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Mediating Effect of The Child Executive Functioning on the Correlation Between Self-Efficacy and Mental Health among Caregivers of Children With Special Needs

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Abstract — Poor mental health among caregivers of children with special needs remains a significant concern. This study employed a predictive research design to examine the mediating effect of child executive functioning on the relationship between self-efficacy and mental health among these caregivers. Data were collected from 100 respondents selected through proportionate stratified random sampling and analyzed using mediation analysis. The results revealed that child executive functioning fully and substantially mediates the relationship between self-efficacy and caregivers' mental health, thereby supporting Self-Efficacy Theory. Specifically, self-efficacy influences mental health indirectly through its effect on child executive functioning. It is recommended that future research explore additional variables and incorporate qualitative approaches to provide deeper insights into the mechanisms underlying caregiver mental health. Moreover, schools are encouraged to implement programs that strengthen child executive functioning as a means of enhancing caregiver well-being.

Keywords: Caregivers of children with special needs, correlation between self-efficacy, mediating effect of the child executive functioning, mental health,

I. INTRODUCTION

Poor mental health among caregivers of children with special needs has emerged as a critical global concern. Caregivers frequently experience elevated psychological distress, including stress, anxiety, and emotional burden, with global evidence highlighting persistent mental health challenges associated with caregiving (Cheng & Lai, 2023), underscoring the complex psychological demands of caregiving and the need for sustained attention at the global level. Cross-national research further documents these challenges in diverse contexts. In Australia, caregivers experience heightened psychological distress and mental health concerns (C. Chen et al., 2023). In China, similar mental health challenges are evident among caregivers (Wu et al., 2025), while in Malaysia, caregivers of children with special needs exhibit elevated stress levels (Rahman et al., 2023). These findings highlight that caregiver mental health remains a pressing issue across varied socio-cultural settings. Within the Philippine context, mental health challenges among caregivers of children with special needs are also increasingly recognized. Local evidence suggests that caregivers frequently experience stress, anxiety, and emotional strain as they navigate the demands of caregiving (Mariano & Bernabe, 2021; Cordero, 2026), emphasizing the need to examine and address caregiver mental health in the local setting.

Investigating the mental health challenges faced by caregivers of children with special needs contributes to understanding both caregiver well-being and child development (Honda et al., 2023). The study provides insights to help education professionals develop appropriate support services and interventions tailored to parental needs. Furthermore, it enriches the literature on parental mental health within the special-needs context. It aligns with the Philippine education agenda, particularly the Department of Education's commitment to inclusive and equitable quality education for all learners. At the institutional level, this study supports Holy Cross of Davao College's mission by promoting inclusive education, evidence-based practices, and community engagement. It also contributes to achieving the United Nations' 2030 Sustainable Development Goals, particularly Good Health and Well-being (SDG 3) and Reduced Inequalities (SDG 10).

This study determined the mediating effect of child executive functioning on the relationship between self-efficacy and mental health among caregivers of children with special needs. Specifically, it aimed to describe the levels of child executive functioning in terms of

emotional self-control, initiative and planning, working memory, inhibition, and spatial organization; self-efficacy in terms of knowledge, ability, and outcome expectancy; and mental health status in terms of stress, anxiety, and depression. It also examined the significant relationships among child executive functioning, self-efficacy, and mental health status, and determined whether the direct effect of self-efficacy on mental health status, controlling for child executive functioning. Lastly, it determined the significance of the indirect effect of self-efficacy on mental health status through child executive functioning. This study was based on Albert Bandura's 1977 theory of self-efficacy.

The study adhered to established ethical standards. The Department of Education, Division of Davao City, granted permission, and the Holy Cross of Davao College – Society for Moral Integrity and Legal Ethics (HCDC-SMILE) approved the study. The study obtained informed consent from all participants, ensuring voluntary participation. Secure data storage ensured confidentiality, and the study used the data solely for research purposes. The study upheld participants' respect and dignity throughout the process.

