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# PARENTAL STRESS AND RESILIENCE: A COMPARATIVE STUDY AMONG PARENTS OF CHILDREN WITH AUTISM SPECTRUM DISORDERS (ASD)

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**Abstract**: With the rising rates of autism spectrum disorder (ASD) in Malaysia, the healthcare and educational systems may lack sufficient resources to support families of children with ASD. Over the years, interventions have primarily focused on children with ASD, often overlooking the well-being of their parents. Caring for children with ASD is challenging, parental resilience may play a crucial role in coping with stress. This study examines the relationship between resilience and parental stress among parents of children with ASD, and how this relationship varies across different parental roles. A total of 103 respondents completed an online survey, which consisted of a Brief Resilience Scale and a Parental Stress Scale. Respondents reported moderate levels of stress and moderate to high levels of resilience. Stress levels between fathers and mothers are comparable, with fathers reporting slightly higher stress than mothers. Higher resilience predicted lower parental stress, aligning with the Resiliency Model of Family Stress, Adjustment, and Adaptation. These findings expand our understanding of parental stress within this population and highlight the importance of resilience in reducing stress. This study provides a foundation for developing targeted interventions to enhance resilience and support the well-being of parents of children with ASD.

**Keywords: Parental Stress, Resilience, Autism Spectrum Disorder (ASD), Malaysia**

## INTRODUCTION

Parental stress is a significant psychological concern that affects many families globally, particularly those raising children with developmental disorders like autism spectrum disorder (ASD). ASD is a multifaceted neurodevelopmental disorder characterized by deficits in social communication and social interaction across multiple contexts, as well as restricted, repetitive patterns of behavior, interests, or activities (American Psychiatric Association, 2022). Parents of children with ASD encounter various challenges that can lead to higher stress levels, such as family socioeconomics, children's daily routines, and health problems (Chong & Ali, 2023). Prolonged exposure to elevated stress levels can negatively influence their well-being and hinder family functioning. In contrast, resilience—the ability to bounce back from adversity—improves their problem-solving skills, enabling parents to manage their stress more effectively (Zhao & Fu, 2022). Understanding the relationship between resilience and parental stress among parents of children with ASD is crucial for developing effective strategies to support and empower them.

Parents who care for children with developmental disabilities typically experience greater stress than those with typically developing children (Valicenti-McDermott et al., 2015). They must provide constant attention and accommodate their children's unique needs. This phenomenon is particularly critical for families with multiple children and is often accompanied by additional stressors. The challenges faced by children with ASD vary in severity, and parents experience greater levels of stress when their children have health problems that require professional care (Holly et al., 2019). Limited access to information and resources can further contribute to heightened stress, anxiety, and confusion, which is evident in Southeast Asia (Ilias et al., 2018). Stress levels among parents of children with ASD are often associated with children's conditions, including behavioral problems (Rodriguez et al., 2019) and functioning levels (Postorino et al., 2019). Parents report higher stress levels when their children display externalizing behaviors or greater impairments in functioning. Additionally, caring for children with special needs increases the likelihood of spouse conflict, such as ineffective arguing and dissatisfaction related to co-parenting (Brisini & Solomon, 2021). If these conflicts are not resolved, they can further heighten stress levels (Goetz et al., 2019).

Parental stress has consistently been studied across various contexts, as it significantly influences the functioning of both individuals and families. Parents who experience higher levels of stress report a higher risk of marital conflict, leading to poorer marital quality (Nana & Mamat, 2023). The birth of a child with ASD can have multiple effects on the family, including psychological, role-related, educational, and medical pressures. Dysfunctional parent-child interactions are often associated with negative psychological states in parents, such as depression and anxiety. Parents are concerned about their children's current functioning and prospects. While caregiving responsibilities demand more time and attention, parents struggle to balance various aspects of life, such as work and social interactions. Due to the neurodevelopmental impairment of children with ASD, the continuous need for medical and educational services further escalates conflicts between couples. However, the impact of these challenges can be reduced by parents' coping styles. Parents with coping strategies such as acceptance, positive reframing, informational support, and self-distraction had lower stress levels (Anuar et al., 2022). Both intrapersonal and interpersonal resources help parents to cope with challenges and improve their well-being effectively (Ilias et al., 2017), highlighting the essential aspects that could empower parents.

