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Effects of stress and self-efficacy on quality of life of mothers with autistic children: Covariance-Based Structural Equation Modeling (CB-SEM) approach

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Abstract

Background: Mothers who have children with autism encounter significant difficulties in caring for their autistic youngsters, leading to higher stress levels and a reduced overall quality of life. External or internal factors can cause and respond to stress, affecting an individual's physical, psychological, and emotional health. Thus, it is crucial to examine the quality of life of mothers with autistic children.

Objectives: This study aimed to investigate the relationships between stress, self-efficacy, and quality of life (QoL) in mothers of children with autism.

Methods: A cross-sectional study design was used. Self-administered questionnaires were distributed from October to November 2019 to mothers with autistic children using cluster sampling techniques to capture their demographics and perceptions of stress, self-efficacy, and QoL. The data analysis was performed using covariance-based structural equation modeling (CB-SEM).

Results: Of the 290 questionnaires distributed, 238 (response rate of 82%) sets were returned, but only 181 questionnaires were usable for further analysis. The findings demonstrated a notable impact of stress and self-efficacy on quality of life and an adverse effect of stress on self-efficacy. Self-efficacy serves as an intermediary in the relationship between stress and quality of life.

Conclusion: In general, mothers of autistic children typically face moderate stress levels, but they have low levels of self-efficacy and quality of life. Mothers of children with autism need assistance and support from healthcare professionals, such as doctors, nurses, and psychiatrists, so that they can bear the challenges of raising children with special needs and enjoy a higher standard of living with less emotional and physical strain.

Keywords

autism spectrum disorder; parenting stress; quality of life; self-efficacy; child; CB-SEM

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Background

Autism is a complex disorder that impacts speech, interpersonal relationships, and learning capacity (National Institute of Mental Health, 2024). According to Sarris (2017), a child diagnosed with autism is often associated with behavioral problems such as being noisy (screaming), touching and hitting people, being restless, and being inattentive. This illness affects a child's daily living activities. Parents with autistic children encounter significant difficulties in their daily activities as they must make multiple adjustments within their household and social engagements. Their daily lives are often filled with structured routines requiring much patience, family skills, and ability. The family members of the child, particularly the parents, need to adapt and confront the challenges of raising an autistic child (Sarris, 2017).

Autistic children are characterized by their inappropriate laughter, echolalia, lack of fear of hazards, acting deaf, making strange eye contact, inappropriate attachment to objects, and weeping tantrums. This illness is not affected by a particular race, educational background, socio-economic status, or lifestyle. According to reports, there are approximately four boys for every girl who has been diagnosed with autism (Fombonne, 2009; Maenner, 2021). A recently published meta-analysis of a census survey discovered that the ratio of boys to girls is approximately three boys for every girl (Loomes et al., 2017). Coping with autistic children on a daily basis may be daunting and frustrating. Providing care for a child with

multiple disabilities, such as autism, has been related to higher stress levels and reduced overall quality of life. External or internal factors can cause and respond to stress, affecting an individual's physical, psychological, and emotional health. It is crucial to examine the quality of life of mothers with autistic children in Malaysia. Thus, this study investigated how mothers with an autistic child cope with their daily lives.

Wang et al. (2022) performed meta-analytic structural equation modeling to examine how stress levels of parents mediate the association between social assistance and the quality of life in parents with autistic children. They discovered a noteworthy, partially mediated impact of stress levels on the association between social assistance and quality of life. An analysis of the subgroup at the beginning of the study showed that social assistance, parent duty, and a child's age influenced the association between social assistance and the stress levels of a parent. The emphasis on quality of life influenced the association between social assistance and quality of life. In Western culture, the stress level of parents had a notably more influential impact on quality of life, whereas social assistance had a bigger effect on quality of life in Eastern culture.

