure fosters a fear of failure that can overwhelm learners, lowering their confidence and adding to their stress. Poor performance in mathematics can negatively affect students' overall academic achievement and future career opportunities. The demand to excel, coupled with expectations from family, peers, and teachers, intensifies this pressure and contributes to heightened anxiety.

To cope with stress and fear of failure, students adopt different strategies to manage their emotions. Some engage in physical activities like sports to release tension, while others practice relaxation techniques such as meditation. There are also students who seek support from teachers, peers, or family members. However, when coping mechanisms are insufficient, stress can interfere with learning, particularly in challenging subjects like mathematics. The fear of failure often leads to a lack of motivation and confidence, which may further hinder performance. At Don Vicente Rama Memorial National High School, these academic stressors and fears manifest in various ways, often reflected in students' performance. For instance, consistently low grades may indicate difficulties in managing stress and fear related to mathematics. Students who avoid math-related tasks, display negative attitudes toward the subject, or express frustration are likely experiencing high levels of anxiety. Such struggles may cause them to feel overwhelmed, discouraged, and, in some cases, disengage from mathematics altogether.

To address these concerns, it is important to assist students experiencing stress, fear of failure, and poor performance in math. One way to perform this is by providing students with academic support and guidance.

Teachers can offer extra help, such as tutoring to help students catch up with the subject matter. Teachers play an important role in helping students improve their performance in mathematics by providing constructive feedback and guidance. Such feedback should be given in a supportive and encouraging manner, highlighting students' strengths while also identifying areas that need improvement. In addition, parents are equally vital in addressing these challenges. By offering emotional support, encouragement, and teaching their children relaxation strategies, they can help reduce stress and create a nurturing home environment.

Despite these efforts, academic stress and fear of failure remain factors that can significantly affect students' performance in mathematics. Understanding the underlying causes and signs of these challenges allows both teachers and parents to offer more effective support. Through the creation of a positive learning

atmosphere, coupled with consistent academic assistance and encouragement, students can develop resilience, manage their anxiety, and perform better in mathematics. Ultimately, such interventions not only enhance students' academic success but also benefit all stakeholders—students, teachers, and parents—by fostering a healthy learning environment and equipping learners with the skills and confidence needed to succeed in mathematics and beyond.

2. Statement of the Problem

This research examined the coping mechanisms in managing stress and fear of failure to enhance the academic performance of the Grade 10 students in Mathematics at Don Vicente Rama Memorial National High School in the Division of Cebu City for school year 2023 - 2024 as basis for proposed action plan.

Specifically, this study sought to answer the following sub-problems:

1. What is the profile of respondents in terms of:
 - 1.1 age and gender,
 - 1.2 parents' highest educational attainment, and
 - 1.3 combined family monthly income?
2. What is the level of academic stress experienced by the respondents in terms of:
 - 2.1 academic expectations,
 - 2.2 faculty work and examinations,
 - 2.3 academic self-perceptions?
3. To what extent do the respondents experience fear of failure in their performance?
4. To what extent do the respondents utilize the coping strategies to overcome the stress and fear experienced by the respondents?
5. What is the level of academic performance of the respondents in Mathematics?
6. Is there a significant relationship between the:
 - 6.1 academic stress and coping strategies utilized by the respondents,
 - 6.2 fear of failure and coping strategies utilized by the respondents?
7. Is there a significant relationship between the:
 - 7.1 academic stress and performance of the respondents in Mathematics,
 - 7.2 fear of failure and academic performance of the respondents in Mathematics, and
 - 7.3 coping strategies and academic performance of the respondents in Mathematics?
8. Based on the findings of the study, what action plan may be crafted?

3. Statement of the null hypotheses

Based on the objectives of the study, the following null hypotheses will be tested at 0.05 level of significance:

Ho1: There is no significant relationship between the academic stress and coping strategies utilized by the respondents.

Ho2: There is no significant relationship between the fear of failure and coping strategies utilized by the respondents.

Ho3: There is no significant relationship between the academic stress and academic performance of the respondents in Mathematics.

Ho4: There is no significant relationship between the fear of failure and academic performance of the respondents in Mathematics.

Ho5: There is no significant relationship between the coping strategies and academic performance of the respondents in Mathematics.

4. Literature review

This study is anchored on several theories, laws, and policies that provide a framework for understanding academic stress, fear of failure, and coping strategies among students. Primarily, it draws from the Transactional Theory of Stress, Appraisal, and Coping developed by Richard Lazarus and Susan Folkman [5]. This theory explains that stress arises from the interaction between an individual and their environment. It emphasizes that a person's response to stress is not only shaped by external events but also by how these events are appraised and the individual's ability to cope. Coping, according to Lazarus and Folkman, refers to the "cognitive and behavioral efforts" used to manage stress, which may take two forms: problem-focused coping, where a person directly addresses the cause of stress, and emotion-focused coping, where the individual regulates emotional reactions instead of tackling the source itself.

Another theoretical foundation is the Need Achievement Theory by David McClelland [6] and John William Atkinson [7]. This theory seeks to explain motivation by focusing on two opposing tendencies: the drive to achieve success and the motive to avoid failure. It is often referred to as an approach-avoidance model. When the desire for success outweighs the fear of failure, individuals are more likely to engage in challenging tasks. Conversely, if fear of failure is stronger, individuals may avoid tasks to protect themselves from possible disappointment. High achievers tend to select difficult tasks that bring greater rewards, while low achievers often prefer easier tasks where success is almost guaranteed. This theory provides insight into why students respond differently to academic demands in mathematics.

