Diversitas Journal
ISSN 2525-5215
Volume 11, Number 2 (Abr./Mai.. 2026) p. 0255 – 0269
https://diversitasjournal.com.br/diversitas_journal

Perceived Parental Expectations and Mathematics Anxiety: A Thematic Analysis of Junior High School Student's Experiences

FERRER, Regina Grace[1]; ISIDRO, Jefferson[2]; ALBAY, Eduard[3]

[1] 0009-0001-9509-4112; Don Mariano Marcos Memorial State University-South La Union Campus. Agoo, La Union, (AGOO-LU) Philippines.reginaferrer1323@gmail.com
[2] 0000-0002-4433-8228; Don Mariano Marcos Memorial State University-South La Union Campus. Agoo, La Union, (AGOO-LU) Philippines.jisidro@dmmmsu.edu.ph
[3] 0000-0001-6087-1340; Don Mariano Marcos Memorial State University-South La Union Campus. Agoo, La Union, (AGOO-LU) Philippines.ealbay@dmmmsu.edu.ph

O conteúdo expresso nessse artigo é de inteira responsabilidade dos/as seus/as autores/as.

ABSTRACT

This qualitative study explores how junior high school students perceive parental expectations in relation to their experiences of mathematics anxiety in a public secondary school in La Union, Philippines. Twenty-five purposively selected students from Grades 7 to 10 participated in semi-structured interviews. Data were analyzed using Braun and Clarke's (2006) thematic analysis framework. Four major themes emerged: (1) perceived parental expectations and pressure; (2) cognitive, emotional, and physiological indicators of mathematics anxiety; (3) coping strategies and alternative support systems; and (4) perceived influence on academic self-concept and personal well-being. Students described parental comparisons, high performance expectations, and emotional reactions to academic outcomes as contributing to heightened anxiety responses during mathematical tasks. Findings highlight the role of family emotional climate in shaping adolescents' academic experiences. The study underscores the importance of supportive parental communication and balanced expectations in fostering mathematical resilience and psychological well-being

RESUMO

Este estudo qualitativo investiga como estudantes do ensino fundamental percebem as expectativas parentais em relação às suas experiências de ansiedade matemática em uma escola pública em La Union, Filipinas. Vinte e cinco alunos, selecionados intencionalmente do 7º ao 10º ano, participaram de entrevistas semiestruturadas. Os dados foram analisados segundo a análise temática de Braun e Clarke (2006). Quatro temas principais emergiram: (1) expectativas e pressões parentais percebidas; (2) indicadores cognitivos, emocionais e fisiológicos da ansiedade matemática; (3) estratégias de enfrentamento e sistemas alternativos de apoio; e (4) influência percebida sobre o auto conceito acadêmico e o bem-estar pessoal. Os estudantes relataram comparações familiares, altas expectativas de desempenho e reações emocionais aos resultados acadêmicos como fatores que intensificam a ansiedade durante atividades matemáticas. Os achados destacam o papel do clima emocional familiar na experiência acadêmica dos adolescentes. O estudo ressalta a importância de uma comunicação parental de apoio e de expectativas equilibradas para promover a resiliência matemática e o bem-estar psicológico.

ARTICLE INFORMATION

Article process
Submitted: 05/28/25025
Approved 04/13/2026
Published: 05/12/2026

Keywords*:*
Parental Expectations, mathematics anxiety, junior High School students, qualitative study, emotional well-being

Palavras-Chave
Expectativas parentais, ansiedade em matemática, estudantes do ensino fundamental II, estudo qualitativo, bem-estar emocional

DOI: 10.48017/dj.v11i2.3675

Introduction

Math anxiety, also known as mathematics anxiety, is a well-documented and pervasive phenomenon that elicits unfavorable emotional reactions in students when they encounter mathematical tasks (Smith, 2022). Mathematics anxiety can be defined as “a general fear of contact with mathematics, including classes, homework, and tests” (Hembree, 1990, p. 34). Math anxiety is related to several different variables, including manipulative experience, learning style, personality type, and math beliefs (Austin & Wadlington, 1992; Hadfield & McNeil, 1994; McCoy, 1990; Sloan, Daane, & Giesen, 2002). For instance, students worry when they have to meet with the teacher because they haven't completed their homework, when their homework is incorrect, when they are asked questions by the teacher, when they can't remember a particular mathematical formula, when they can't draw the right geometric shapes, when they don't understand what the teacher is explaining, when they are asked to complete problems in front of the class, and when they are anxious to receive reprimands from the instructor, worry if the instructor gives a test or quiz out of the blue, and so forth.