Meanwhile, Self-efficacy pertains to the perception of having command over unfamiliar or challenging circumstances or obstacles through one's own capable actions. Persons with high self-efficacy are inclined to have ambitious goals, exert greater effort to achieve them, and have a stronger belief in their own capabilities (Warner & Schwarzer, 2020). In another study, Rosenblum-Fishman (2013) investigated the environmental elements associated with a mother's self-efficacy. They discovered that perceived stigma, child-related behaviors, and social support have an impact on maternal self-efficacy. Stress is a mediator between child problem behaviors and a mother's self-efficacy, along with the relationship between social assistance and a mother's self-efficacy.

A person's quality of life (QoL) is a person's personal assessment of their daily activities, taking into account their values, beliefs, and practices in light of their aspirations, worries, and expectations (Testa & Simonson, 1996). The mind and body are both encompassed in the QoL. The perceived QoL provides essential information for strategic interventions to improve patients' lifestyles (Daundasekara et al., 2020). Previous research found a negative relationship between parental self-efficacy and stress (Burnham, 2011) and a direct correlation with QoL (Santurri, 2012). In addition, Santurri (2012) found evidence suggesting that self-efficacy partially mediated the association between the level of stress and QoL. Furthermore, the age, gender, and severity of autism spectrum disorder (ASD) symptoms among kids had a notable influence on the stress level and psychological health of their parents (Alhuzimi, 2021).

Several studies found that mothers who have autistic children experience greater levels of stress, anxiety, and depression (Al-Farsi et al., 2016; Li et al., 2022; Miniarikova et al., 2022). According to several studies, parents of kids with ASD have a lower QoL compared to parents of kids with no ASD (Turnage & Conner, 2022; Vasilopoulou & Nisbet, 2016; Vernhet et al., 2022). Thus, our study aimed to ascertain the impact of stress and self-efficacy on the quality of life (QoL) experienced by mothers who have children with autism. The inquiry also examines whether self-efficacy mediates the correlation between maternal stress and quality of life. The primary investigations explored in this manuscript are as follows: to what degree does maternal stress impact self-efficacy and quality of life? This inquiry is the guiding focus for our investigation into the complex interplay between parenting stress, individual self-efficacy, and overall quality of life.

The theoretical framework established and proposed for this study based on past research is shown in **Figure 1**. Mothers' quality of life (QoL), self-efficacy, and maternal stress are the key results of this study. The maternal stress defined as experienced by mothers with autistic children is a significant issue that arises from controlling their children's behaviors, coping with societal stigma, and conducting everyday routines. Self-efficacy is a mother's confidence in their capacity to complete tasks and deal with their autistic children. The QoL for mothers with autistic children includes their holistic well-being, contentment, and sense of accomplishment across several domains as they attend to their child's needs.

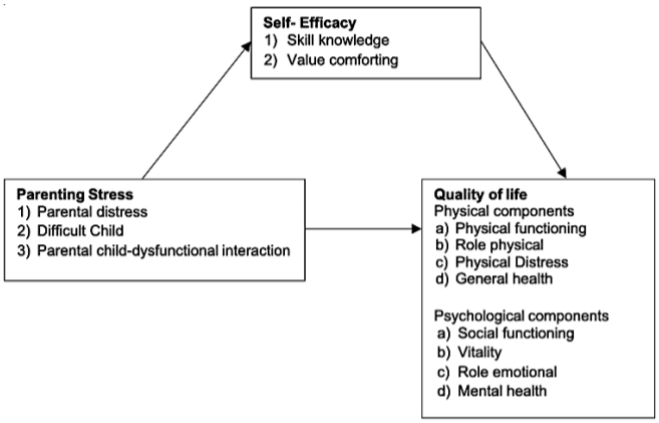

Figure 1 The conceptual framework of stress and self-efficacy on quality of life of mothers with autistic children

The first hypothesis proposes that maternal stress has an impact on the quality of life experienced by mothers. The second hypothesis suggests that the stress level also influences mothers' self-efficacy. The third hypothesis proposes that self-efficacy directly impacts the QoL of mothers. Finally, according to the fourth hypothesis, self-efficacy mediates a link between maternal stress and their perceived quality of life.