In addition to theoretical anchors, the study is also guided by educational policies in the Philippines. One of these is Republic Act No. 10533, or the Enhanced Basic Education Act of 2013, which restructured the country's basic education system by implementing the K-12 program. Under this law, education was extended to include one year of kindergarten, six years of elementary, and six years of secondary schooling—composed of four years in junior high and two years in senior high. It emphasizes a learner-centered approach and seeks to provide all students with quality, globally competitive education that equips them with essential competencies for higher learning, employment, and life-long growth. Mathematics, as one of the core areas, is strengthened under this curriculum to help students develop critical thinking, logical reasoning, and problem-solving skills necessary for future careers and societal participation.

Another policy basis of this research is DepEd Memorandum No. 074, s. 2021, entitled "Inclusion and Promotion of Mental Health in All DepEd Events and Programs." This memorandum was issued in response to the unprecedented challenges posed by the COVID-19 pandemic, which caused not only interruptions in physical classes but also mental and psychological distress among learners and educators. It highlights the importance of providing mental health and psychosocial support services (MHPSS), including access to mental health helplines and wellness checks, to safeguard the well-being of the education community. This aligns with the study's concern on stress and fear of failure in mathematics, as it underscores the importance of institutional support

in addressing learners' psychological struggles.

Furthermore, the literature provides extensive insights into stress and its implications. Stress has been described as a physical or emotional tension arising from any event or thought that triggers frustration, anger, or anxiety [9][10][11]. Scholars distinguish between eustress—a positive form that motivates individuals—and distress, which negatively affects performance and well-being [12][13][14]. Within the academic context, stress is commonly experienced due to high demands, expectations, and pressure to excel, often leading to adverse psychological and physical outcomes such as anxiety, depression, and reduced performance [15][16][17].

Fear of failure, also referred to as atychiphobia, is another central construct in this study. Cherry [18] explained it as an irrational and persistent fear that can be rooted in perfectionism, upbringing, or past experiences. While failure can be a valuable learning experience [19], excessive fear can hinder students from trying, reduce motivation, and ultimately impact academic achievement. This is especially evident in mathematics, where accuracy is critical, and mistakes may reinforce students' anxiety.

Finally, existing studies on mathematics anxiety highlight its prevalence and consequences. Math anxiety is characterized by feelings of panic, helplessness, and tension when faced with mathematical tasks [21][22]. Research consistently shows a negative relationship between math anxiety and math performance, with cultural, gender, and academic factors influencing its intensity [25][26][27][28][29]. Coping strategies identified by students include active note-taking, peer support, physical activities, and relaxation techniques, although their effectiveness varies depending on individual resilience and motivation [30].

Taken together, these theories, laws, and related studies provide the foundation of this research. The Transactional Theory of Stress and Coping and Need Achievement Theory frame the psychological dimensions of stress, fear of failure, and motivation. Meanwhile, Republic Act No. 10533 and DepEd Memorandum No. 074, s. 2021 emphasize the policy-level commitment to quality education and mental health support. This study builds on these anchors to examine how academic stress, fear of failure, and coping strategies influence the mathematics performance of Grade 10 students, and to propose interventions that promote resilience, motivation, and academic success.

5. Research methodology

This study employed a descriptive-correlational research design to examine the relationship between academic stress, fear of failure, coping strategies, and academic performance in Mathematics among Grade 10 students of Don Vicente Rama Memorial National High School. As noted by Creswell [31], this design is appropriate for describing and analyzing relationships between variables without manipulating them. Data were collected through surveys and questionnaires administered using simple random sampling, while descriptive statistics and correlational analysis were applied to assess the respondents' profiles, levels of academic stress, fear of failure, coping strategies, and their corresponding academic performance in Mathematics.

The data collection process involved securing permission from the school through a transmittal letter, distributing and retrieving questionnaires, and obtaining the students' Mathematics grades from their teachers. The data were analyzed using statistical tools to identify patterns and relationships.

The study was conducted at Don Vicente Rama Memorial National High School in Basak, Cebu City, and the large public school with over 6,000 students. It offers both Junior and Senior High School education and is managed by Principal Evelyn R. Pielago. The chosen respondents were 226 Grade 10 students from the first shift, selected through cluster sampling. Grade 10 was chosen because it is a crucial year for students as they prepare for the National Career Assessment Examination (NCAE), face increased academic pressure, and transition to senior high school, making them ideal participants for studying

stress and coping.

The sample was drawn from ten sections, with each section contributing 22 or 23 students, as detailed in the provided table. The total population of 519 Grade 10 students was used to determine the sample size using Slovin's formula with a 95% confidence level and a 5% margin of error.

An adopted survey questionnaire was used to collect data and was divided into four parts. Part I collected the students' profile, including parents' educational background and family income. Part II assessed academic stress using items related to expectations, faculty work, exams, and self-perception, rated on a 5-point Likert scale. Part III measured the fear of failure, also rated on the same scale. Part IV focused on the coping strategies students used to deal with stress and fear, based on existing literature. Additionally, students' academic performance was measured using their 3rd Quarter Mathematics grades.

The data collection process had three stages. In the preliminary stage, the researcher sought approval from the school and division office. During the data gathering stage, the researchers coordinated with teachers, explained the study's purpose to students, administered the survey, and collected the completed forms. In the post-data gathering stage, the responses were analyzed using descriptive statistics (such as mean, standard deviation, and frequency) and correlation analysis to determine the relationships between variables. The results helped draw conclusions about students' stress, fear of failure, coping strategies, and academic performance, as well as how these factors are interrelated.

Based on the findings, recommendations will be proposed, including strategies for stress and fear management, improving coping mechanisms, and enhancing academic performance. These recommendations will be used to develop an action plan, which may include stress management training and academic support programs aimed at helping students reduce stress and fear, strengthen coping skills, and improve their Mathematics performance.

