

Level of Depression, Anxiety, Stress, and Coping Strategies of Malay Caregivers Caring for Children with Special Needs

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ABSTRACT

Background: Caring for children with special needs can be one of a caregiver's most rewarding yet challenging experiences. It is crucial to assess the level of depression, anxiety, and stress among caregivers and their coping mechanisms. This study aims to evaluate the level of depression, anxiety, stress, and coping strategies of Malay caregivers of children with special needs.

Methods: A cross-sectional study was conducted among 210 Malay primary caregivers recruited purposively from Community-Based Rehabilitation (CBR) centres in Kuantan. A self-completion questionnaire: Depression, Anxiety and Stress Scale 21 (DASS-21) and Coping Strategies were employed. Descriptive, chi-square, and multinomial logistic regression analyses were used to analyse the data using IBM SPSS Statistics version 27.0.

Results: The findings indicated that most participants were caregivers aged between 31 and 40 years old (44.3%), had a monthly income of less than RM 3000 (53.3%), and had completed a tertiary level of education (51.0%). More than half of the caregivers had normal levels of depression, anxiety, and stress. Notably, a proportion experienced abnormal levels of depression (28.1%), anxiety (34.8%), and stress (18.1%), which may require support. Most caregivers employed a high level of coping strategies (65.4%), including positive reappraisal and escape strategies, such as praying (86.0%) and avoiding problems (40.2%). In terms of high coping levels, education proved to be a significant factor. However, results show no statistically significant association between depression level ($p=0.813$), anxiety ($p=0.251$), and stress level ($p=0.077$) with coping mechanisms among Malay caregivers.

Conclusion: The findings indicate that while many caregivers maintain stable mental health and effective coping, certain vulnerable subgroups may still require additional support. Additionally, the educational level may impact caregivers' ability to cope with their mental well-being when caring for children with special needs.

Keywords: Depression; Anxiety; Stress; Coping strategies; Caregiver; Special needs children

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INTRODUCTION

Children with special needs and children with disability are interchangeable terms that refer to children who require additional care, support, or resources beyond what is typically needed for their peers. The needs required by children with special needs pose unique and ongoing challenges, including heightened emotional, physical, and financial demands, which can significantly impact their mental health. The term 'caregivers' in this study refers specifically to Malay parents or guardians who are the primary persons responsible for the daily care of their children with special needs. Caregivers often experience elevated levels of depression, anxiety, and stress, driven by the need to manage the child's care, navigate medical and therapeutic interventions, and address societal attitudes toward disabilities (1,2). This strain is compounded in cultures where family caregiving responsibilities are deeply ingrained, as is often the case within Malay communities. Understanding the mental health impacts on Malay caregivers of special needs children is essential, given the cultural expectations surrounding caregiving, which emphasize family cohesion, patience, and resilience.

The number of registered children with special needs in Malaysia continues to grow. As of January 2023, 152,065 children with disabilities were registered with the Department of Social Welfare (3). This increase has placed additional pressure on caregivers, most of whom are family members, often caregivers, who must balance caregiving with other family, social, and occupational responsibilities. Studies have shown that caregivers of children with special needs frequently experience higher levels of depression, anxiety, and stress compared to caregivers of typically developing children, as they face greater demands in managing the child's special requirements and well-being (4).

Furthermore, coping strategies play a critical role in mitigating the effects of caregiving-related stress. Effective coping strategies can enhance caregivers' resilience and positively impact their mental health, thereby improving their ability to provide quality care. A study conducted among Iranian mothers found that the average total score of the burden of care was 95.5, resilience was 52.7, and coping styles were 92.4 (5). However, the specific coping mechanisms Malay caregivers use, influenced by cultural and religious values, must be well-documented. Culturally particular strategies, such as spiritual practices and social

support, are believed to be vital components of coping within the Malay community. However, their impact on mental health outcomes among caregivers of special needs children has yet to be fully explored.

This study examines depression, anxiety, stress, and coping strategies among Malay caregivers of special needs children to address this gap. A better understanding of these factors will contribute to the development of targeted mental health interventions and support systems tailored to the cultural and emotional needs of Malay caregivers, ultimately enhancing both caregiver well-being and the quality of care provided to children with special needs.