Mathematics anxiety is not a new problem in the world of education, but this construct has remained significant in the field. The origins of mathematics anxiety can be categorized into environmental, cognitive, and personality factors (Trujilo & Hadfield, 1999). Environmental factors may include limited teacher motivation, pressure from parents, and the use of traditional teaching approaches such as rote memorization, mechanical number manipulation, and repetitive arithmetic tasks. Over time, these factors can affect other elements that are essential for providing high-quality mathematics education.

Mathematics is one subject that pervades life at any age, in any circumstance. Its value goes beyond the classroom and into the school. One of the key reasons mathematics is important is its ability to help people analyze situations and develop solutions to real-world problems. Mathematics is a vital tool for solving problems encountered in both scientific fields and everyday life. It encourages the development of creative and critical thinking skills while also helping individuals gain a deeper understanding of the world around them. Research by Vale and Barbosa (2023) emphasizes the role of active learning strategies in making mathematics more engaging and applicable to real-world situations. Similarly, Mayerhofer et al. (2024) explore how students' perceptions of the value of mathematics influence their transition into STEM fields.

The complex interaction of cognitive, emotional, and social factors influences mathematical experiences and accomplishment; personality type, learning style, intellectual demands, educational contexts, and personal characteristics all play important roles. Mathematics beliefs, such as the perception that mathematical ability is either an innate trait or a skill that can be developed, impact motivation and persistence (Cardino & Ortega-Dela Cruz, 2020). While people who think math is hard may feel more anxious and avoid it, those who think they can become better usually tackle problems with resilience. Personality type

further shapes mathematical experiences; conscientious individuals tend to be methodical and persistent, while those high in openness may approach mathematical problems creatively (Santiago & Pio, 2025). On the other hand, children who are prone to anxiety may find it difficult because stress reduces their working memory and cognitive flexibility. These factors dynamically affect students' confidence, commitment, and general mathematical achievement.

Mathematics anxiety has been studied for a long time, and several studies also show that one of the factors affecting learners is parental pressure. Parental involvement has long been considered a relevant factor in children's education, including mathematics (Gunderson et al., 2012; Maloney et al., 2015). Parents' support and collaboration in their children's learning process significantly influence their motivation and achievement. Studies have shown a strong connection between parental support and improvements in students' academic performance (Fantuzzo et al., 2004). As such, developing knowledge about parental involvement is essential for fostering better mathematical outcomes.

Parental expectations have a powerful impact on students' emotional responses to mathematics, shaping not only achievement outcomes but also anxiety levels. Research shows that high parental expectations can elevate students' negative self-esteem and anxiety about mathematics when expectations are perceived as pressure rather than support (Maloney et al., 2015). For most high school students, parental expectations were positively linked to achievement but also associated with greater mathematics anxiety when students struggled to meet those expectations. This suggests that even well intended academic hopes can inadvertently place emotional strain on learners when they feel unable to fulfill parental academic ideals. Furthermore, parents' beliefs about the importance of mathematics can interact with their own attitudes, such that strong emphasis on the subject combined with negative feelings or anxiety about math may intensify children's worry and avoidance behaviors toward mathematical tasks. These findings emphasize that parental expectations must be balanced with empathy and understanding to avoid amplifying fear and stress in students.

The relationship between parental involvement, specifically parent-child communication, and mathematics achievement has been widely explored. Johnson (2016) conducted an empirical review study and found that parent-student discussions significantly contribute to secondary school students' mathematics success. On the other hand, Fudolin and Dioso (2025) highlighted the negative impact of peer pressure on students' academic performance in the Philippines, emphasizing the crucial role of supportive family interactions. These findings underscore the importance of effective parent-child communication in mitigating math-related anxiety and promoting academic achievement.

According to Yau et al. (2021), the family plays a crucial role as the child's primary environment, influencing their development, self-esteem, and academic achievement through parenting behaviors, communication, and parental support. Engaging in frequent and open

discussions on various topics can help develop mutual understanding and make children feel less isolated (Ying et al., 2019). Extensive research supports the idea that effective communication within families plays a vital role in promoting children's mental health, contributing positively to their emotional well-being and resilience. In particular, Diab, Palosaari, and Punamäki (2018) found a positive correlation between parent-child communication and children's mental well-being.