Differences in parental stress have yielded inconclusive findings. Some studies have identified that mothers experience significantly higher stress levels than fathers (e.g., Dijkstra-de Neijs et al., 2024). On the other hand, other studies have found no significant differences in parental stress between mothers and fathers (e.g., Bhattacharya et al., 2019), suggesting that factors beyond parental roles, such as types of caregiving tasks and coping strategies, may have a greater impact on parental stress.

Mothers are typically the primary caregivers in most families, undertaking parenting and childrearing responsibilities, which contributes to their stress levels (Lo et al., 2023). Despite increased involvement from fathers in childcare, discrepancies between fathers' and mothers' roles persist. Mothers often feel burdened by task-focused care, while fathers are more involved in recreational activities with children (McDonnell et al., 2019). These differences in parental roles may influence their respective stress levels. Additionally, fathers and mothers appear to have different protective factors that help them throughout the caregiving journey. For fathers, the endorsement of traditional family values and filial piety serves as a protective factor against

stress, which may help explain their stress levels. Fathers who strongly adhere to traditional family values perceive themselves as the head of the household, with mothers taking on the main role in childcare, allowing them to have emotional distance with caregiving tasks (Lo et al., 2023). Furthermore, fathers are generally more open to seeking support from other family members, who can share their burden in childcare. Formal parenting support, such as advice and assistance with childcare, reduces mothers' worries and helps buffer the stress caused by their caregiving challenges. Although fathers and mothers may experience parental stress differently, changes in childcare responsibilities and protective factors help reduce disparities in their stress levels. Our study hypothesizes that there are no significant differences in parental stress across various parental roles.

Parental stress is often associated with negative parenting outcomes, yet resilience can help parents navigate their caregiving roles more effectively. Resilience refers to an individual's ability to bounce back or recover from stress (Smith et al., 2008). Those with higher levels of resilience are better equipped to resist, cope with, recover from, and succeed in the face of adversity, whether minor or major (Masten & Powell, 2003). Furthermore, resilience is associated with improved well-being, including reduced stress, anxiety, depression, and burnout (Greville-Harris et al., 2024). Although emotional responses are heavily influenced by personal traits, such as neuroticism, resilience has been shown to regulate the impact of these traits. Therefore, developing resilience provides individuals with valuable personal resources to cope with and recover from adverse experiences.

Caring for children with ASD is more challenging than caring for typically developing children, highlighting the significance of equipping parents with adequate personal resources, such as resilience. When parents have higher levels of resilience, they are more likely to experience lower stress levels, which may be explained by their cumulative caregiving experiences and the need for specialized assistance (Andrés-Romero et al., 2021). As parents gain experience throughout their caregiving journey, greater resilience enables them to explore alternative strategies rather than relying heavily on external assistance. Additionally, accepting their child's condition enhances their capabilities to cope with stress. Nonetheless, resilient parents are also more likely to practice positive parenting, which leads to fewer problematic behaviors in children, ultimately reducing parental stress (Rezaeefard, 2022).

The Resiliency Model of Family Stress, Adjustment, and Adaptation focuses on how families adjust and adapt to stressful events, highlighting the importance of personal strengths (McCubbin, 2001). This model describes two phases that families go through when facing hardship: the adjustment phase and the adaptation phase. Families encounter various stressors, whether normative or non-normative, which challenge the family system and create a need for adaptation. During the adjustment phase, families attempt to maintain stability by utilizing existing resources and coping strategies. However, when adjustment strategies fail, families must strengthen their resources to adapt to the situation. Insufficient resources for adjustment and adaptation can lead to maladaptive family functioning. Resilient families are characterized by healthy communication and problem-solving, strong social support and family connectedness, as well as high spirituality (Cheatham & Fernando, 2021). These components help parents cope with potential challenges by enhancing their ability to understand problems, increasing their capacity to recognize available resources, and reinforcing a strong belief system. This model supports how resilience helps parents cope with and recover from caregiving challenges, ultimately reducing stress levels. Synthesizing both a theoretical perspective and empirical evidence, we hypothesize that resilience predicts parental stress among parents of children with ASD.