Methods

Study Design

This study employed a cross-sectional design at the National Autism Society of Malaysia (NASOM) facilities located in West Malaysia.

Samples/Participants

An interview was conducted with the NASOM manager to obtain information on the center's activities, the person in charge, and the procedure to get the sample respondents. The probability sampling technique was used to select target respondents to reduce bias and to help minimize the confounding effect. Introducing covariance in the structural equation modeling could reduce the confounding effect. In multivariate approaches, a rule of thumb suggests allocating five or ten data points to each explanatory variable,

respectively, based on a 5:1 or 10:1 ratio (Hair et al., 2010). At least 100 samples are necessary for a structural model comprising at most five constructs, each of which has at least three items and has a communality of 0.6 or greater (Hair et al., 2010). The maximum number of items for the stress levels was 33, and three constructs were present.

The target respondents were mothers with autistic children registered with NASOM. This study targets a sample size of 200 respondents. The target respondents were selected using cluster sampling techniques, where 10 clusters (NASOM branches) were chosen randomly out of 19 clusters (NASOM branches). The selected NASOM branches are Nasom Klang, Nasom Taman OUG, Nasom Butterworth, Nasom Kedah, Nasom Seremban, Nasom Muar, Nasom Segamat, Nasom Ipoh, Nasom Kuantan, and Nasom Kelantan. Respondents to this survey will include all mothers with autistic children registered in the ten selected branches.

Instruments

The instruments comprise four sections: 1) demographic (age, religion, race, household income, and marital status), 2) the Parenting Stress Index, 3) the Parenting Sense of Competence Scale instruments, and 4) Quality of Life.

The Parenting Stress Index (PSI), developed by Abidin (1995), was used to measure parental stress. This instrument has 33 items and is a shorter version of the original PSI with 120 items. The instrument used a five-point Likert scale ranging from 1 (strongly agree) to 5 (strongly disagree). PSI subscales are Parental Distress, Difficult Child, and Parent-Child Dysfunctional Interaction. Reitman et al. (2002) conducted a study to evaluate the psychometric features of the Parenting Stress Index-Short Form. The study involved a group of 196 mothers who had preschool-age children. According to Rahlin et al. (2019), internal reliability values (i.e., Cronbach's alpha) above 0.8 indicate that the constructs have great consistency. The Cronbach's alpha values for parental distress (0.880), parent-child Interaction (0.880), and difficult child (0.890) in this study were above the threshold of 0.7, indicating strong reliability. The overall stress score also demonstrated high internal consistency (0.950).

The Parenting Sense of Competence Scale (PSOC) was used to answer questions about self-competency in raising and caring for an autistic child. The PSOC consists of 17 items measuring a mother's perceived efficacy and satisfaction. The PSOC has two subscales: skills, knowledge, and value comfort. The response was evaluated using a scale of six Likert points, ranging from 1 (strongly agree) to 6 (strongly disagree). The internal consistency for the value comforting scale (0.82), skills knowledge scale (0.70), and test-retest reliability coefficients (0.82) were above 0.7 (Gibaud-Wallston & Wandersmann, 1978). Ohan et al. (2000) revealed that the perceived difficulties of parents with their infant, the level of social assistance they receive, and their mental health had an impact on the scores of Parenting Sense of Competence (PSOC).

The SF-12 questionnaire was utilized to evaluate the quality of life (QoL) of mothers with autistic children. The SF-12 is an edited version of the SF 36 Health Survey that aims to replicate the scores for the Physical Component Summary (PCS) and Mental Component Summary (MCS). This health survey comprises 12 items derived from the SF 36 Health Survey (Version 1). Previous research has shown that the reliability of PCS and MCS, as determined by a test-retest analysis, was 0.890 and 0.760, respectively (Resnick & Parker, 2001; Ware et al., 1996).