The benefits of strong parent–child communication extend beyond emotional well being and can contribute to better peer relationships and friendship quality among children and adolescents (Qu, Li, & Wang, 2021). Studies on parental support highlight the critical role it plays in students' psychological well-being (Geng et al., 2022). Parental support, whether provided directly or indirectly, plays an important role in students' physical health and well-being. It also significantly influences learners' motivation and academic achievement, particularly during the K–9 levels of education. Moreover, interviews with children from low socioeconomic backgrounds highlight that parental support is essential for their physical and emotional development. In addition, fostering strong parent-child communication is crucial for addressing these challenges and promoting overall well-being. By ensuring a supportive and communicative family environment, parents can help their children develop resilience, maintain healthy relationships, and achieve academic success.

While mathematics anxiety has been extensively studied, much of the existing research has focused on quantitative associations between parental involvement and student achievement outcomes. Limited research has examined how junior high school students narratively experience parental expectations as a source of mathematics anxiety, particularly within the Philippine public-school context. Understanding these lived experiences is critical for developing culturally responsive interventions that address both the emotional and academic dimensions of mathematics learning.

This study aims to explore how junior high school learners perceive parental expectations in relation to their mathematics anxiety. Specifically, it seeks to understand how these expectations are internalized, how they manifest emotionally and cognitively, and how students cope with and interpret these experiences within their academic and personal lives.

Research Questions

1. How do junior high school students perceive parental expectations in relation to mathematics performance?
2. What emotional, cognitive, and physiological indicators of mathematics anxiety emerge from these perceptions?
3. What coping strategies do students employ in managing mathematics anxiety?
4. How does mathematics anxiety influence their academic self-concept and personal well-being?

Methodology

Research Design

This study employed a qualitative research design to explore junior high school students lived experiences of parental expectations and their perceived relationship to mathematics anxiety. A qualitative approach was appropriate because the study aimed to understand participants' subjective interpretations, emotional responses, and meaning-making processes rather than to measure statistical relationships between variables.

Semi-structured interviews were utilized to allow participants to describe their experiences in depth while ensuring consistency across interviews. The data were analyzed using Braun and Clarke's (2006) thematic analysis framework, which enabled systematic identification, organization, and interpretation of recurring patterns within the data.

Sources of Data

The participants consisted of 25 junior high school students from Grades 7 to 10 enrolled during the Academic Year 2024–2025 in a public secondary school in La Union, Philippines. Participants were approximately 12 to 16 years old. The sample consisted of both male and female students enrolled in a public secondary school serving learners from varied socioeconomic backgrounds within the community. Although the study did not formally categorize participants by socioeconomic status, the school population reflects the typical demographic diversity found in public secondary schools in the region.

Purposive sampling was employed to select students who were willing to share their experiences regarding mathematics learning and parental expectations. The sample size was deemed sufficient as data saturation was reached when no new themes emerged during analysis.

To maintain institutional confidentiality, the name of the school is withheld.

Instrumentation and Data Collection

This study employed semi-structured interviews as the primary data collection method to explore the influence of parental pressure on students' mathematics anxiety. Semi structured interviews are widely recognized as effective tools in qualitative research because they combine a flexible interview guide with a consistent structure across participants, allowing researchers to explore topics in depth while ensuring comparability in data collection (Quintela Do Carmo et al., 2024). The interview guide consisted of open-ended questions that encouraged participants to express their thoughts and share personal experiences related to parental expectations and academic pressure. The interviews were conducted through face-to-face interactions to foster trust and openness, which are essential for gathering in-depth qualitative data. Each session was recorded with the consent of the participants to ensure accuracy in data transcription and analysis.

To uphold ethical standards, the researcher obtained informed consent from all participants prior to the interviews. Participants were assured of the confidentiality and anonymity of their responses, and they were informed of their right to withdraw from the study at any point without penalty. These measures were taken in accordance with established ethical standards in educational research, ensuring respect for participants and integrity in the research process (BERA, 2024).

Trustworthiness of the Study

To ensure methodological rigor, several strategies were implemented:

Credibility: Selected participants were invited to clarify portions of their responses to ensure accurate interpretation (member clarification).

Dependability: An audit trail documenting coding decisions and theme development was maintained throughout the analysis.

Confirmability: Peer debriefing was conducted to reduce potential researcher bias in theme construction.