The relationship between resilience and parental stress may differ between fathers and mothers due to various factors, such as traditional gender roles and coping strategies. Mothers are typically the primary caregivers, demands of caring for children with ASD may impact other aspects of life, such as social interactions and work responsibilities (Lo et al., 2023). Balancing caregiving with these commitments is challenging and may lead to higher stress levels. On the other hand, fathers are typically perceived as the primary breadwinners of their families and may be more affected by external stressors, such as financial constraints and societal expectations tied to their role (Bowen et al., 2022). These stressors can influence their coping strategies, such as seeking social support, avoidance, or acceptance. The varying use of coping strategies between fathers and mothers may contribute to the differences in stress levels. In general, mothers frequently adopt emotion-focused coping strategies, while fathers prefer problem-focused coping strategies (Rattaz et al., 2023). The effectiveness of these strategies largely depends on the situation, and ineffective coping strategies can lead to unfavorable psychological outcomes, including heightened stress, depression, and anxiety.

In Malaysia, the number of diagnoses for ASD has increased over the past decade (CodeBlue, 2022). In 2021, about 589 children aged below 18 years were diagnosed with ASD, while those without professional services or diagnoses remain unidentified. However, Malaysia's healthcare and educational systems struggle to provide adequate services for all children with ASD (Murugesan, 2024), potentially increasing parental stress. Current interventions primarily focus on modifying children's behaviors and improving their functioning levels, often overlooking the importance of supporting and empowering parents. This study provides empirical evidence on parental stress among parents of children with ASD in Malaysia and highlights the importance of resilience in predicting stress. While maternal caregiving has received more attention, this study explores how resilience and stress relationships differ across parental roles, given the increasing paternal involvement in caregiving.

Our study examines the relationship between resilience and parental stress among parents of children with ASD, and whether the proposed relationship varies across different parental roles. Additionally, we examine whether fathers and mothers differ in their levels of perceived parental stress. This research enhances our understanding of parental stress and offers valuable insights to better support and empower parents within this population.

## METHODOLOGY

### Research Design

This quantitative cross-sectional study employed a correlational research design to examine the relationship between resilience and parental stress among parents of children with ASD. This approach enables us to capture relationships and differences at a single point in time through rigorous and objective analyses (Creswell, 2015). However, it does not establish a causal relationship between resilience and parental stress. Data were collected through an online survey, allowing respondents to respond at their convenience as they may reside in different regions. Parents of children with ASD were able to participate regardless of geographical constraints. Both parental stress and resilience were measured based on their subjective experiences.

### Respondents

The target population for this study consisted of parents of children with ASD in Malaysia. To reach this population, selected online support groups and autism centres were utilized. Respondents were chosen based on the following inclusion criteria: (1) having at least one child diagnosed with ASD, (2) being a Malaysian citizen, (3) having basic English language proficiency, and (4) willingness to participate in this study. Basic English proficiency was necessary to minimize potential biases due to misinterpretation, as the survey was conducted in English. However, this requirement may have excluded some parents, potentially impacting the representativeness of the sample.

According to recent statistics, 589 children below 18 years old in Malaysia have been diagnosed with ASD (Murugesan, 2024). A total of 103 respondents (79 females and 24 males) participated in the study. Recruitment was conducted using convenience sampling, with advertisements posted in selected online support groups and autism centres. Snowball sampling was also employed, as respondents were encouraged to share the survey with others meeting the inclusion criteria. While this approach effectively increased participation, it may have introduced biases by overrepresenting parents actively engaged in online communities.

A power analysis was conducted using G*Power to confirm the adequacy of the sample size. Assuming a medium effect size ($f^2 = 0.15$), a significance level of 0.05, and a statistical power of 0.80, the required sample size for simple regression with one predictor is 55. The current sample size of 103 exceeds this threshold, providing sufficient power to detect medium or larger effects. Practical constraints, including accessibility to respondents, also influenced the final sample size.

**Measurements**

This study utilized the English versions of the following measurements to measure perceived parental stress and resilience among respondents. These scales are widely recognized and have been validated across diverse populations.

**Parental Stress Scale (PSS)**

The 18-item Parental Stress Scale (PSS) measures the levels of stress experienced by parents, capturing both the positive and negative aspects of parenting (Berry & Jones, 1995). The positive aspect focuses on the feelings of joy, love, and fulfilment that parents experience during caregiving, while

the negative aspect measures the demands on resources and the restrictions caregiving imposes. These responsibilities can limit parents' freedom, opportunities, and social activities, contributing to stress and frustration. Respondents indicate their agreement based on a 5-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*). Items reflecting positive aspects were reverse coded before calculating the total PSS score, with higher PSS scores indicating greater levels of parental stress. The PSS demonstrated good internal consistency in this sample, with a Cronbach alpha of 0.84, supporting its suitability for this study.