The statistical tools used in this study included frequency count to analyze responses, Pearson's r to determine the relationships between variables, percentage to observe trends, and weighted mean to assess levels of stress, fear, and coping strategies. Students self-rated their experiences on a 5-point scale, with descriptive ranges from "strongly disagree" to "strongly agree." For academic stress, the scores ranged from "very low stress" to "very high stress"; for fear of failure, from "very low fear" to "very high fear"; and for coping strategies, from "very low utilization" to "very high utilization." Academic performance was evaluated based on the Department of Education's standard grading scale, ranging from "Beginning" (below 75) to "Advanced" (90-100).

6. Results

This section presents the analysis and interpretation of the data gathered in the study, which aimed to determine the respondents' profile in terms of age, gender, parents' highest educational attainment, and combined family monthly income. It also assesses the level of academic stress, fear of failure, coping strategies, and students' academic performance in Mathematics.

The results, derived from the respondents' answers to the survey questionnaire, are organized, presented, and discussed as follows:

6.1. Profile of the respondents

This part presents the profile of the respondents in terms of their age, gender. At the time, it also includes the parents' highest educational attainment and the combined family monthly income to understand the diverse backgrounds of the respondents.

6.1.1. Age and gender

Age and gender are considered important variables that need to be determine in this study which could help in explaining the results of the study. Data gathered are presented in Table 1 below.

Table 1. Age and gender of the respondents

Age (in years)	Female		Male		Total	
	<i>F</i>	%	<i>F</i>	%	<i>f</i>	%
17 and above	8	3.54	12	5.31	20	8.85
16	70	30.97	43	19.03	113	50.00
15	56	24.78	37	16.37	93	41.15
Total	134	59.29	92	40.71	226	100.00

As shown in

Table 1 presents the distribution of respondents according to age and gender. Out of 226 respondents, 134 or 59.29% were female students, while 92 or 40.71% were male students. Among the females, 56 (24.78%) were 15 years old, 70 (30.97%) were 16 years old, and 8 (3.54%) were 17 years old and above. On the other hand, 37 (16.37%) of the males were 15 years old, 43 (19.03%) were 16 years old, and 12 (5.31%) were 17 years old and above.

The data show that the majority of the respondents were female, comprising more than half of the total population. Most of the students were also within the expected age range of regular Grade 10 learners, particularly 16 years old, which implies that they generally entered school at the appropriate age as required by the Department of Education.

Age and gender are important demographic variables that influence students' academic experiences, outcomes, and performance. As noted by Jiang et al. [32], age is linked with academic self-efficacy, where older students tend to demonstrate higher confidence in their academic abilities. Similarly, Hyde et al. [33] emphasized that gender influences academic self-concept: male students often report higher self-concept in mathematics and science, while female students tend to excel in reading and writing domains.

6.1.2 . Parents' highest educational attainment

This section presents the Parents' Highest Educational Attainment which is considered as one of the variables that need to be determine in this study which could help in explaining the results of the study. Data gathered are presented in Table 2 below.

Table 2. Parents' highest educational attainment

Educational Attainment	Mother		Father	
	F	%	f	%
College Graduate	49	21.68	58	25.66
College Level	53	23.45	46	20.35
High School Graduate	83	36.73	60	26.55
High School Level	22	9.73	21	9.29
Elementary Graduate	9	3.98	8	3.54
Elementary Level	10	4.42	20	8.85
No Response	0	0.00	13	5.75
Total	226	100.00	226	100.00

As shown in Table 2, there were 83 out of 226 of the mothers of the respondents were high school graduate which is comprised of 36.73 percent followed by college level which is composed of 53 or 23.45 percent. There were 49 or 21.68 percent were college graduate and 22 or 9.73 percent were high school level. However, there were 10 or 4.42 percent were elementary level and there were only nine or 3.98 were elementary graduate. On the other hand, there were 60 out of 226 of the fathers of the respondents are high school graduate which is comprised of

26.55 percent followed by college graduate which is composed of 58 or 25.66 percent. There were 46 or 20.35 percent were college level and 21 or 9.29 percent were high school level. However, there were 20 or 8.85 percent were elementary level and there were eight or 3.54 were elementary graduate. Unfortunately, there were 13 out of 226 respondents did not know the educational background of their father for some circumstances such they do not have an idea about their father, they do not know who are their father and where they are.

Most of the parents of the parents of the respondents were high school graduate which is comprised 83 out of 226 or 36.73 percent for the mothers' educational attainment and 60 out of 226 or 26.55 percent for their fathers' highest educational attainment.

Several studies have explored the relationship between parents' highest educational attainment and their children's academic performance and achievement. A study by Davis – Kean [34], found that parents' education level was positively associated with their children's academic achievement, with higher level of parental education predicting higher levels of academic achievement among their children. Similarly, a study by MCloyd, et al. [35], found that parental education was a strong predictor of children's cognitive and academic outcomes. Overall, the parent's highest educational attainment is an important factor of their children's academic performance and achievement. The higher levels of parental education are associated with higher levels of academic achievement among children particularly in subjects such as math and science.

6.1.3. Combined Family Monthly Income

This section presents the combined family monthly income which is considered as one of the variables that need to be determine in this study which could help in explaining the results of the study. Data gathered are presented in Table 3 below.