Data Collection

Data were collected using three well-established questionnaires: the Parenting Stress Index (PSI) (Abidin, 1995), the Parenting Sense of Competence Scale (PSOC) (Gibaud-Wallston & Wandersmann, 1978), and the 12-item Short Form Survey (Ware et al., 1996). The questionnaire was presented in both English and Malay to accommodate individuals who are proficient in either language. Two NASOM officers and an academician from Universiti Teknologi MARA checked the questionnaire for content validity. The pilot study involved 50 mothers at the NASOM Penang and Kedah branches. Once the pilot survey's dependability was established and confirmed, the questionnaires were handed to the mothers at NASOM facilities with the aid of NASOM personnel during their children's visits. These questionnaires were then collected by NASOM personnel from the mothers upon retrieving their children from the facility. The data collection took about a month, starting in October and ending in November 2019, with the assistance of NASOM officers.

Data Analysis

The data analysis was performed by utilizing covariance-based structural equation modeling (CB-SEM) as it was proven to have a better estimation compared with partial least square structural equation modeling (PLS-SEM) (Afthanorhan et al., 2020; Aimran et al., 2017). Baron and Kenny (1986) developed the causal stages technique, the predominant approach for examining mediation. However, this method has been criticized for underperforming compared to other approaches (Hayes, 2009; Zhao et al., 2010). This study used bootstrapping to examine if self-efficacy is a mediator in the association between maternal stress and quality of life. Efron (1992) developed bootstrapping, a nonparametric resampling procedure. A nonparametric approach is highly recommended for small sample sizes due to its lack of dependency on assumptions of normality. Zhao et al. (2010) recommended the bootstrap test of the indirect effect (ab). The mediation analysis tests the following:

1) Regress *X* on *Y* (there must be a substantial association between X and Y; that is, coefficient c in equation (1) must be significant).
2) Regress *X* on *M* (there must exist a substantial association between *X* and mediator; that is, coefficient *a* in equation (2) must be significant).
3) Regress *X* and *M* on *Y* and obtain equation (3).

$$Y = i_1 + cX \quad (1)$$

$$M = i_2 + aX \quad (2)$$

$$Y = i_3 + c'X + bM \quad (3)$$

Where *i* is the y-intercept in the regression model and *a*, *b*, *c*, and *c'* are standardized regression coefficients.

Mediation requires a substantial association between the independent variable (X) and the mediator variable (M), as well as between the mediator variable (M) and the dependent variable (Y). Based on Baron and Kenny's method, if *c'* (the direct effect) is not significant in equation (3), *M* is a full mediator, and a partial mediator if *c'* is significant but *c'* <*c*. The preacher-Hayes method was used to generate the bootstrap results to determine whether *ab* (indirect effect) is significant. Bootstrap samples were used to estimate the 95% confidence interval for the indirect effect, *ab*. The 95% confidence interval for the indirect impact, ab, was estimated using bootstrap samples. If zero values exist within the 95% confidence interval, it might be inferred that the indirect effect is not significant (Preacher & Hayes, 2004). This study utilized the IBM SPSS Statistics version 21 and IBM SPSS AMOS 21 for Structural Equation Modelling (SEM).

Ethical Consideration

The review board of UNITAR specialists in this particular field gave their approval to this study. By outlining the goals and methods of the research and giving participants the freedom to make their own decisions, the design of the study was created to safeguard the rights of the participants. Participants were asked to provide their agreement to participate in the study after the specifics were disclosed. Participants signed consent forms after acknowledging the research and their desire to participate. The option to leave the study at any time and without explanation was provided to participants. Nonetheless, volunteers would not suffer repercussions for choosing not to participate, and research findings would remain anonymous.

Results

A total of 290 sets of questionnaires were distributed, and 238 (82.1%) sets were returned. However, only 181 (76.1%) sets were fully completed and utilized in further analysis. **Table 1** presents some demographic information. The majority (94.5%) were married, and 35.4% were aged between 41 and 50 years. Nearly half (45.3%) of those who took the survey earn more than RM2,000. For most of them (70.7%), their husband's income was more than RM2000. The majority of the respondents were Malay (67.4%) and Muslim (69.1%). The autistic children were mostly males (74.6%) and aged between 6 and 10 years (47.5%).