Transferability: Thick descriptions of participants' experiences were provided to allow readers to determine applicability to similar contexts.

Ethical Considerations

Ethical approval was secured from the school administration prior to data collection. Written informed consent was obtained from parents or legal guardians, and assent was obtained from student participants. Participation was voluntary, and students were informed of their right to withdraw at any time without academic or personal consequences. Confidentiality and anonymity were strictly maintained throughout the study.

Data Analysis Procedures

The data gathered from the interviews were analyzed using thematic analysis, a method that allows researchers to identify, analyze, and report recurring patterns or themes within qualitative data (Braun & Clarke, 2006). This approach was particularly suited to understanding the complex and personal experiences of junior high school students concerning parental pressure and mathematics anxiety. The analysis focused on identifying underlying themes related to parental expectations, disciplinary behaviors, emotional reactions, and academic demands. These themes were derived from recurrent narratives shared by participants, which reflected their lived experiences and emotional responses to parental pressure in the context of mathematics performance.

Thematic analysis enabled the study to provide rich, detailed insights into the psychological and emotional dimensions of mathematics anxiety, particularly how familial influences shape it. The results contribute to a more nuanced understanding of how external

academic pressures, particularly from parents, can negatively affect students' attitudes and confidence in mathematics.

To ensure credibility, interview transcripts were reviewed for accuracy, and selected participants were invited to clarify their responses (member checking). Peer debriefing was conducted to minimize researcher bias during theme development. An audit trail documenting coding decisions was maintained to ensure dependability. Thick descriptions were provided to enhance the transferability of findings.

Results and Discussion

The analysis of interview transcripts produced four major themes describing how students perceive parental expectations and how these perceptions relate to their experiences of mathematics anxiety. These themes include: (1) perceived parental expectations and pressure, (2) indicators and triggers of mathematics anxiety, (3) coping strategies and support systems, and (4) influence on academic and personal well-being.

Thematic Approach 1: Perceived Parental Expectations and Pressure

The analysis of student interviews revealed a dominant theme: the pressure stemming from perceived parental expectations significantly contributes to mathematics anxiety. Most participants reported that their parents place a strong emphasis on excelling in mathematics, often framing it as essential for future academic and career success. This expectation, although sometimes implicit, was clearly internalized by the students, manifesting as emotional stress and self-doubt.

Some students shared that their parents verbalized the importance of mathematics in daily life and higher education, reinforcing the idea that proficiency in the subject was non-negotiable. In other cases, students experienced silent forms of pressure, such as unspoken disappointment or subtle comparisons to relatives who perform better in math. These reactions created an environment where academic performance became tied to self-worth.

Participants Stated:

"My father is a math teacher, and he always wants me to excel in math. He often states that math runs in our genes which makes me feel pressured."

"My parents always say that math is used in everyday life and is needed for my future, which is why they want me to be a math genius. "

"They are not the kind of parents who will scold me for bringing a math test paper with a low score, but I know when they are silent, it means everything, and I feel disappointed."

"I don't know why my mom always compares my mathematics performance to my cousin, who is way smarter in mathematics than me. It makes me question myself and makes me feel I am not good enough."

"My parents are getting frustrated if I am not able to solve my math problems by myself. It makes me question that if I fail math then I will fail my life too."

These narratives suggest that students often internalize parental expectations and interpret them as indicators of their worth and capability. Previous research has emphasized that parental attitudes and expectations toward mathematics can influence students' emotional responses and academic self-perceptions (Maloney et al., 2015; Wang et al., 2024).

Thematic Approach 2: Indication of Math Anxiety and its Triggers

The students' narratives revealed clear cognitive, emotional, and physiological indicators of mathematics anxiety, highlighting the role of parental pressure as a critical trigger. Their responses provide valuable insight into how math anxiety is experienced not only during academic tasks but also in anticipatory contexts, such as preparing for exams or interacting with parents about math-related topics.

Participants Stated:

"During a math test, I always feel nauseous, and the next thing is that my mind goes blank, and I am not able to think of the things I have studied."

"I get even anxious when my parents are trying to help me with my math homework. My mom gets impatient immediately when I am not able to understand."

"My anxiety becomes worse when I know a test is about to come, as my parents have been drilling me."

"My anxiety usually flares up when I need to explain a math concept to my parents, especially when they don't understand my explanation right away."

"I often get nervous every time my teacher asks me to solve a problem at the board, thinking my parents will be disappointed if my answer is not correct."