METHODS

Study Design and Study Population

The cross-sectional study was conducted from March to May 2024 among Malay caregivers in Kuantan, Pahang to assess the level of depression, anxiety, stress, and coping strategies of caring for children with special needs. Participants were recruited purposively from Community-Based Rehabilitation (CBR) centres. The inclusion criteria were Malay primary caregivers aged 18 years and above who cared for a child with special needs aged 0–18 years for at least 6 months. Exclusion criteria included professional caregivers, temporary caregivers, and caregivers of adult patients. Recruitment was facilitated by CBR staff who distributed study information sheets, and written informed consent was obtained from all participants. The Raosoft Sample Size Test, with a 5% margin of error, a 95% confidence interval, and a 30% drop-off rate, was used to determine the appropriate sample size for the caregivers in the research. From the calculation, the recommended sample size was 226 caregivers. This study achieved a response rate of 92%.

Study Instrument

This study used self-administered questionnaires in the Malay language, divided into three parts. Part A consisted of socio-demographic characteristics, including gender, race, age, marital status, educational level, occupational level, family income, and type of children's disability.

Part B consisted of the Depression, Anxiety, and Stress Scale 21 (DASS-21) questionnaire. This questionnaire consisted of 21 questions that combined the depression, anxiety, and stress

questionnaires. Each question was evaluated using a Likert scale with four possible outcomes that range from 0 ("Never"), 1 ("Sometimes"), 2 ("Often") and 3 ("Almost always"). Then, the total scores for each item were added to determine the DASS-21's overall score. The levels of depression, anxiety and stress were categorised into five labels, which were normal, mild, moderate, severe and extremely severe. For the level of depression, the normal level was 0-4, the mild level was 5-6, the moderate level was 7-10, the severe level was 11-13, and the extremely severe level was 14 and above. Next, for the level of anxiety, the normal level was 0-3, the mild level was 4-5, the moderate level was 6-7, the severe level was 8-9, and the extremely severe level was 10 and above. Lastly, for the stress level, the normal level was 0-7, the mild level was 8-9, the moderate level was 10-12, the severe level was 13-16, and the extremely severe level was 17 and above.

Part C covered the Coping Strategies Questionnaire, adopted by Rasoulpoor et al. (2023), which consisted of 21 questions regarding coping strategies. The total scores were based on a 4-point Likert scale from 0 ("not used") to 1 ("used somewhat"), 2 ("used quite a bit"), and 3 ("used it a lot") (5). Total scores between 0 and 21 indicated low coping, scores between 22 and 35 showed an average level, and scores above 35 indicated high coping. Coping was categorised into high, average, and low levels based on total coping scores, with high coping reflecting frequent use of adaptive strategies and low coping indicating reliance on fewer or more maladaptive strategies.

A pilot study was conducted to identify the reliability and consistency of the questionnaires. The value of Cronbach's alpha was 0.86, indicating that the questionnaire has excellent reliability. Descriptive analysis was used to analyse the sociodemographic background, level of depression, anxiety, stress, and coping strategies of the participants. In contrast, the Chi-Square and Multinomial Logistic Regression tests were used to analyse the association between the level of depression, anxiety, and stress with the level of coping strategies of the Malay caregivers with special needs children, and the association between socio-demographic characteristics and the type of child's disability with the level of coping strategies among Malay caregivers of special needs children. The *p*-value of 0.05 (2-tailed) was used to determine significance. All data were analysed using IBM SPSS Statistics version 27.

Ethical Approval

The study obtained ethical approval from the Kulliyyah of Nursing Postgraduate Research Committee (KNPGRC) and the IIUM Research Ethics Committee (IREC) (IREC 2024-149). Consent forms were distributed, and confidentiality was ensured before data collection.

RESULTS

Sociodemographic Characteristics and Type of Child's Disability of the Malay Caregivers

A total of 210 Malay caregivers of children with special needs participated in this study. Most participants were between 31 and 40 (44.3%), with smaller proportions in other age groups. Most respondents were female (84.8%) and married (93.3%). Regarding education, more than half (51.0%) had tertiary-level qualifications, while 42.9% completed secondary education. Occupationally, 62.4% of the individuals worked, and the most significant income group (53.3%) earned less than RM 3,000 monthly.

Regarding their children's disabilities, learning disabilities were the most prevalent, affecting 37.1% of the children, followed by multiple disabilities at 25.7%. Other types of disabilities, including physical, speech, and mental disabilities, were present but in smaller percentages. The smallest groups comprised caregivers of children with hearing (0.5%) and visual (1.0%) disabilities. **Table 1** provides a detailed overview of the socio-demographic characteristics of the 210 Malay caregivers of children with special needs who participated in this study, as well as the types of disabilities their children experience.