II. METHODOLOGY

This study employed a predictive research design, which focuses on forecasting future outcomes based on existing data and relationships among variables, utilizing statistical models to determine likely events (Gonzalez-Nucamendi et al., 2023; van Witteloostuijn et al., 2022). Predictive design is appropriate when measurable predictors are available, sufficient historical data exist, and there is a need for informed decision-making or early intervention. Its advantages include enhancing decision-making, identifying key influencing factors, improving accuracy through data-driven methods, and enabling early risk detection (Almalawi et al., 2024; Dixon et al., 2024).

The study took place in a public elementary school district within the Division of Davao City, where all seven schools implement the Special Education (SPED) program. This division, as one of Mindanao's key educational centers, supports inclusive education through structured SPED

services. The locale is ideal for examining caregivers of children with special needs, as it ensures access to participants actively engaged in these programs.

The study involved 100 respondents drawn from caregivers, specifically parents of children enrolled in the SPED program in the selected district during the 2025–2026 school year. This sample size was considered sufficient for the purposes of the analysis and feasible within the scope of the study.

Participants were selected using proportionate stratified random sampling, which divides the population into subgroups (strata) and selects samples from each group in proportion to its size. This method ensures balanced representation, reduces bias, increases precision, and produces more stable statistical estimates, such as regression beta (β) coefficients (Ahmed, 2024). Furthermore, it also ensures that all schools in the district are represented, thereby improving the accuracy and generalizability of the results (Makwana et al., 2023).

The study employed descriptive, correlational, and mediation analyses. Descriptive analysis summarizes data using measures such as mean and standard deviation, describing central tendency and variability. It provides a clear overview of variables, identifies patterns, and describes trends without testing causality (Mishra et al., 2022; Kotronoulas et al., 2023).

Correlation analysis examines the strength and direction of relationships between variables, commonly using Pearson's r, which ranges from -1 to +1. It identifies associations without implying causation and informs predictive or inferential analyses (Janse et al., 2021; Wisniewski, 2024).

Mediation analysis evaluates how an independent variable affects a dependent variable through a mediator, often using beta (β) coefficients to quantify direct and indirect effects. It uncovers mechanisms underlying observed relationships, providing insights for theoretical models and interventions (Hayes, 2022; Zhao et al., 2021).

The following table contains the range of means, descriptive level, and interpretation of each variable. Specifically, it measures the descriptive levels of child executive functioning, parental self-efficacy, and mental health status:

Range of Means	Description	Child Executive Functioning	Parental Self-Efficacy	Parent's Mental Health Status
3.26 – 4.00	Very High	Demonstrates very frequently	Self-efficacy is very good	Severe stress/anxiety/ depression
2.5 – 3.25	High	Demonstrates frequently	Self-efficacy is good	Bordering severe stress/anxiety/ depression
1.75 – 2.49	Low	Demonstrates sometimes	Self-efficacy is low	Moderate stress/anxiety/ depression
1.0-1.79	Very Low	Rarely or never demonstrates	Self-efficacy is very poor	Mild stress/anxiety/ depression

The following is the Standard Deviation Value Ranges and Interpretation.

SD Value Range	Interpretation
0.00 – 0.50	Very low variability/ responses are very consistent
0.51 – 1.00	Low variability/ responses are relatively consistent
1.01 – 1.50	Moderate variability/ responses show some differences
1.51 – 2.00	High variability/ responses vary significantly
Above 2.00	Very high variability/ responses are highly dispersed

The study used a standard descriptive guide for interpreting the Pearson r-value based on Guildford (1956). The study applied the following:

Computed r	Descriptive Interpretation
+/- 1.00	Perfect Correlation
Between +/- 0.75 - +/- 0.99	High Correlation
Between +/- 0.51 - +/- 0.74	Moderately high correlation
Between +/- 0.31 - +/- 0.50	Moderately low correlation
Between +/- 0.01 - +/- 0.30	Low correlation
0.00	No correlation

The standard measure for the interpretation of the strength of the mediation is as follows:

Proportion Mediated	Interpretation
< 0.20	Weak Mediation
0.20 – 0.50	Moderate Mediation
> 0.50	Strong Mediation

III. RESULTS

Table 1 presents the descriptive statistics of the study variables, namely child executive functioning (emotional self-control, initiative and planning, working memory, inhibition, and spatial organization), parental self-efficacy (knowledge, ability, and outcome expectancy), and

mental health status (depression, anxiety, and stress). The table also includes the sample size, mean, standard deviation, and descriptive level for each variable.