Table 1 Respondents Profile (*n* = 181)

Demographic Variable	Category	Frequency	Percentage
Mother's Age	21-30 years old	15	8.3
	31-40 years old	80	44.2
	41-50 years old	64	35.4
	51 years or older	22	12.2
Religion	Islam	125	69.1
	Buddha	35	19.3
	Hindu	10	5.5
	Christian	10	5.5
	Others	1	0.6
Race	Malay	122	67.4
	China	41	22.7
	Indian	13	7.2
	Others	5	2.8
Husband Income	None	12	6.6
	Less than 500	1	0.6
	500-1000	10	5.5
	1000-2000	30	16.6
	More than 2000	128	70.7
Wife Income	None	51	28.2
	Less than 500	3	1.7
	500-1000	9	5
	1000-2000	36	19.9
	More than 2000	82	45.3
Marital Status	Marriage	171	94.5
	Widow	8	4.4
	Divorced	1	0.6
	Others	1	0.6
Child's Gender	Male	135	74.6
	Female	46	25.4
Child's Age	Under 5 years old	22	12.2
	6-10 years old	86	47.5
	11-15 years old	51	28.2
	16-20 years old	12	6.6
	21 years or older	10	5.5

Table 2 indicates that the respondents' overall parenting stress was moderate (overall mean = 3.488). The mothers seemed to have higher parental distress (mean = 3.677), a moderate level of parent-child dysfunctional interaction (mean = 3.420), and a difficult child (mean = 3.191). However, those with autistic children (mean = 2.454) reported a low parenting

sense of competence. They also had lower levels of skill knowledge (mean = 2.38) and a moderate level of value comforting (mean = 2.520). They have a low quality of life (mean = 32.81%). The score was also low for the physical (mean = 35.50%) and mental (mean = 39.44%) components.

Table 2 Descriptive statistics

Variables	Mean	Standard Deviation	Skewness	Kurtosis
Parenting Stress Index				
Overall	3.488	0.63	-0.254	-0.237
Parental Distress	3.677	0.71	-0.273	-0.432
Parent-child Dysfunctional Interaction	3.42	0.811	-0.451	-0.144
Difficult Child	3.191	0.81	0.029	-0.388
Parenting Sense of Competence				
Overall	2.454	0.733	0.53	-0.175
Skill Knowledge	2.381	1.058	0.655	-0.635
Value Comforting	2.526	0.714	0.367	-0.309
Quality of Life				
Overall	32.81	0.672	-0.805	0.459
PCS (Physical Component Summary)	35.5	0.923	-0.795	0.299
MCS (Mental Component Summary)	39.44	0.679	-0.653	0.225