The Distribution Of Depression, Anxiety and Stress Levels Among Malay Caregivers With Special Needs Children

Table 2 presents the mental health analysis of Malay caregivers of children with special needs, revealing varying levels of depression, anxiety, and stress. The majority of Malay caregivers reported normal levels of depression (71.9%), anxiety (65.2%), and stress (81.9%). Mild cases were observed in 10.0% for depression, 13.3% for anxiety, and 7.6% for stress, while moderate cases were recorded in 13.3% for depression, 11.0% for anxiety, and 7.1% for stress.

Severe cases were less frequent, with 3.3% of Malay caregivers experiencing severe depression and anxiety and 1.9% reporting severe stress. Extremely severe cases were rare, affecting 1.4% for both depression and stress, though anxiety was slightly higher at 7.1%. Overall, these results

suggest that while most Malay caregivers exhibit good mental health, a significant portion is dealing with mild to moderate mental health challenges, with a smaller group facing severe or extremely severe difficulties.

Table 1: Sociodemographic Characteristics and Type Of Child's Disability Of The Malay Parents Who Participated In This Study (N=210)

Variables	Frequency (f)	Percentage (%)
Age		
20- 30 years old	22	10.5%
31- 40 years old	93	44.3%
41- 50 years old	62	29.5%
51- 60 years old	25	11.9%
>60 years old	8	3.8%
Gender		
Female	178	84.8%
Male	32	15.2%
Marital Status		
Married	196	9.3%
Divorced/Widowed	14	6.7%
Educational Level		
Primary Level	13	6.2%
Secondary Level	90	42.9%
Tertiary Level	107	51.0%
Occupational Level		
Working	131	62.4%
Not working/Retired	79	37.6%
Family Income		
Less than RM 3000	112	53.3%
RM 3001- RM 6000	65	31.0%
RM 6001- RM 9000	17	8.1%
More than RM 9000	16	7.6%
Type of child's disability		
Hearing	1	0.5%
Visual	2	1.0%
Speech	17	8.1%
Physical	20	9.5%
Learning	78	37.1%
Mental	4	1.9%
Multiple	54	25.7%
Others	34	16.2%

Table 2: Levels Of Depression, Anxiety and Stress among The Malay Parents with Special Needs Children Who Participated in This Study (N=210)

Levels	Depression, n (%)	Anxiety, n (%)	Stress, n (%)
Normal	151 (71.9%)	137 (65.2%)	172 (81.9%)
Mild	21 (10.0%)	28 (13.3%)	16 (7.6%)
Moderate	28 (13.3%)	23 (11.0%)	15 (7.1%)
Severe	7 (3.3%)	7 (3.3%)	4 (1.9%)
Extremely Severe	3 (1.4%)	15 (7.1%)	3 (1.4%)

The Distribution of Coping Strategies among Malay Caregivers of Children with Special Needs

The descriptive analysis of coping strategies among Malay caregivers of children with special needs revealed that the majority (65.7%) employed high levels of coping strategies, demonstrating a strong ability to manage the challenges they

encounter. Approximately 25.2% of the participants utilized an average coping strategy, while a smaller portion (9.0%) reported low levels of coping. These findings suggest that most caregivers possess effective coping mechanisms; however, a minority may benefit from additional support to further strengthen their resilience. The detailed data on the level of coping strategies among Malay caregivers were shown in **Table 3**.

Table 3: The Distribution of Coping Strategies among The Malay Parents with Special Needs Children Who Participated in This Study (N=210)

Level of coping strategies	Frequency (f)	Percentage (%)
Low	19	9.0%
Average	53	25.2%
High	138	65.7%

Further, **Table 4** presents the analysis of items measuring the coping strategies of Malay caregivers of children with special needs. In planful problem-solving, a significant portion consistently employed these approaches, with up to 42.5% always using strategies such as doubling efforts to make things work. Seeking social support was also widely practised, with nearly 30% always seeking advice from family or friends.

Regarding accepting responsibility, 41.1% consistently promised to improve in future situations. Distancing, where individuals downplay problems, was used frequently by 38.3%. Self-control, as a coping strategy, refers to the caregiver's effort to regulate emotions and maintain composure in stressful situations. Confrontive coping was less common, with only 32.2% consistently standing their ground. Lastly, positive reappraisal and escape strategies, such as praying (86.0%) and avoiding problems (40.2%), were the most commonly used coping mechanisms, highlighting caregivers' reliance on spirituality and avoidance as key coping strategies.