TABLE 1
DESCRIPTIVE TABLE

Variables	N	Standard Deviation	Mean	Descriptive Level
Child's Executive Functioning	**100**	**0.38**	**2.41**	**Low**
Emotional Self-control		*0.45*	*2.19*	*Low*
Initiative and Planning		*0.57*	*2.46*	*Low*
Working Memory		*0.73*	*2.19*	*Low*
Inhibition		*0.70*	*2.58*	*High*
Spatial Organization		*0.57*	*2.64*	*High*
Self-efficacy	**100**	**0.40**	**3.44**	***High***
Knowledge		*0.50*	*3.40*	*High*
Ability		*0.45*	*3.27*	*High*
Outcome Expectancy		*0.41*	*3.44*	*High*
Mental Health Status	**100**	**0.40**	**1.90**	***Low***
Depression		*0.47*	*1.52*	*Very Low*
Anxiety		*0.48*	*1.47*	*Very Low*
Stress		*0.49*	*1.76*	*Very Low*

The Child Executive Functioning variable had a mean of 2.41, indicating a low level and suggesting that the respondent's children sometimes demonstrate executive functioning skills. Among its indicators, three fell into the low category and the other two into the high category. The standard deviation of 0.38 indicates very low variability and highly consistent responses.

Parental self-efficacy had a mean of 3.44, indicating that the parents' self-efficacy is generally strong and classified as very high. Two indicators were very high, and one was high. The standard deviation of 0.40 indicates very low variability, reflecting consistency across respondents.

Mental health status had a mean of 1.90, classified as low, suggesting moderate experiences of stress, anxiety, and depression among respondents. All indicators showed very low levels. The standard deviation of 0.40 indicates very low variability, implying consistent responses.

Table 2 presents the correlation analysis between Child Executive Functioning, Self-Efficacy, and Mental Health Status, including r-values, p-values, hypothesis decisions, and interpretations.

TABLE 2
CORRELATION TABLE (N = 100)

Variables	Mental Health Status			
	r-value	p-value	Decision on *H0*	Interpretation
Child's Executive Functioning	0.41	<.001	Reject ***H0***	Significant
Self-efficacy	0.13	0.17	Failed to Reject ***H0***	Not Significant

Level of Significance: 0.05
Decision Rule: Reject H_0 if $p < 0.05$

Child Executive Functioning showed a moderate and statistically significant correlation with Mental Health Status ($r = 0.41$, $p < .001$), indicating that improvements in executive functioning are associated with better mental health outcomes. In contrast, Self-Efficacy showed a low, non-significant correlation with Mental Health Status ($r = 0.13$, $p = 0.17$), suggesting minimal association between the two variables.

Table 3 presents the mediation analysis, including direct, indirect, and total effects of Self-Efficacy on Mental Health Status through Child Executive Functioning.

TABLE 3
MEDIATION ANALYSIS (N = 100)

Label	Path / Effect	Estimate (B)	SE	Z-value	p-value	Decision on H_0	Interpretation
A	Self-efficacy → Child's Executive Functioning	0.30	0.09	3.02	.003	Reject H_0	Significant
B	Child's Executive Functioning → Mental Health Status	0.37	0.10	3.62	<.001	Reject H_0	Significant
c'	Self-efficacy → Mental Health Status (Direct Effect)	0.01	0.09	0.09	0.92	Failed to Reject H_0	Not Significant
a × b	Indirect Effect (Mediation)	0.11	0.05	2.08	0.03	Reject H_0	Significant
c (Total Effect)	Self-efficacy→ Mental Health Status (Total)	0.12	0.10	1.21	0.22	Failed to Reject H_0	Not Significant