Such experiences are consistent with prior studies showing that mathematics anxiety can manifest through emotional distress, cognitive interference, and physiological reactions that disrupt students' problem-solving processes (Ashcraft & Krause, 2007; George & Mitchell, 2022).

Thematic Approach 3: Handling Strategies and Support Systems

While the roots and triggers of mathematics anxiety are largely shaped by external pressures, particularly parental expectations, students also revealed various coping mechanisms and support systems that help them manage their anxiety. These strategies range from self-regulated learning approaches to interpersonal sources of emotional and academic support. The responses show that despite experiencing stress and pressure, many students demonstrate resilience and agency in navigating their academic challenges.

Participants Stated:

"I am trying to break down the problem into smaller steps and trying to solve it on my own using tutorials online."

"I wish that my parents would tell me that it is okay to make mistakes and that I am still worth it."

"My older sister always helps me with my mathematics homework as she is good at math and is more patient with me than my parents."

"During math classes, my teacher always offers help and understands why I am a bit slow at solving mathematical problems."

"I wish my parents could focus on my effort in learning mathematical concepts rather than on my mistakes."

These responses indicate that supportive relationships and constructive feedback can help students manage anxiety and maintain engagement with mathematics learning. Research suggests that positive academic support and self-regulated learning strategies can reduce the negative effects of mathematics anxiety and improve students' confidence in problem solving (Harahap et al., 2025; Li & Wu, 2022).

Thematic Approach 4: Influence on Academic and Personal Well-being

The final theme highlights the far-reaching consequences of mathematics anxiety on students' academic performance, emotional well-being, and personal development—all of which are significantly intensified by parental pressure. The students' reflections reveal how persistent stress related to math and high expectations from parents contribute not only to underachievement but also to long-term psychological effects. Li, Q., & Wu, Y. (2022)

Participants Stated:

"It makes me feel stupid every time I get a low grade. My reality affects my self-esteem and my confidence level."

"It caused tension between me and my parents as we argued more about school, and I sometimes got angry for putting so much pressure on me."

"My mathematics anxiety caused me to doubt my abilities in mathematics and some other areas as well, because of my failure in this one big subject."

"No motivation to try new things and to take risks even outside academics, because of the fear of failure."

"My mental health suffered, and I find it easy to get irritated and lack sleep because of feeling hopeless about my mathematics struggle."

Some participants further described emotional consequences, such as irritability and sleep difficulties, associated with ongoing academic stress. Previous research has similarly found that mathematics anxiety is associated with reduced academic confidence, lower achievement, and broader emotional challenges among learners (Barroso et al., 2021; Ruff & Boes, 2014).

Discussion

The findings of this study provide insight into how junior high school students interpret parental expectations in relation to their experiences of mathematics anxiety. The themes identified reveal that students perceive parental expectations as an important contextual factor shaping their emotional responses toward mathematics.

One key finding concerns the role of perceived parental pressure. Students described both direct expectations and indirect signals of disappointment, which they interpreted as indicators of parental evaluation. These experiences are consistent with research on the intergenerational transmission of mathematics anxiety, which suggests that parents' attitudes toward mathematics can influence children's emotional responses and academic engagement (Maloney et al., 2015). Similarly, studies have shown that parental beliefs and expectations regarding academic performance can affect students' motivation and anxiety levels (Wang et al., 2024).

While many participants described parental expectations as a source of pressure, the findings also suggest that parental involvement can take both supportive and stressful forms. When expectations are communicated through comparisons or expressions of disappointment, students may interpret these behaviors as performance pressure. However, when parents emphasize encouragement, patience, and recognition of effort, students may perceive parental involvement as supportive rather than anxiety-inducing. These contrasting experiences highlight the importance of how parental expectations are communicated rather than the expectations themselves.

The findings also align with theoretical perspectives on achievement emotions. According to the Control–Value Theory of achievement emotions, students' emotional experiences in academic settings are shaped by their perceptions of control over learning outcomes and the value placed on those outcomes (Pekrun, 2006). When students perceive mathematics achievement as highly valued by parents but feel uncertain about their ability to meet those expectations, anxiety may emerge as a natural emotional response.

Another important observation concerns the cognitive and physiological manifestations of mathematics anxiety reported by participants. Experiences such as mental blocks during examinations and anticipatory stress before tests are consistent with research indicating that anxiety can interfere with working memory and hinder mathematical problem solving (Ashcraft & Krause, 2007). Over time, these experiences may contribute to a cycle in which anxiety reduces performance, which in turn reinforces students' negative beliefs about their mathematical abilities.