Table 3. Combined family monthly income

Monthly Income (in pesos)	F	%
Above 30,000	26	11.50
25,001-30,000	14	6.19
20,001-25,000	16	7.08
15,001-20,000	31	13.72
10,001-15,000	49	21.68
10,000 and below	90	39.82
Total	226	100.00

As shown in Table 3, 90 out of 226 of the parents of the respondents earned ₱10,000.00 and below as combined family monthly income which is comprised of or 39.82 percent followed by ₱10,001.00 - ₱15,000.00 with 49 out of 226 or 21.68 percent. There were 49 out of 226 or 13.72 percent of them earned ₱15,001.00 - ₱20,000.00 and there were 26 out of 226 or 11.50 percent earned more than ₱30,000.00. Moreover, there were 16 out of 226 or 7.08 percent of them have a combined family monthly income of ₱20,001.00 - ₱25,000.00 and there were only 14 out of 226 or 6.19 percent of them earned ₱25,001.00 - ₱30,000.00.

Majority of the respondents' combined family monthly income is ₱10,000.00 and below which is composed of 90 out of 226 or 39.82 percent. On the contrary, there were only 14 out of 226 or 6.19 percent of them have a combined family monthly income of ₱20,001.00 - ₱25,000.00. Family income is a crucial factor that influence various aspects of the family life. It affects child development, parenting practices, health outcomes, and most especially in educational attainment of the children. It is a significant predictor of educational attainment. Children from low-income families are less likely to attend college or compete higher levels of education

compared to their peers from higher-income families. A study by Reardon, et al. [36], found that the income gap in educational attainment has widened over time, with children from high-income families becoming increasingly more likely to attend college.

6.2. Level of academic stress experienced by the respondents

In examining the level of academic stress experienced by the respondents, it is crucial to understand the significant impact that stress can have on students' overall well-being and academic performance. Academic stress is a common phenomenon among students such as academic expectations, faculty work and examinations, and their academic self-perceptions.

6.2.1 Academic Expectations

This section presents the level of academic stress experienced by the respondents in terms of academic expectations. It will also show the possible impact of their level of stress to their academic performance in Mathematics because of academic expectations. Data gathered are presented in Table 4 below.

Table 4. Level of academic stress experienced by the respondents in terms of academic expectations

S/N	Indicators	WM	Verbal Description
1	Competition with my peers for grades is quite intense.	3.54	High
2	My teachers are critical of my academic performance.	3.38	Moderate
3	Teachers have unrealistic of me.	2.69	Moderate
4	The unrealistic expectations of my parents stress me out.	3.23	Moderate
Aggregate Weighted Mean		3.21	Moderate

Legend: 4.21-5.00-Very High; 3.41-4.20-High; 2.61-3.40-Moderate; 1.81-2.60-Low; 1.00-1.80-Very Low

As shown in Table 4, most of the respondents experienced a high level of academic stress in terms of academic expectations in the statement number 1 stated that competition with peers for grades is quite intense for them with a weighted mean of 3.54. On the other hand, the respondents experienced a moderate level of academic stress in terms of academic expectations on the rest of the statements. Statement number 2 has a weighted mean of 3.38 and the statement number 3 has a weighted mean of 2.69 while the statement number 4 has a weighted mean of 3.23.

In general, the respondents experienced a moderate level of academic stress in terms of academic expectations with an aggregate weighted mean of 3.21 based on their responses on the survey questionnaire. "Competition with my peers for grades is quite intense" as stated in statement number #1 has the most impact on their level of academic stress in terms of academic expectations with a weighted mean of 3.54. However, the "Teachers have unrealistic of me" as stated in statement #3 has the least impact on their level of academic stress with a weighted mean of 2.69.

Academic stress is a common experience among students particularly when there were academic expectations on them. According to the study by Parikh, et al. [37], academic expectations were significant factor of academic stress among students. The study found that students who had higher academic expectations reported higher levels of academic stress, which in turn with negative outcomes such as poor sleep quality and lower academic performance. Similarly, a study by Wang and Eccles [38], found that academic stress was associated with academic expectations among students. The study found that students who had high academic expectations and perceived a large gap between their current academic performance and their desired performance reported higher levels of academic stress. Overall, academic stress is strongly associated with academic expectations. Particularly when students perceive their

expectations to be high. Higher levels of academic stress can lead to negative outcomes such as anxiety, depression, and lower academic performance.

6.2.2. Faculty Work and Examinations

This section presents the level of academic stress experienced by the respondents in terms of faculty work and examinations. It will also show the possible impact of their level of stress to their academic performance in Mathematics because of faculty work and examinations. Data gathered are presented in Table 5 below.

Table 5. Level of academic stress experienced by the respondents in terms of faculty work and examinations

S/N	Indicators	WM	Verbal Description
1	The time allocated to classes and academic work is enough.	3.39	Moderate
2	The size of the curriculum (workload) is excessive.	3.64	High
3	I believe that the amount of work assignment is too much.	3.73	High
4	Am unable to catch up getting behind my work.	3.22	Moderate
5	I have enough time to relax after work.	3.20	Moderate
6	The examination questions are usually difficult.	3.64	High
7	Examination times are very stressful to me.	3.68	High
Aggregate Weighted Mean		3.50	High

As shown in Table 5, the respondents experienced a high level of academic stress in terms of faculty work and examinations in the statement numbers 2, 3, 6, and 7 with a weighted mean of 3.64, 3.73, 3.64, and 3.68 respectively. Moreover, the respondents experienced a moderate level of academic stress in terms of faculty work and examinations in the statement numbers 1, 4, and 5 with a weighted mean of 3.39, 3.22, and 3.20 respectively.