Association Between Sociodemographic Characteristics and the Type of Child's Disability with the Level of Coping Strategies among Malay Caregivers of Children with Special Needs

A multinomial logistic regression was performed to investigate the association between socio-demographic characteristics and the type of child's disability with the level of coping strategies among Malay caregivers of special needs children.

Table 5 presents the parameter estimates, which illustrate the relationship between socio-demographic factors (gender, age, education, and employment status) and the levels of coping strategies (low, average, high) among these caregivers. For average coping levels, employment status was significantly associated with higher coping (OR=4.722, $p=0.021$), indicating that employed caregivers are more likely to utilise average coping strategies than those with low coping levels. No significant associations were identified for gender, age, or education in this category.

In terms of high coping levels, education proved to be a significant factor. Malay caregivers with primary education (OR=0.032, $p=0.001$) and secondary education (OR=0.326, $p=0.049$) were less likely to employ high coping strategies than those with tertiary education. Additionally, employment status demonstrated a marginal association with high coping levels (OR=3.169, $p=0.075$), while gender and age did not show significant effects. Overall, employment status has a positive influence on average coping strategies, while higher education is significantly linked to enhanced coping abilities, emphasizing the importance of education and employment in strengthening coping mechanisms among these caregivers. Although initially included variables such as type of disability, marital status, and family income were excluded from multinomial regression because their p -values were >0.1 , indicating insufficient preliminary association with coping strategies. Thus, the factors of marital status, family income, and type of child's disability were omitted from the analysis at this stage.

Association Between the Level of Depression, Anxiety and Stress with the Level of Coping Strategies of the Malay Caregivers of Children with Special Needs

The Chi-square test was used to examine the association between levels of depression, anxiety, and stress (DAS) with coping strategies among Malay caregivers of children with special needs as in **Table 6**. Initially, the levels of DAS were categorised into five severity levels of depression, anxiety, and stress (normal, mild, moderate, severe, extremely severe), and were regrouped into two categories: 'No' (normal) and 'Yes' (mild to extremely severe). This regrouping addressed small number of participants in certain categories and ensured sufficient statistical power. This adjustment ensured a more meaningful analysis

and more explicit interpretation of the data.

The results show no statistically significant association between depression and the level of coping strategies ($p=0.813$). Although there is some variation in coping levels for anxiety, the Chi-square test also did not find a significant relationship ($p=0.251$). Similarly, although a more robust trend for stress was observed, particularly in the absence of stress among participants with low coping levels, the association did not reach statistical significance ($p=0.077$).

Overall, the findings suggest that there is no significant association between depression, anxiety, or stress and the level of coping strategies among the Malay caregivers with special needs children in this study.

Table 4: Items Coping Strategies Analysis of the Malay Parents (N=210)

No.	Items	Not used, n (%)	Used somewhat, n (%)	Used quite a bit, n (%)	Used it always, n (%)
Planful problem Solving					
Q1	Just concentrated on what I had to do next step	21 (9.8)	39 (18.2)	88 (41.1)	66 (30.8)
Q2	I planned an action and followed it	11 (5.1)	50 (23.4)	92 (43.0)	61 (28.5)
Q3	I knew what had to be done, so I doubled my effort to make things work	7 (3.3)	31 (14.5)	85 (39.7)	91 (42.5)
Seeking social support					
Q4	Talked to someone to find out more about the situation	11 (5.1)	59 (27.6)	83 (38.8)	61 (28.5)
Q5	Talked to someone who could do something concrete about the problem	9 (4.2)	69 (32.2)	81 (37.9)	55 (25.7)
Q6	I asked a relative or friend I respected for advice	3 (10.7)	64 (29.9)	68 (31.8)	59 (27.6)
Accepting responsibility					
Q7	Criticized or lectured myself	45 (21.0)	89 (41.6)	57 (26.6)	23 (10.7)
Q8	I promised myself that things would be different next time	8 (3.7)	29 (13.6)	89 (41.6)	88 (41.1)
Distancing					
Q9	Went on as if nothing had happened	23 (10.7)	62 (29.0)	74 (34.6)	55 (25.7)
Q10	Didn't let it get to me; refused to think too much about it	14 (6.5)	51 (23.8)	86 (40.2)	63 (29.4)
Q11	Made light of the situation; refused to get too serious about it	24 (11.2)	77 (36.0)	82 (38.3)	31 (14.5)
Self-controlling					
Q12	I tried to keep my feelings to myself	31 (14.5)	77 (36.0)	63 (29.4)	43 (20.1)
Q13	I tried not to act too hastily or follow my first hunch	42 (19.6)	39 (18.2)	68 (31.8)	65 (30.4)
Q14	Kept others from knowing how bad things were	43 (20.1)	74 (34.6)	63 (29.4)	34 (15.9)
Confrontive coping					
Q15	I expressed anger to the person(s) who caused the problem	79 (36.9)	97 (45.3)	31 (14.5)	7 (3.3)
Q16	I stood my ground and fought for what I wanted	9 (4.2)	40 (18.7)	96 (44.9)	69 (32.2)