The coping strategies described by students highlight the importance of supportive learning environments. Many participants reported relying on teachers, siblings, or independent learning strategies to manage anxiety. Such forms of support can foster mastery

experiences and strengthen students' academic self-efficacy, which are essential components of effective learning (Harahap et al., 2024).

The narratives also suggest that teachers play an important role in mitigating mathematics anxiety. Several participants described teachers as sources of encouragement and patience, which helped them remain engaged in mathematical tasks despite experiencing anxiety. Supportive teacher behaviors such as providing guidance, allowing time for understanding, and offering reassurance may create a psychologically safe classroom environment that encourages persistence in problem-solving. These observations highlight the important role teachers play not only in delivering instruction but also in shaping students' emotional experiences in mathematics learning.

Finally, the results indicate that mathematics anxiety extends beyond academic performance and affects students' broader psychological well-being. Participants described diminished confidence, reduced motivation, and tension in family relationships resulting from academic pressure. These findings are consistent with previous research showing that mathematics anxiety can negatively influence students' self-concept, motivation, and engagement in learning activities (George & Mitchell, 2022).

Taken together, the findings highlight the importance of balancing parental expectations with emotional support. When parents communicate encouragement, patience, and acceptance of mistakes, students may be more likely to develop resilience and confidence in mathematics learning.

Conclusion

This study explored how junior high school learners perceive parental expectations in relation to their experiences of mathematics anxiety. Through qualitative interviews with students from Grades 7 to 10, the study revealed that perceived parental pressure plays a meaningful role in shaping students' emotional responses toward mathematics. Participants described how explicit expectations, comparisons with peers or relatives, and non-verbal expressions of disappointment from parents contributed to feelings of stress, self-doubt, and fear of failure when engaging with mathematical tasks.

The findings also demonstrated that mathematics anxiety manifests through cognitive, emotional, and physiological reactions, including mental blocks during examinations, heightened nervousness during classroom participation, and anticipatory stress when discussing academic performance with parents. These experiences support previous research indicating that anxiety can interfere with cognitive processes such as working memory and problem-solving, ultimately affecting students' academic engagement (Ashcraft & Krause, 2007).

Despite these challenges, students also demonstrated resilience through various coping strategies. Participants reported relying on self-directed learning approaches, support from siblings, and encouragement from teachers to manage their anxiety and maintain academic

effort. These support systems appear to play an important role in buffering the negative effects of academic pressure.

In addition to its immediate academic effects, mathematics anxiety may also influence students' long-term educational choices. Previous studies have shown that persistent anxiety toward mathematics can lead students to avoid advanced mathematics courses or careers related to science, technology, engineering, and mathematics (STEM). Although the present study focused primarily on students' current experiences, participants' reflections on fear of failure and reduced confidence suggest potential implications for future academic pathways.

Overall, the findings contribute to the growing body of research on mathematics anxiety by highlighting how students interpret parental expectations within their everyday academic experiences. Rather than establishing causal relationships, the study provides a contextualized understanding of how family dynamics and perceived expectations influence students' emotional engagement with mathematics.

Educational Implications

The findings of this study offer several implications for educators, parents, and school administrators.

First, the results emphasize the importance of fostering supportive learning environments that prioritize encouragement and constructive feedback. Teachers can help mitigate mathematics anxiety by creating classroom cultures that normalize mistakes as part of the learning process and encourage persistence in problem-solving.

Second, the study highlights the critical role of parental communication in shaping students' emotional experiences of learning. Parents who emphasize effort, improvement, and learning from mistakes may help reduce anxiety and strengthen students' confidence in mathematics. Providing guidance to parents on constructive ways to support their children's academic development may therefore be beneficial.

Third, schools may consider implementing awareness programs or workshops that address mathematics anxiety among students and parents. Such initiatives could help families better understand how expectations and communication styles influence students' emotional well-being and academic motivation. Schools may also consider implementing intervention programs designed to address mathematics anxiety among students and parents. For instance, parent-oriented workshops could help families understand how communication styles and expectations influence students' emotional responses to academic tasks. Similarly, school-based programs that promote growth mindset, self-regulated learning strategies, and supportive feedback may help students develop confidence and resilience when facing mathematical challenges.