In general, the respondents experienced a high level of academic stress in terms of faculty work and examinations with an aggregate weighted mean of 3.50 based on their responses on the survey questionnaire. "I believe that the amount of work assignment is too much" stated in statement number #3 has the most impact on their level of academic stress in terms of faculty work and examinations with a weighted mean of 3.73. However, the "I have enough time to relax after work." as stated in statement #5 has the least impact on their level of academic stress with a weighted mean of 3.20

Faculty work and examinations are often cited as sources of academic stress among students. A study by O'Connor, et al. [39], found that academic stress was associated with the perceived workload of faculty members. With students reporting higher levels of stress when they perceived their faculty members' workload to be high. The study also found that academic stress was associated with negative outcomes such as lower academic performance and poorer mental health. Similarly, a study by Crego, et al. [40] found that academic stress was associated with examinations among students. They found that students reported higher levels of stress during examination periods, which in turn was associated with negative outcomes such as anxiety and poor academic performance. Overall, faculty work and examinations are significant sources of academic stress among students. Higher levels of academic stress can lead to negative outcomes such as anxiety, depressions, and lower academic performance.

6.2.3. Academic Self-perceptions

This section presents the level of academic stress experienced by the respondents in terms of academic self-perceptions. Data gathered are presented in Table 6 below.

Table 6. Level of academic stress experienced by the respondents in terms of students' academic self-perceptions

S/N	Indicators	WM	Verbal Description
1	Am confident that I will be successful student.	3.85	High
2	Am I confident that I will be successful in my future career.	3.87	High
3	I can make decisions easily.	3.15	Moderate
4	I fear failing my courses this year.	4.19	High
5	I think that my worry about examinations is weakness of character.	3.80	High
6	Even if I pass my exams, am worried about getting a job.	3.96	High
Aggregate Weighted Mean		3.81	High

As shown in Table 6, the respondents experienced a moderate level of academic stress in terms of academic self-perceptions with a weighted mean of 3.15 in the statement number 1 stated that they can make decisions easily. However, the respondents experienced a high level of academic stress in terms of academic self-perceptions in the statement numbers 1, 2, 4, 5, and 6 with a weighted mean of 3.85, 3.87, 4.19, 3.80, and 3.96 respectively.

In general, the respondents experienced a high level of academic stress in terms of academic self-perceptions with an aggregate weighted mean of 3.81 based on their responses on the survey questionnaire. "I fear failing my courses this year." as stated in statement number #4 has the most impact on academic stress in terms of academic self-perceptions with a weighted mean of 4.19. However, the "I can make decisions easily." as stated in statement #3 has the least impact on their level of academic stress with a weighted mean of 3.15.

Academic self-perceptions are important factors that can influence the level of academic stress experienced by the students. According to the study by Sanchez – Ruiz, et al. [41] found that academic self-concept which is defined as the perception of one's academic abilities and potential. It was negatively associated with academic stress among students. The study found that students who had higher levels of academic self – concept reported lower levels of academic stress. Moreover, a study by Kim, et al. [42] found that academic self-esteem which is defined as the perception of one's academic worth and competence. It was negatively associated as well with academic stress among students. The study found that students who had higher levels of academic self-esteem reported lower levels of academic stress. Overall, the academic self- perceptions are important factors that can influence the level of academic stress experienced by the students. Higher levels of academic stress self-efficacy, academic self-esteem, and academic self-concept can lead to lower of academic stress. While lower levels of these self – perceptions can lead to higher levels of academic stress.

6.2.4. Summary on the Level of Academic Stress Experienced by the Respondents

This section presents the summary on the level of academic stress experienced by the respondents. Data gathered are presented in Table 7 below.

Table 7. Summary on the Level of academic stress experienced by the respondents

Components	WM	Verbal Description
Academic Expectations	3.21	Moderate
Faculty work and examinations	3.50	High
Students' academic self-perceptions	3.81	High
Grand Mean	3.51	High

As shown in Table 7, the respondents experienced a moderate level of academic stress in terms of academic expectations with a weighted mean of 3.21. On the other hand, the respondents experienced a high level of academic stress in terms of faculty work and examinations with a weighted mean of 3.50. Moreover, the respondents experienced a high level of academic stress in terms of their academic self - perceptions with a weighted mean of 3.81.

In general, the respondents experienced a high level of academic stress with a grand mean of 3.51 based on their responses on the survey questionnaire. Most the respondents experienced academic stress in terms on their academic self-perceptions with a weighted mean of

3.81. It was followed by in terms on faculty work and examinations with a weighted mean of 3.50. Lastly, they had experienced the least academic stress in terms of academic expectations with a weighted mean of 3.21.

6.3. Extent to which the respondents experience fear of failure in their performance

This section presents the extent to which the respondents experience fear of failure in their performance. Data gathered are presented in Table 8 below.

Table 8. Extent to which the respondents experience fear of failure in their performance

S/N	Indicators	WM	Verbal Description
1	When I am failing, it is often because I am not smart enough to perform successfully.	3.73	High
2	When I am failing, my future seems uncertain.	3.59	High
3	When I am failing, it upsets important others.	3.58	High
4	When I am failing, I blame my lack of talent.	3.69	High
5	When I am failing, I believe that my future plans will change.	3.62	High
6	When I am failing, I expect to be criticized by important others.	3.66	High
7	When I am failing, I am afraid that I might not have enough talent.	3.68	High
8	When I am failing, it upsets my "plan" for the future.	3.71	High
9	When I am failing, I lose the trust of people who are important to me.	3.13	Moderate
10	When I am not succeeding, I am less valuable than when I succeed.	3.60	High
11	When I am not succeeding, people are less interested in me.	3.55	High
12	When I am failing, I am not worried about it affecting my future plans.	2.73	Moderate
13	When I am not succeeding, people seem to want to help me less.	3.44	High
14	When I am failing, important others are not happy.	3.27	Moderate
15	When I am not succeeding, I get down on myself easily.	3.44	High
16	When I am failing, I hate the fact that I am not in control of the outcome.	4.02	High
17	When I am not succeeding, people tend to leave me alone.	3.96	High
18	When I am failing, it is embarrassing if others are there to see it.	3.10	Moderate
19	When I am failing, important others are disappointed.	3.93	High
20	When I am failing, I believe that everybody knows I am failing.	3.61	High
21	When I am not succeeding, some people are not interested in me anymore.	3.65	High
22	When I am failing, I believe that my doubters feel that they were right about me.	3.44	High
23	When I am not succeeding, my value decreases for some people.	3.73	High
		3.53	High