**Brief Resilience Scale (BRS)**

The 6-item Brief Resilience Scale (BRS) measures respondents' perceived capacity to cope with and recover from adversity (Smith et al., 2008). Respondents rate these items using a 5-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*), indicating their levels of agreement. Items 2, 4, and 6 are negatively phrased and are reverse coded before calculating the BRS mean scores, with higher mean scores indicating greater levels of resilience. The BRS demonstrated good internal consistency in this sample, with a Cronbach alpha of 0.75, aligning with findings from previous studies (e.g., Fung, 2020), thereby supporting the suitability for this research.

**Data Collection Procedure**

Data collection commenced after receiving approval from the Ethics Review Committee which took place between September and November 2023. The advertisement was posted in selected online support groups and autism centres. All respondents were provided with a written information sheet outlining the study's objectives, potential risks and benefits, and their rights as participants. They proceeded to answer the survey questions, which consisted of the Parental Stress Scale (PSS) and Brief Resilience Scale (BRS) after giving their consent to participate.

**Data Analysis**

The data collected from the online survey were analyzed using IBM Statistical Package for Social Science (SPSS) software version 26.0. Descriptive statistics, including means and standard deviations, were calculated for both parental stress and resilience, providing an overview of the levels of stress and resilience. Differences in parental stress across different parental roles were assessed using an independent samples t-test. A linear regression analysis was employed to determine whether resilience predicts parental stress. Finally, the

relationship between resilience and parental stress was compared across different parental roles.

## RESULTS

On average, respondents reported a moderate level of parental stress ($M$ = 47.64, $SD$ = 9.94) and a moderate to moderately high level of resilience ($M$ = 3.40, $SD$ = 0.66). An independent samples t-test was conducted to compare parental stress levels between fathers and mothers. The findings revealed that fathers ($M$ = 47.71, $SD$ = 9.18) and mothers ($M$ = 47.62, $SD$ = 10.21) reported similar levels of parental stress, $t(101) = 0.04$, $p = 0.97$, $d = 0.009$. These results indicate that fathers exhibit slightly higher levels of stress compared to mothers; however, the difference is not statistically significant. Therefore, fathers and mothers can be considered to experience similar stress levels.

Table 1: Descriptive Statistics and Correlation Analysis.

| | | Mean | *SD* | 1 | 2 |
|---|---|---|---|---|---|
| Resilience | | 3.40 | 0.66 | (0.75) | |
| Parental Stress | | 47.64 | 9.94 | -0.52** | (0.84) |
| | Mother | 47.62 | 10.21 | - | - |
| | Fathers | 47.71 | 9.18 | - | - |

Note. $N$ = 103; $SD$ = standard deviation; Cronbach's alpha is shown in the diagonal line; ** $p < 0.01$.

The Pearson Correlation Coefficient revealed a negative correlation between parental stress and resilience among parents of children with ASD, $r(101) = -0.52$, $p < 0.001$, indicating that higher resilience is associated with lower levels of parental stress (refer to *Table 1*). A simple linear regression was conducted to examine whether resilience significantly predicted parental stress. The results indicated that resilience was a significant predictor of parental stress, $B = -1.30$, $t(101) = -6.11$, $p < 0.001$ (refer to *Table 2*). The overall model was significant, $F(1, 102) = 37.31$, $p < 0.001$, and explained 27% of the variance in parental stress ($R^2 = 0.27$). This suggests that higher levels of resilience are associated with lower levels of parental stress ($\beta = -0.52$).

Table 2: Regression Coefficient of Resilience on Parental Stress

| Variable | *B* | *β* | *SE* | *t* | *p* | 95% CI |
|---|---|---|---|---|---|---|
| Resilience | -1.30 | -0.52 | 0.21 | -6.11 | < 0.001 | [-1.73, -0.88] |

| | |
|---|---|
| $R^2$ | 0.27 |

Note. *SE* = standard error; CI = confidence interval

To compare how resilience predicted parental stress across fathers and mothers, separate linear regressions were conducted for each group. For fathers, resilience significantly predicted parental stress, $B = -1.57$, $t(22) = -6.04$, $p < 0.001$ (refer to *Table 3*). The overall model was significant, $F(1, 23) = 36.45$, $p < 0.001$, and explained 62% of the variance in parental stress ($R^2 = 0.62$). This indicates that higher levels of resilience are associated with lower levels of parental stress ($\beta = -0.79$).