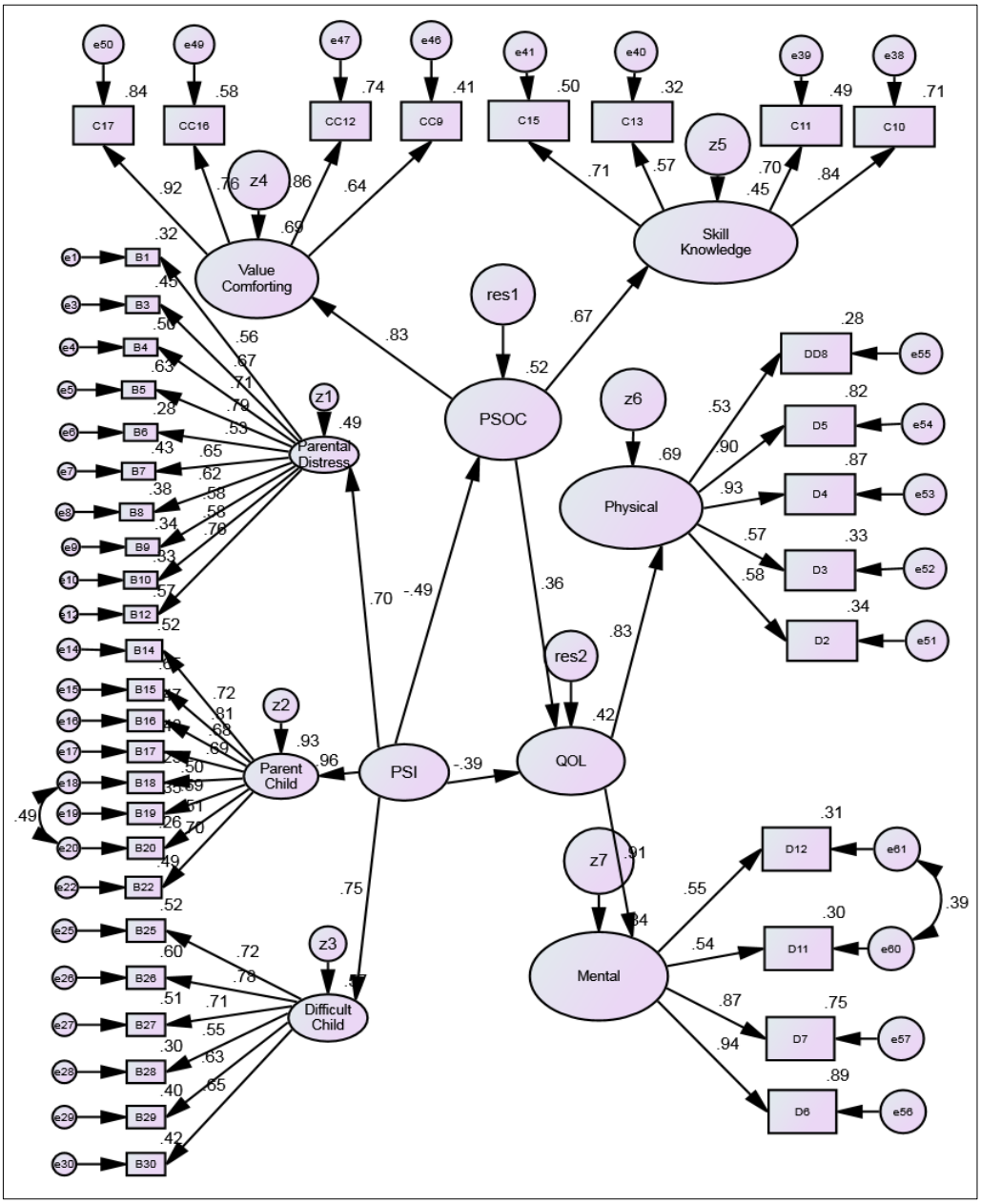

Figure 2 A full-scale SEM diagram

Figure 2 shows three latent constructs consisting of one exogenous (PSI) and two endogenous (PSOC and QoL) constructs. **Table 3** presents the items for each construct. The overall model chi-square (χ^2_{767} = 1258.346, p <0.05) was significant, and CMIN/DF = 1.641 was below the acceptable threshold of 5. **Table 4** presents the goodness-of-fit indices and the root mean squared error of approximation (RMSEA). The RMSEA had attracted much more interest as a criterion for evaluating the model's fitness for its unique relative power of combining properties. RMSEA is recognized as a very accurate fit index in covariance structure modeling. The RMSEA for the model was 0.060, less than the threshold of 0.080. The Goodness-of-Fit Index (GFI), Adjusted Goodness-of-Fit Index (AGFI), Tucker-Lewis Index (TLI), and Comparative Fit Index (CFI) are other fit indices that range from zero to one. If the fit indices value is closer to one, it indicates an adequate fit, while fit indices values above 0.95 indicate a very well-fitting model (Hulland et al., 1996). The fit indices show that only RMSEA (0.060) deviated from one, while GFI (0.873), AGFI (0.810), TLI (0.930), and CFI (0.943) were closer to one. Overall, the model had a good fit since most of the fit indices are in close proximity to one.