24	When I am failing, I worry about what others think about me.	3.97	High
25	When I am failing, I worry that others may think I am not trying.	4.07	High
Aggregate Weighted Mean		3.60	High

Legend: 4.21-5.00-Very High; 3.41-4.20-High; 2.61-3.40-Moderate; 1.81-2.60-Low; 1.00-1.80-Very Low

As shown in Table 8, the respondents experienced a high extent of fear of failure in their performance in the statements 1-8, 10-11, 14-16, and 18-15. However, the statement number 25 is the highest with the weighted mean of 4.07 saying that “When I am failing, I worry that others may think I am not trying” followed by the statement number 15 and 16 with a weighted mean of 4.02 and 3.96 respectively. However, the respondents experienced a moderate extent of fear of failure in their performance in the statements 9, 12, 13, and 17 with a weighted mean of 3.13, 2.73, 3.27, and 3.10 respectively.

In general, the respondents experienced a high extent of fear of failure in their performance with an aggregate weighted mean of 3.60 based on their responses on the survey questionnaire. Most of them were worry that others may think that they are not trying as stated in the statement number 25 has the highest weighted mean of 4.07. However, the statement number 12 stated that they are not worried about it affecting their future plans has the lowest weighted mean of 2.73.

Fear of failure is a common experience among students particularly in academic. According to the study by Stoeber, et al. [43] found that fear of failure was associated with perfectionism among the students. The study found that students who had higher levels of fear of failure tended to have higher levels of perfectionism. Which in turn was associated with negative outcomes such as anxiety and lower academic achievement. Moreover, a study by Elliot and Harackiewicz [44] also found that fear of failure was associated with performance-avoidance goals among students. The study found that students who had higher levels of fear of failure tented to avoid challenging tasks and focus on avoiding failure rather than pursuing success.

6.4. Extent to which the respondents utilize the coping strategies to overcome the stress and fear experienced by the respondents

This section presents the extent to which the respondents utilize the coping strategies to overcome the stress and fear experienced by the respondents. Data gathered are presented in Table 9 below.

Table 9. Extent to which the respondents utilize the coping strategies to overcome the stress and fear experienced by the respondents

S/N	Indicators	WM	Verbal Description
1	I talk to my relatives about my worries.	2.86	Moderately Utilized
2	I ask for advice from others.	3.21	Moderately Utilized
3	I ask for help to overcome problems.	3.06	Moderately Utilized
4	I keep my problems to myself.	3.46	Utilized
5	I eat more than usual.	2.96	Moderately Utilized
6	I eat things that give me pleasure.	3.18	Moderately Utilized
7	I want to cry.	3.36	Moderately Utilized
8	I watch TV.	2.99	Moderately Utilized
9	I can think of anything else.	3.23	Moderately Utilized
10	I sleep more than usual.	3.24	Moderately Utilized

11	I feel the need to write.	3.07	Moderately Utilized
12	I drink with friends.	2.75	Moderately Utilized
13	I go out, have fun, I celebrate.	3.02	Moderately Utilized
14	I smoke cigarettes.	2.39	Less Utilized
15	I see friends to help me change my focus.	3.08	Moderately Utilized
Aggregate Weighted Mean		3.06	Moderately Utilized

Legend: 4.21-5.00-Highly Utilized; 3.41-4.20- Utilized 2.61-3.40-Moderately Utilized ; 1.81-2.60- Less Utilized ; 1.00-1.80- Not Utilized

As shown in Table 9, most of the respondents said that they keep their problems by themselves as their coping strategies to overcome their stress and fear as stated in the statement number 4 with a weighted mean of 3.46. However, the respondents moderately utilized the as the coping strategies to overcome their stress and fear by crying, sleep more than usual, and think of anything else with a weighted mean of 3.36, 3.24, and 3.23 respectively. Moreover, there few less utilized the smoke cigarettes as their coping strategies to overcome their stress and fear with a weighted mean of 2.39.

In general, the respondents experienced a moderate utilization of coping strategies to overcome the stress and fear with a weighted mean of 3.06 based on their responses on the survey questionnaire. Most of them keep their problems by themselves with a weighted mean of 3.46 followed by crying with a weighted mean of 3.36. However, there few of them take smoking as their way of coping strategy to overcome the stress and fear with a weighted mean of 2.39. Crying is a common emotional expression that has been found to be used as a coping strategy by individuals in response to stress and fear.

In a study conducted by Bylsma, et al. [45], found that crying was associated with the release of emotional tension and reduction of negative affect in response to stress. The study also found that individuals who were more likely to cry in response to stress had better emotional regulations and were less likely to engage in maladaptive coping behaviors such as substance abuse or self-harm.

6.5. Level of mathematics performance of the respondents

This section presents the level of mathematics performance of the respondents. Data gathered are presented in Table 10 below.

Table 10. Level of Mathematics Performance of the Respondents

Level	Numerical Range	F	%
Advanced	90-100	54	23.89
Proficient	85-89	70	30.97
Approaching Proficiency	80-84	61	26.99
Developing	75-79	40	17.70
Beginning	Below 75	1	0.44
Total		226	100.00
Mean		85.27	
St. Dev.		5.78	

As shown in Table 10, there were 70 out of 226 respondents belong to the proficient level which is comprised of 30.97 percent. It was followed 61 or 26.99 percent under approaching proficiency level. There were 54 or 23.89 percent of the respondents were classified advanced level. However, there were 40 or 17.70 percent of them were under the level of developing and 1 out of 226 respondents belong to the beginning level. In general, the overall Mathematics performance level of the respondents is proficient with the mean of 85.27 and standard deviation

of 5.78. Most of the respondents were in proficient level with 70 respondents which is 30.97 percent. However, there was one respondent belong to the beginning level which is 0.44 percent.