Recommendations

Based on the findings of this study, the following recommendations are proposed:

For parents: Encourage supportive communication that emphasizes effort and learning rather than focusing solely on academic performance or grades.

For teachers: Integrate instructional practices that promote positive mathematical experiences, such as collaborative problem-solving, scaffolding strategies, and opportunities for students to build confidence through gradual mastery.

For schools: Develop programs or seminars that help parents understand the potential effects of excessive academic pressure and promote balanced expectations for students.

For future researchers: Conduct further studies examining mathematics anxiety across different educational levels and cultural contexts, as well as research exploring intervention strategies that may help students develop resilience and positive attitudes toward mathematics.

Future research may also consider combining qualitative and quantitative approaches to further examine the relationships between parental expectations, emotional experiences, and academic outcomes.

REFERENCES

Mark H. Ashcraft, & Jeremy A. Krause. (2007). *Working memory, math performance, and math anxiety*. Psychonomic Bulletin & Review, *14*(2), 243–248. https://doi.org/10.3758/BF03194059 (pubmed.ncbi.nlm.nih.gov)

Austin, S., & Wadlington, E. (1992). Anxiety and mathematics: An update. *Journal of School Leadership, 2*(2), 130–141. https://www.jstor.org/stable/42802463

Barroso, C., Ganley, C. M., McGraw, A. L., Geer, E. A., Hart, S. A., & Daucourt, M. C. (2021). A meta-analysis of the relation between math anxiety and math achievement. *Psychological Bulletin, 147*(2), 134–168. https://doi.org/10.1037/bul0000307

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

British Educational Research Association. (2024). *Ethical guidelines for educational research* (5th ed.). British Educational Research Association. https://www.bera.ac.uk/publication/ethical-guidelines-for-educational-research-2024

Cardino, J. M., & Ortega-Dela Cruz, R. A. (2020). Understanding of learning styles and mathematics performance among students. *International Journal of Educational Research Review, 5*(2), 120–129. https://files.eric.ed.gov/fulltext/EJ1272228.pdf

Diab, S. Y., Palosaari, E., & Punamäki, R.-L. (2018). Society, individual, family, and school factors contributing to child mental health in war: The ecological-theory perspective. *Child Abuse & Neglect, 84*, 205–216. https://doi.org/10.1016/j.chiabu.2018.07.016

Fantuzzo, J., McWayne, C., Perry, M. A., & Childs, S. (2004). Multiple dimensions of family involvement and their relations to behavioral and learning competencies for urban, low-

income children. *School Psychology Review, 33*(4), 467–480. https://eric.ed.gov/?id=EJ683756

Fudolin, M., & Dioso, E. (2025). Perceived effects of peer pressure on academic performance: A correlational study. *International Journal of Interdisciplinary Viewpoints, 1*(4), 327–345. https://doi.org/10.64612/ijiv.v1i4.23

Geng, G., Midford, R., & Buckworth, J. (2015). Investigating the stress levels of early childhood, primary and secondary pre-service teachers during teaching practicum. *Journal of Teacher Education for Sustainability, 17*, 35–47. https://doi.org/10.1515/jtes-2015-0003

Gunderson, E. A., Ramirez, G., Levine, S. C., & Beilock, S. L. (2012). The role of parents and teachers in the development of gender-related math attitudes. *Sex Roles, 66*(3–4), 153–166. https://doi.org/10.1007/s11199-011-9996-2

Hadfield, O. D., & McNeil, K. (1994). The relationship between Myers-Briggs personality type and mathematics anxiety among preservice elementary teachers. *Journal of Instructional Psychology, 21*(4), 375–384. https://psycnet.apa.org/record/1995-27007-001

Harahap, L. E. S., Andayani, S., & Ekwan, D. (2025). How does self-regulated learning affect students' mathematics anxiety? *Pedagogical Research, 10*(1), em0230. https://doi.org/10.29333/pr/15648

Hembree, R. (1990). The nature, effects, and relief of mathematics anxiety. *Journal for Research in Mathematics Education, 21*(1), 33–46. https://doi.org/10.2307/749455

Johnson, P. (2016). *Types of parental involvement and their effect on student mathematics in secondary education: Attitudes, self-efficacy, and achievement* (Master's thesis, St. Cloud State University). St. Cloud State University Repository. https://repository.stcloudstate.edu/ed_etds/20