Table 3 Endogenous and exogenous constructs

Construct	Items
Exogenous Construct	
Parenting Stress Index (PSI):	
PSI-F1 (Parental Distress)	B1, B3, B4, B5, B6, B7, B8, B9, B10, B12
PSI-F2 (Parent-Child)	B14, B15, B16, B17, B18, B19, B20, B22
PSI-F3 (Difficult Child)	B25, B26, B27, B28, B29, B30
Endogenous Constructs	
PSOC:	
PSOC-F1 (Skill Knowledge)	C10, C11, C13, C15
PSOC-F2 (Value Comforting)	CC9, CC12, CC16, C17
Quality of Life (QoL):	
HRQoL-F1 (Physical Component Summary)	D2, D3, D4, D5, DD8
HRQoL-F2 (Mental Component Summary)	D6, D7, D11, D12

Note: CC and DD are recoded as they are negative statement

Table 4 Summary of model fit indices (structural model)

Overall Model					
CMIN/DF	**RMSEA**	**GFI**	**AGFI**	**TLI**	**CFI**
1.641	0.060	0.873	0.810	0.930	0.943

Table 5 displays the path estimates. Results show that PSI ($\hat{\beta} = -0.490$) significantly affected PSOC with a p-value less than 0.05. The mothers expressed a diminished sense of parental competence in conjunction with their elevated levels of stress. The PSI ($\hat{\beta} = -0.387$) also had a significant negative effect on QoL, with a significant value of less than 0.05. This implies that mothers with autistic children would have a poorer quality of life when they experienced higher levels of stress. Conversely, at a significant level of 0.05, PSOC ($\hat{\beta} = 0.361$) affects QoL positively. The results suggest that mothers with a higher self-efficacy would experience a better quality of life. Therefore, these findings support research hypotheses 1, 2, and 3.

Table 5 Structural equation model path estimates

Path	Estimate	*p*-value
PSOC ← PSI	-0.490	0.002
QoL ← PSOC	0.361	0.015
QoL ← PSI	-0.387	0.003

The bootstrapping test (using 200 samples) for standardized indirect effect was performed. **Table 6** shows the results. Based on the 95% bias-corrected and accelerated confidence interval, PSOC (Self-Efficacy) mediated the relationship between PSI and QoL (Standardized Coefficient for Indirect Effect = -0.177, p <0.05). The mediating impact was statistically significant at a 5% significant level since no zero-value existed within the confidence level (0.037, 0.518). Since the direct effect of the PSI on QoL was still significant (b = -0.387, p = 0.003), it could be concluded that Self-Efficacy partly mediated an association between PSI and QoL. The relationships were in the expected direction: the increase in stress is associated with decreased self-efficacy, which will then cause a decrease in quality of life. Thus, research hypothesis 4 is supported.

Table 6 Bootstrapping test for the standardized indirect effect

Bootstrapping Test of Standardized Indirect Effect	Direct Coefficient	Indirect Coefficient	95% CI for Indirect Coefficient
PSI → PSOC→ QoL	-0.387*	-0.177*	(0.037, 0.518)

Discussion

Summary of the Findings

The quality of life (QoL) of guardians is a significant concern for parents with an autistic child, especially the quality of life (QoL) of the mothers. The QoL can be affected when a guardian manages the challenges of parenting and tending to children with autism. According to Turnage and Conner (2022), parents of children with autism spectrum disorder (ASD) had a notably worse QoL compared to parents with normal children. The general well-being of the majority of guardians with autistic children is poorer compared to guardians with kids who are neurologically normal.

The second-order measurement model for PSI, PSOC, and QoL was tested using CFA. The results confirmed the underlying three components for PSI and two components for PSOC and QoL. The PSI, PSOC, and QoL have high reliability. This research shows that mothers who had children with autism in Malaysia experience a higher stress level as well as a lower self-efficacy level and QoL. The majority of the mothers surveyed have low incomes. Li and Ning (2022) discovered a correlation between lower income and increased levels of stress and depression. Conversely, women who have children with autism experience a decrease in the levels of depression and stress when their income rises.