Table 3: Regression Coefficient of Resilience on Parental Stress Among Fathers

| Variable | *B* | *β* | *SE* | *t* | *p* | 95% CI |
|---|---|---|---|---|---|---|
| Resilience | -1.57 | -0.79 | 0.26 | -6.04 | < 0.001 | [-2.11, -1.03] |
| $R^2$ | 0.62 | | | | | |

Note. *SE* = standard error; CI = confidence interval

Similarly, for mothers, resilience significantly predicted parental stress, $B = -1.19$, $t(77) = -4.28$, $p < 0.001$ (refer to *Table 4*). The overall model was significant, $F(1, 78) = 18.34$, $p < 0.001$, and explained 19% of the variance in parental stress ($R^2 = 0.19$). This indicates that higher levels of resilience are associated with lower levels of parental stress ($\beta = -0.44$).

Table 4: Regression Coefficient of Resilience on Parental Stress Among Mothers

| Variable | *B* | *β* | *SE* | *t* | *p* | 95% CI |
|---|---|---|---|---|---|---|
| Resilience | -1.19 | -0.44 | 0.28 | -4.28 | < 0.001 | [-1.74, -0.64] |
| $R^2$ | 0.19 | | | | | |

Note. *SE* = standard error; CI = confidence interval

These findings suggest that resilience is a significant predictor of parental stress in both fathers and mothers, with a slightly stronger effect observed among fathers ($\beta = -0.79$) compared to mothers ($\beta = -0.44$).

## DISCUSSION

The present study examined whether resilience predicts parental stress among parents of children with ASD in Malaysia. The findings revealed that higher levels of resilience predicted lower levels of parental stress, and this relationship has a stronger effect among fathers compared to mothers. Additionally, we found that both fathers and mothers reported similar levels of parental stress in this study. This section discusses the findings in relation to past literature, along with the limitations and recommendations for future research.

According to the findings, parents of children with ASD experienced moderate stress levels, consistent with the findings from other studies (e.g., Papadopoulos et al., 2023). Parents often worry about their children's well-being and functioning, especially after receiving the diagnosis of ASD. The demands of caregiving vary across developmental stages, and parental stress tends to persist. Parents of children with ASD generally report higher stress levels than parents of typically developing children (Valicenti-McDermott et al., 2015). However, various factors help support them and reduce stress, including effective coping strategies, strong social support, and personal resilience, which can help alleviate stress. While the challenges of caregiving are inevitable, available resources help reduce their stress.

Our findings revealed that parents of children with ASD reported moderate to high levels of resilience. Despite the challenges of caregiving, these parents remain resilient, believing in their ability to overcome difficulties. Their resilience is often influenced by perceived self-competence, acceptance, and family togetherness (Pastor-Cerezuela et al., 2020). Resilience, as a personal strength, can be developed through experience. Parents may enhance their resilience throughout the caregiving journey, with greater self-efficacy in caregiving contributing to higher levels of resilience (Scannell, 2020).

Our first hypothesis examines differences in stress levels between fathers and mothers, revealing no statistically significant differences. Both fathers and mothers reported similar stress levels, with fathers experiencing slightly higher stress than mothers. The findings suggest that factors beyond parental role may have a greater impact on stress levels. Past studies have shown that parental stress levels are more likely determined by children's conditions, including the severity of ASD symptoms, functioning levels, and the presence of internalizing and externalizing behaviors (Operto et al., 2021). Although

fathers and mothers have different responsibilities and stressors, their experiences of stress are comparable (e.g., Lo et al., 2023; McDonnell et al., 2019). Mothers often feel pressured by caregiving tasks, while fathers encounter external stressors, like financial matters. Additionally, fathers and mothers employ different coping strategies, with mothers more likely to adopt emotion-focused coping strategies, like sharing with others. Therefore, it could contribute to the perception that mothers experience higher stress levels than fathers.