Maloney, E. A., Ramirez, G., Gunderson, E. A., Levine, S. C., & Beilock, S. L. (2015). Intergenerational effects of parents' math anxiety on children's math achievement and anxiety. *Psychological Science, 26*(9), 1480–1488. https://doi.org/10.1177/0956797615592630

Mayerhofer, M., Lüftenegger, M., & Eichmair, M. (2024). The development of mathematics expectancy-value profiles during the secondary–tertiary transition into STEM fields. *International Journal of STEM Education, 11*, Article 31. https://doi.org/10.1186/s40594-024-00491-6

Mitchell, L., & George, L. (2022). Exploring mathematics anxiety among primary school students: Prevalence, mathematics performance and gender. *International Electronic Journal of Mathematics Education, 17*(3), em0692. https://doi.org/10.29333/iejme/12073

Palosaari, E., Diab, S. Y., & Punamäki, R.-L. (2018). Society, individual, family, and school factors contributing to child mental health in war: The ecological-theory perspective. *Child Abuse & Neglect, 84*, 205–216. https://doi.org/10.1016/j.chiabu.2018.07.016

Pekrun, R. (2006). The control-value theory of achievement emotions: Assumptions, correlates, and consequences. In P. A. Schutz & R. Pekrun (Eds.), *Emotion in education* (pp. 13–36). Academic Press. https://people.ict.usc.edu/~gratch/CSCI534/Old-Readings/Pekrun-control-value-theory.pdf

Qu, W., Li, K., & Wang, Y. (2021). Early adolescents' parent-child communication and friendship quality: A cross-lagged analysis. *Social Behavior and Personality: An International Journal, 49*(9), 1–10. https://doi.org/10.2224/sbp.10697

Quintela Do Carmo, G., Vinuesa, V., Dembélé, M., & Ayotte-Beaudet, J.-P. (2024). Going beyond adaptation: An integrative review and ethical considerations of semi-structured interviews with elementary-aged children. *International Journal of Qualitative Methods, 23*, 1–15. https://doi.org/10.1177/16094069241247474

Ruff, S. E., & Boes, S. R. (2014). The sum of all fears: The effects of math anxiety on math achievement in fifth-grade students and implications for school counselors. *Journal of School Counseling, 12*(11), 1–35. https://files.eric.ed.gov/fulltext/EJ1084441.pdf

Santiago, H. B., & Pio, J. M. (2025). Factors affecting BSED-mathematics students' learning achievement in mathematics at Ifugao State University–Potia Campus. *Pedagogy Review: An International Journal of Educational Theories, Approaches and Strategies, 5*(1), 81–91. https://doi.org/10.62718/vmca.pr-ijetas.5.1.SC-0625-001

Sloan, T., Daane, C. J., & Giesen, J. (2002). Mathematics anxiety and learning styles: What is the relationship in elementary preservice teachers? *School Science and Mathematics, 102*(2), 84–87. https://doi.org/10.1111/j.1949-8594.2002.tb17897.x

Trujillo, K., & Hadfield, O. D. (1999). Tracing the roots of mathematics anxiety through in-depth interviews with preservice elementary teachers. *College Student Journal, 33*, 219–224. https://www.semanticscholar.org/paper/TRACING-THE-ROOTS-OF-MATHEMATICS-ANXIETY-THROUGH-Trujillo-Hadfield/2944ec25f8c597306caf341bdc7f3be274d1a0eb

Vale, I., & Barbosa, A. (2023). Active learning strategies for an effective mathematics teaching and learning. *European Journal of Science and Mathematics Education, 11*(3), 573–588. https://doi.org/10.30935/scimath/13135

Wang, Y., & Tambi, F. B. (2024). Correlation between students' perceived parental expectations and students' academic engagement: The intermediary effect of academic self-efficacy. *Journal of Pedagogical Research, 8*(3), 16–33. https://doi.org/10.33902/JPR.202427683

Yau, P. S., Cho, Y., Shane, J., et al. (2022). Parenting and adolescents' academic achievement: The mediating role of goal engagement and disengagement. *Journal of Child and Family Studies, 31*, 897–909. https://doi.org/10.1007/s10826-021-02007-0

Ying, L., Zhou, H., Yu, S., Chen, C., Jia, X., Wang, Y., & Lin, C. (2018). Parent-child communication and self-esteem mediate the relationship between interparental conflict and children's depressive symptoms. *Child: Care, Health and Development, 44*(6), 908–915. https://doi.org/10.1111/cch.12610