This research also found that stress reduces self-efficacy. When mothers' stress increases, their perceived competency in parenting will decrease. This result supports the findings of Burnham (2011). Furthermore, this study discovered a notable positive association between self-efficacy and QoL. This finding was supported by Santurri (2012). A mother's QoL might improve when her perceived competence increases.

Moreover, the QoL becomes poorer as the stress level increases. This negative effect between the level of stress and QoL is supported by Santurri (2012), whose results are similar. Stress can cause anxiety and depression and, therefore, can lead to a sense of being unable to cope and inadvertently affect the QoL. This study affirms that self-efficacy serves as a partial mediator in the association between stress levels and QoL. Therefore, self-efficacy is crucial in controlling the association between stress and QoL. Mothers who experience higher levels of stress will have lower perceived competency, which leads to a lower QoL.

Strengths and Limitations of Study

This is the first study to use CB-SEM to investigate the factors determining mothers' quality of life with autistic children in a cross-sectional design. Utilizing CB-SEM may effectively mitigate the impact of confounding factors. Researchers acquire primary data with a focused purpose of directly answering the research questions or hypotheses. Additionally, primary data may guarantee precision and excellence by using rigorous methodologies, validating replies, and mitigating mistakes or biases. Furthermore, researchers utilize probability sampling methods to reduce bias. Nevertheless, this research is limited in scope and cannot include all NASOM branches in Malaysia owing to several constraints. All ten branches picked at random are located in east Malaysia. Therefore, the study's results may not be universally applicable. Future research should aim to select one NASOM branch in each state of Malaysia.

Implications of the Study

This study can benefit parents who are struggling to raise and care for their autistic children. The findings of this study will enable our society to better understand parents with autistic children. This study can provide important information to relevant organizations such as the National Autism Association of Malaysia (NASOM), the Department of Social Welfare Malaysia, and the Ministry of Women, Family, and Community Development to be able to assist with relevant training workshops and counseling for mothers with autistic children. They can also plan strategies to reduce the mother's stress and increase their self-efficacy and quality of life (QoL). In addition, this study can also provide important information to professionals such as doctors, nurses, and psychiatrists. This study's results will also benefit guardians. They may be able to cope better when they have better social support.

Conclusion

Structural models relating quality of life to self-efficacy and stress were tested using SEM. Both stress and self-efficacy have a negative effect on the overall well-being of mothers who have children with autism. Stress can reduce the quality of life, but it can be improved if mothers have higher self-efficacy. Parenting sense of competence, or self-efficacy, partially mediates the correlation between maternal stress and life quality. The relationships were in the expected direction: when stress levels rise, parents feel less competent, lowering their life quality. Mothers who have children with autism need assistance and support so that they can bear the challenges of raising children with special needs and enjoy a higher standard of living with less emotional and physical strain. Intervention programs are also needed to help improve the life quality for mothers and their autistic children. Hence, future studies could explore various approaches for further investigation and development. For instance, an intervention study could be conducted to create and implement interventions or support programs that specifically aim to improve the self-efficacy of mothers who have children with autism. Analyze the effects of these treatments on reducing maternal stress and enhancing overall life quality.

Declaration of Conflicting Interest

The authors declare no conflict of interest.

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Authors' Contributions

Conceptualization and design (YBW), Investigation and data collection (NNMN), Methodology ZJ, AA), Data analysis and interpretation (MFH), and Manuscript writing (AAK, YBW). All authors were accountable for and approved this study according to ICMJE authorship criteria.

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Data Availability

The datasets generated during and analyzed during the current study are not publicly available due to respondents' confidentiality but are available from the corresponding author upon reasonable request.

Declaration of Use of AI in Scientific Writing

The authors have declared that no generative AI and AI-assisted technologies are used in writing.

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