Positive reappraisal					
Q17	Changed or grew as a person in a good way	7 (3.3)	30 (14.0)	72 (33.6)	105 (49.1)
Q18	Rediscovered what is important in life	20 (9.3)	52 (24.3)	84 (39.3)	58 (27.1)
Q19	I prayed	2 (0.9)	9 (4.2)	19 (8.9)	184 (86.0)
Escape (avoidance)					
Q20	I tried to make myself feel better by eating, drinking, smoking and using medication	73 (34.1)	69 (32.2)	46 (21.5)	26 (12.1)
Q21	I wished that the situation would go away or somehow be over with	11 (5.1)	29 (13.6)	88 (41.1)	86 (40.2)

Table 5: Association between Socio-demographic Characteristics and Type of Child's Disability with the Level of Coping Strategies among Malay Parents of Special Needs Children (N=210)

Level of Coping	Parameter	B	Std. Error	Wald	P-value	OR	95% CI
Average	Intercept	2.039	1.641	1.544	0.214		
	Gender						
	Female	-1.329	1.197	1.232	0.267	0.265	0.025 – 2.767
	Male (reference)						
	Age						
	20- 30 years old	1.085	1.725	0.396	0.529	2.960	0.101 – 87.065
	31- 40 years old	0.115	1.393	0.007	0.934	1.122	0.073 – 17.194
	41- 50 years old	0.242	1.390	0.030	0.862	1.274	0.084 – 19.400
	51- 60 years old	1.107	1.719	0.415	0.520	3.026	0.104 – 87.912
	>60 years old (reference)						
	Education Level						
	Primary Level	-1.352	0.945	2.048	0.152	0.259	0.041 – 1.648
	Secondary Level	-0.903	0.620	2.121	0.145	0.405	0.120 – 1.366
	Tertiary Level (reference)						
	Employment Status						
High	Working	1.552	0.673	5.327	0.021	4.722	1.264 – 17.644
	Not working/ Retired (reference)						
	Intercept	4.232	1.543	7.527	0.006		
	Gender						
	Female	-1.940	1.151	2.842	0.092	0.144	0.015 – 1.371
	Male (reference)						
	Age						
	20- 30 years old	0.922	1.565	0.347	0.556	2.514	0.117 – 54.062
	31- 40 years old	-0.279	1.230	0.052	0.820	0.756	0.068 – 8.427
	41- 50 years old	-0.167	1.233	0.018	0.892	0.846	0.076 – 9.479
	51- 60 years old	1.012	1.585	0.408	0.523	2.752	0.123 – 61.483
	>60 years old (reference)						
	Education Level						
	Primary Level	-3.450	1.044	10.910	0.001	0.032	0.004 – 0.246
	Secondary Level	-1.121	0.569	3.886	0.049	0.326	0.107 – 0.994
	Tertiary Level (reference)						
	Employment Status						
	Working	1.153	0.648	3.169	0.075	3.169	0.890 – 11.283
	Not working/ Retired (reference)						

*The reference category for Level of Coping is low

Table 6: Association Between the Level of Depression, Anxiety and Stress with the Level of Coping Strategies of The Malay Parents with Special Needs Children (N=210)

Variables	Level of coping strategies			χ^2	<i>p</i> -value
	Low	Average	High		
Depression					
No	15 (9.9%)	38 (25.2%)	98 (64.9%)	0.522	0.813
Yes	4 (6.8%)	15 (25.4%)	40 (67.8%)		
Anxiety					
No	15 (10.9%)	37 (27.0%)	85 (62.0%)	2.871	0.251
Yes	4 (5.5%)	16 (21.9%)	53 (72.6%)		
Stress					
No	19 (11.0%)	43 (25%)	110 (64.0%)	5.307	0.077
Yes	0 (0%)	10 (26.3%)	28 (73.7%)		