Several studies have explored the level of mathematics performance among grade 10 students. A study by Mohammadpour and Shekarchizadeh [46], found that the majority of the grade 10 students in Iran had moderate to weak mathematical skills. The study also found that students who had a positive attitude towards mathematics and supportive teachers tended to perform better in the subject. Similarly, a study by Wrigley-Asante, et al. [47] in Ghana, found that grade 10 students had a moderate level of mathematics performance, with a significant gender gap in favor of males.

6.6. Test of significant relationship between the academic stress and coping strategies utilized by the respondents

This section presents the Test of significant relationship between the academic stress and coping strategies utilized by the respondents. Data gathered are presented in Table 11 below.

Table 11. Test of significant relationship between the academic stress and coping strategies utilized by the respondents

Variables	r-value	Strength of Correlation	p - value	Decision	Remarks
Academic Stress and Coping Strategies	0.003	Negligible Positive	0.963	Do not reject Ho	Not Significant

*significant at $p < 0.05$ (two-tailed)

As shown in Table 11, the r-value which indicates the correlation between academic stress and coping strategies, is 0.003. This value suggests a negligible positive correlation between the two variables. On the other hand, the p-value associated with this correlation is 0.963. With a p-value greater than 0.05, the decision is to not reject the null hypothesis (H_0), indicating that the relationship between academic stress and coping strategies is not statistically significant.

In conclusion, the test results show a negligible positive correlation between academic stress and coping strategies, but this correlation is not statistically significant. The remarks state that the relationship between academic stress and coping strategies is not significant based on the test results.

There are relatively few studies that have explored a positive correlation between academic stress and coping strategies among students. On the study by Lee, et al. [48] in Korea found a significant positive correlation between academic stress and emotion-focused coping strategies. The study also found that students who utilized emotion-focused coping strategies tended to have higher levels of stress and lower academic performance compared to those who utilized problem-focused coping strategies. In addition, another study by Shen [49] in China found a positive correlation between academic stress and certain coping strategies such as social support seeking and avoidance. The study suggested that students who utilized social support seeking coping strategies tended to have higher levels of stress, whereas those who utilized avoidance coping strategies tended to have lower levels of stress.

6.7. Test of significant relationship between the fear of failure and coping strategies utilized by the respondents

This section presents the test of significant relationship between the fear of failure and coping strategies utilized by the respondents. Data gathered are presented in Table 12 below.

Table 12. Test of significant relationship between the fear of failure and coping strategies utilized by the respondents

Variables	r-value	Strength of Correlation	p - value	Decision	Remarks
Fear of Failure and Coping Strategies	-0.053	Negligible Negative	0.431	Do not reject Ho	Not Significant

*significant at $p < 0.05$ (two-tailed)

As shown in Table 12, the correlation coefficient (r-value) between fear of failure and coping strategies is -0.053, indicating a negligible negative correlation. On the other hand, the p-value associated with this correlation is 0.431. With that, based on the p-value, the decision is "Do not reject Ho" (null hypothesis).

In conclusion, the analysis suggests that there is no significant relationship between the fear of failure and the coping strategies utilized by the respondents in this study. The test results indicate that the relationship between fear of failure and coping strategies is not significant at the 0.05 level (two-tailed).

There were several studies explored the negative correlation between fear and coping strategies among students. According to the study by Bendassolli and Tracado [50], in Brazil, found a significant negative correlation between fear of failure and problem-focused coping strategies such as planning and positive thinking. The study also found that students who utilized emotion-focused coping strategies such as avoidance and wishful thinking tended to have higher levels of fear of failure. Moreover, another study by Woltin, et al. [51] in Turkey, also found significant correlation between fear of failure and problem-focused coping strategies particularly social support seeking and cognitive restructuring. The study suggested that interventions to improve coping strategies among students may help reduce fear of failure and improve academic performance.

6.8. Test of significant relationship between the academic stress and performance of the respondents in mathematics

This section presents the test of significant relationship between the academic stress and performance of the respondents in Mathematics. Data gathered are presented in Table 13 below.

Table 13. Test of significant relationship between the academic stress and performance of the respondents in Mathematics

Variables	r-value	Strength of Correlation	p - value	Decision	Remarks
Academic Stress and Performance	0.015	Negligible Positive	0.817	Do not reject Ho	Not Significant

*significant at $p < 0.05$ (two-tailed)

As shown in Table 13, the correlation coefficient (r-value) between academic stress and performance was found to be 0.015, indicating a negligible positive correlation while the p-value associated with this correlation was 0.817. Based on the p-value, the decision is to not reject the null hypothesis (Ho), indicating that the relationship between academic stress and performance in Mathematics is not statistically significant.

In conclusion, the test results suggest that there is a negligible positive correlation between academic stress and performance in Mathematics among the respondents, and this relationship is not statistically significant.

Based on the study by Hosseinkhani, et al. [52], in Iran, found a positive correlation between academic stress and academic performance in mathematics among students. The study suggested that students who experienced moderate levels of academic stress tended to have higher academic performance possibly due to their increased focus and dedication to their studies. Additionally, another study by Bibi, et al. [53], in Pakistan, also found a positive correlation between academic stress and academic performance in mathematics among students. The stud suggested that students who experienced moderate levels of academic stress tended to have higher academic performance due to their increased effort and motivation to succeed.