Level of Significance: 0.05
Decision Rule: Reject H_0 if $p < 0.05$
% Mediation: Direct – 7.29%; Indirect – 92.71%

The analysis indicates that the direct effect of Self-Efficacy on Mental Health Status, controlling for Child Executive Functioning, was not significant (B = 0.01, p = 0.92). The indirect effect of Self-Efficacy on Mental Health Status through Child Executive Functioning was significant (B = 0.11, p = 0.03), suggesting that Child Executive Functioning fully mediates this relationship. The total effect of Self-Efficacy on Mental Health Status was also non-significant (B = 0.12, p = 0.22).

IV. SUMMARY OF FINDINGS

Based on statistical results, the study found that:

1. Child Executive Functioning significantly correlates with Mental Health Status.
2. Self-Efficacy does not significantly correlate with Mental Health Status.
3. The direct effect of Self-Efficacy on Mental Health Status, controlling for Child Executive Functioning, is not significant.
4. The indirect effect of Self-Efficacy on Mental Health Status through Child Executive Functioning is significant.
5. The total effect of Self-Efficacy on Mental Health Status is not significant.
6. Child Executive Functioning fully mediates the relationship between caregiver Self-Efficacy and Mental Health Status.

V. DISCUSSIONS

This chapter presents a discussion of the results from the correlational and mediation analyses. It highlights how the findings support and extend previous research. This chapter also presents conclusions and recommendations based on the results.

Child Executive Functioning and Mental Health Status are Correlated

The findings of this study indicate a significant correlation between a child's executive functioning and caregivers' mental health status. This result aligns with the study of Soltani and Esbensen (2024), which reported that children's executive functioning, particularly in emotional and behavioral regulation, is significantly associated with caregivers' psychological outcomes. Difficulties in executive functioning, therefore, contribute to negative mental health experiences among parents. Furthermore, the findings corroborate the work of Dominguez Ortega et al. (2026), who observed that deficits in executive functioning were associated with higher levels of depression, anxiety, and caregiver strain, highlighting the strong connection between child executive functioning and mental health outcomes.

However, the current results differ from those of Qian et al. (2024), who reported that executive functioning was not directly associated with caregiver mental health but operated through indirect pathways. This discrepancy may be due to differences in context: Qian et al. examined general family contexts, whereas the current study focused specifically on caregivers of children with special needs.

Child Executive Functioning fully mediates the correlation between Self-Efficacy and Mental Health Status

This study found that child executive functioning fully mediates the relationship between parental self-efficacy and mental health status. This finding is consistent with Guo et al. (2025), who reported that self-efficacy indirectly affects caregivers' mental health outcomes through caregiver distress, demonstrating that self-efficacy operates primarily through mediating pathways rather than direct effects. Similarly, Swain et al. (2021) found that improvements in a child's executive functioning are linked to reduced caregiver psychological distress, further supporting the current results.

In contrast, Hu et al. (2024) reported that executive functioning only partially mediated the relationship between psychological factors and depression, with both direct and indirect effects remaining significant. Differences in study context may account for this discrepancy, as Hu et al.

conducted their study in China. In contrast, the present study reflects the Philippine caregiving context, making the current findings particularly relevant locally.

CONCLUSION

Based on the findings, it is concluded that child executive functioning strongly (91.67%) and fully mediates the relationship between parental self-efficacy and mental health among caregivers of children with special needs. This conclusion supports the Self-Efficacy Theory, which posits that self-efficacy, the belief in one's ability to perform a task, influences behavior, motivation, and persistence, thereby shaping cognitive processes that ultimately impact well-being.

RECOMMENDATIONS

Based on the study's conclusions, the study presents the following recommendations:

1. Investigate additional variables not covered in this study to account for the remaining 8.33% variance in the mediation model.
2. Conduct qualitative studies to explore emerging themes that may serve as potential mediators. Identified sub-themes may be used as indicators of these mediating factors.
3. Schools and educational programs should focus on strengthening and promoting child executive functioning, which may, in turn, enhance caregiver psychological well-being.

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