Our second hypothesis examining the relationship between resilience and parental stress, provides further evidence demonstrating higher resilience predicts lower parental stress, supporting the Resiliency Model of Family Stress, Adjustment, and Adaptation. When children receive an ASD diagnosis, challenges beyond parents' coping capabilities contribute to higher stress levels. Without adequate resources, parents struggle to adjust and adapt leading to family crises. Conversely, resilient parents, through their positive traits and resources, enable them to navigate through adversity and adapt to new conditions (Cheatham & Fernando, 2021). Additionally, resilient parents exhibit more accepting behaviors and employ positive parenting behaviors, which reduce children's problematic behaviors and be more obedient to instructions, in turn, reduces their stress in caregiving (Rezaeefard, 2022). However, it is worth noting that parents with lower resilience experience greater stress. Resilience protects parents through various ways, such as the use of coping strategies (Ghanouni & Eves, 2023). Ineffective coping strategies can exacerbate the experience of stress. While our study focuses on the relationship between resilience and parental stress, future research should explore underlying mechanisms.

Although resilience predicts parental stress in both fathers and mothers, the relationship demonstrated stronger in fathers, likely due to the differing roles they play. Despite fathers being more involved in caregiving, mothers remain the primary caregivers, particularly for daily emotional and physical caregiving tasks (Lo et al., 2023). These caregiving tasks vary across developmental stages and children's conditions. This constant demand can increase stress as they adapt to new challenges and are pressured to learn new strategies. Fathers, often seen as financial providers, may encounter external challenges (Bowen et al., 2022). However, their ability to cope with practical challenges contributes to lower stress levels compared to mothers. Additionally, fathers may experience more emotional distance from daily

caregiving, allowing their resilience to alleviate stress more effectively. On the other hand, parents' coping strategies play a crucial role in the differing effects of resilience. Research shows that fathers often employ problem-focused coping strategies, such as tackling challenges directly, while mothers tend to use emotion-focused coping strategies, like seeking emotional support and avoiding stressors (Rattaz et al., 2023). Although both strategies can be effective depending on the context, problem-focused strategies tend to increase fathers' self-efficacy in coping with challenges, reinforcing resilience and ultimately reducing their stress. In contrast, emotional-focused coping strategies, like avoidance or substance use, can be less effective in reducing stress, and potentially influencing well-being (Samadi, 2020).

Theoretically, our study expands the understanding of parental stress among parents of children with ASD in Malaysia, providing evidence to support the important role of resilience in predicting parents' stress levels. Furthermore, our findings highlight that the resilience-parental stress relationship has a greater effect on fathers. Future studies should further explore the underlying mechanisms to gain a better understanding.

Practically, our study provides valuable insights for developing effective interventions to empower parents of children with ASD. Since resilience predicts parental stress, community intervention programs should focus on developing resilience in parenting training. This could equip parents with essential personal strengths, enabling them to cope with challenges effectively and improve their well-being. Additionally, given that stress levels between fathers and mothers are comparable, community intervention programs should cater to the needs of both parents, to effectively reduce their stress levels.

Notably, several limitations could restrict our findings. Firstly, the study relied on self-reporting, which may introduce respondent biases that affect the authenticity of responses. Given that stress and resilience are subjective experiences, a self-report questionnaire is still the most suitable measure. Future research should employ triangulation methods to increase the validity of the findings. Secondly, the limited demographic information collected in this study restricts the generalizability of the findings. Parental stress can be influenced by various factors, such as the severity of ASD symptoms, socioeconomic status, and access to professional services. Future research should collect more demographic information to deepen the understanding of the sample and obtain a more comprehensive view.

## CONCLUSION

In conclusion, our findings highlight the role of resilience in predicting parental stress among parents of children with ASD in Malaysia. This predictive effect is particularly stronger in fathers than in mothers, suggesting that other factors may also play a role in this relationship. Additionally, both fathers and mothers reported similar stress levels, supporting that factors beyond parental roles have greater influences on parental stress. Given the important role of resilience and parents' stress levels revealed in our study, these findings provide guidelines for developing effective interventions to support and empower parents of children with ASD.

### Informed Consent Statement

All respondents have granted their consent to this study.

### Conflict of Interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

### Ethics Statement

This study was done in compliance with the ethical guidelines approved by the Ethics Review Committee from Tunku Abdul Rahman University of Management and Technology.

### Author Contributions

Trisha Kareena Kaur: Conceptualization, Formal analysis, Methodology, Writing; Anna Ong Wen Huey: Methodology, Writing; Lai Chooi Seong: Conceptualization, Methodology.

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### Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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