6.9. Test of significant relationship between the fear of failure and academic performance of the respondents in mathematics

This section presents the test of significant relationship between the fear of failure and academic performance of the respondents in Mathematics. Data gathered are presented in Table 14 below.

Table 14. Test of significant relationship between the fear of failure and academic performance of the respondents in Mathematics

Variables	r-value	Strength of Correlation	p - value	Decision	Remarks
Fear of Failure and Academic Performance	0.127	Negligible Positive	0.057	Do not reject Ho	Not Significant

*significant at $p < 0.05$ (two-tailed)

As shown in Table 14, the correlation coefficient (r-value) between fear of failure and academic performance is 0.127, indicating a negligible positive correlation and the p-value associated with this correlation is 0.057. Based on the significance level of $p < 0.05$ (two-tailed), the decision is "Do not reject Ho" (null hypothesis).

In summary, the test results indicate a weak positive correlation between fear of failure and academic performance in Mathematics, which is not statistically significant at the $p < 0.05$ level. The test results suggest that the relationship between fear of failure and academic performance in Mathematics is not statistically significant at the specified significance level.

There were studies conducted and resulted to a positive correlation between fear of failure and academic performance in mathematics among students. According to the study by Nakhla [54], in the United Kingdom, found a significant positive correlation between fear of failure and academic performance in mathematics among students. The study suggested that students who had a high level of fear of failure tended to have higher academic performance in mathematics, possibly due to their increased motivation to succeed. Moreover, another study by Hwang, et al. [55], in the United States, found that students who had a fixed mindset and feared failure tended to have higher academic performance in mathematics compared to those who had a growth mindset. The study suggested that students with a fixed mindset were more likely to view abilities as fixed and to avoid challenging tasks leading to focus on maintaining their perceived ability rather than learning.

6.10. Test of significant relationship between the coping strategies and academic performance of the respondents in mathematics

This section presents the test of significant relationship between the coping strategies and academic performance of the respondents in Mathematics. Data gathered are presented in Table

15 below.

Table 15. Test of significant relationship between the coping strategies and academic performance of the respondents in Mathematics

Variables	r-value	Strength of Correlation	p - value	Decision	Remarks
Coping Strategies and Academic Performance	-0.063	Negligible Negative	0.345	Do not reject Ho	Not Significant

*significant at $p < 0.05$ (two-tailed)

As shown in Table 15, the correlation coefficient (r-value) between coping strategies and academic performance is -0.063, indicating a negligible negative correlation and the p-value associated with this correlation is 0.345. Based on the p-value, the decision is to not reject the null hypothesis (Ho), suggesting that the relationship between coping strategies and academic performance in Mathematics is not significant.

In conclusion, the analysis shows that there is a negligible negative correlation between coping strategies and academic performance in Mathematics among the respondents, and this relationship is not considered significant based on the test results. The test results indicate that the correlation between coping strategies and academic performance in Mathematics is not statistically significant at the 0.05 level.

Based on the study of Wu, et al. [56], in Iran, found a negative correlation between emotion-focused coping strategies such as cognitive avoidance and emotional discharge, and academic performance in mathematics among students. The study suggested that students who utilized emotion-focused coping strategies tended to have lower academic performance due to their decreased motivations and effort to succeed. Similarly, a study Belgin [57], in Turkey, also found a negative correlation between emotion-focused coping strategies such as social support seeking and cognitive avoidance, and academic performance in mathematics among students. The study suggested that students who utilized emotion-focused coping strategies tended to have lower academic performance due to their decreased focus and dedication towards their studies [60].

7. Discussion

Majority of the respondents' age 16 years old which comprised of 50.00 percent and there were 134 or 59.29 percent of the respondents were females and 92 or 40.71 percent were males. On the other hand, most of the respondents' mothers were high school graduate which is comprised of 83 or 36.73 percent while most of the fathers were high school graduate which is composed of 60 or 26.55. Moreover, most of the respondents have a combined family monthly income of ₱10,000.00 and below.

Furthermore, the respondents experienced a moderate level of academic stress in terms of academic expectations with an aggregated weighted mean of 3.31 and they experienced a high level of academic stress in terms of faculty work and examination with an aggregated weighted mean of 3.50. However, the respondents experienced a high level of academic stress in terms of academic self-perceptions with an aggregated weighted mean of 3.81 which has the highest aggregate weighted mean. In general, most of the respondents experienced a high level of academic stress with a grand mean of 3.51.

In addition, most of the respondents experienced a high level of fear of failure in their academic performance with an aggregate weighted mean of 3.60 and most of them were able to have a moderately utilized a coping strategies to overcome the stress and fear with an aggregate weighted mean of 3.06. Added to that, majority of the respondents were in the

proficient level of academic performance in Mathematics ranging a grade of 85-89 and the mean of their grades is 85.27 with a standard deviation of 5.78. Moreover, the study found that there is no significant relationship between the academic stress and coping strategies utilized by the respondents and there is no significant relationship between the fear of failure and coping strategies utilized by the respondents. Similarly, there is no significant relationship between the academic stress and academic performance of the respondents in Mathematics. At the same time, there is no significant relationship between the fear of failure and academic performance of the respondents in Mathematics. Moreover, there is no significant relationship between the coping strategies and academic performance of the respondents in Mathematics.

8. Conclusion and recommendations

Based on the findings, the study drawn to the conclusion that there is no significant correlation between the academic performance of the respondents in Mathematics to their academic stress, fear of failure, and even on their chosen coping strategies. At the same time, it concluded that there is no significant correlation between their academic stresses to their coping strategies. Moreover, the study found there is no significant correlation between the fear of failure on their coping strategies as well. It is highly recommended that the proposed action plan be adopted to enhance the performance of the respondents in mathematics.

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