DISCUSSION

This study provides insights into the sociodemographic characteristics, mental health status, and coping strategies of Malay caregivers for children with special needs in Kuantan. Most of these caregivers are female, aged between 31 and 40, and come from lower-income backgrounds with a monthly family income below RM 3000. These demographic patterns align with the broader literature on caregiving in Malaysia, where women frequently shoulder caregiving responsibilities due to cultural expectations and familial obligations (6-8). The high prevalence of caregivers with tertiary education (51.0%) suggests an awareness of educational resources, though limited income may still restrict access to specialised support services. This finding aligns with similar studies, which indicate that, despite educational attainment, economic constraints can hinder caregivers from accessing necessary resources (9,10).

Mental Health Status of Malay Caregivers

Although the analysis of depression, anxiety, and stress (DAS) levels shows that most caregivers reported normal levels of depression (71.9%), anxiety (65.2%), and stress (81.95%), a substantial proportion experienced mild to moderate levels, and a smaller subset reported severe or extremely severe symptoms, indicating the need for targeted mental health support. Notably, this finding contrasts with other studies conducted during the COVID-19 pandemic, which reported elevated levels of DAS among caregivers worldwide due to increased isolation and reduced support (18). The relatively stable mental health among Malay caregivers in Kuantan could be attributed to cultural and religious coping mechanisms, such as prayer and social support from family and religious communities, which are integral to

Malay culture (11,12). Additionally, the resilience of these caregivers may be bolstered by social safety nets within Malaysian communities, where extended family and community support play essential roles in daily caregiving (13).

Despite these findings, a notable percentage of caregivers reported mild to moderate levels of DAS, with 13.3% experiencing moderate depression and 11.0% moderate anxiety. This trend highlights the underlying mental health challenges these caregivers face, potentially exacerbated by the demands of caring for children with complex needs. Previous research has shown that caregivers for children with multiple disabilities often experience higher levels of psychological distress due to the increased caregiving demands (14,15). The presence of severe and extremely severe cases, though small, underscores the need for targeted mental health support interventions tailored to the unique challenges of special needs caregiving within the Malay population.

Coping Strategies among Malay Caregivers

Most Malay caregivers in this study demonstrated high coping levels (65.7%), suggesting they employ effective strategies to manage caregiving challenges. The most frequently used coping mechanisms included planful problem-solving, seeking social support, and positive reappraisal. In particular, prayer and religious activities were the dominant coping strategies, consistent with the cultural and religious context of Malay caregivers. Studies have shown that spirituality and religious practices significantly influence coping behaviours among Malay populations, offering comfort and a sense of purpose amid caregiving stress (16,17).

However, approximately 9.0% of caregivers reported low coping levels, indicating that a subset may struggle to manage caregiving demands effectively. These caregivers may benefit from additional support to strengthen their coping capacity, particularly through culturally sensitive mental health interventions. Previous studies have suggested that psychological resilience in caregiving can be enhanced through structured support programs, community engagement, and increased access to resources (18-19). Community-based interventions that leverage religious leaders and local support networks could be particularly effective, considering the cultural preferences of this population (20,21).

Association Between Sociodemographic Factors, Child's Disability, and Coping Strategies

The study identified significant associations between sociodemographic factors and coping levels. Employment status, for instance, was linked to average coping, while tertiary education was associated with high coping levels. These findings align with research indicating that education and employment are critical determinants of coping capacity, providing caregivers with resources and social networks that facilitate effective stress management (22,23). Caregivers with tertiary education may have greater awareness of coping resources, while those employed potentially benefit from structured social interactions and financial stability, which can alleviate caregiving burdens (24-26).

Interestingly, the type of child's disability was not significantly associated with coping levels, suggesting that caregivers may adapt their coping mechanisms regardless of specific disability types. In our study, the number of children within each disability category ranged from a low of 1 to a high of 78 cases, resulting in a substantial imbalance across groups that may reduce statistical power and increase the likelihood of non-significant results. Therefore, the absence of association in this analysis may be attributable to the insufficient sample size within several categories rather than a genuine indication that caregivers adapt equally across disability types. This finding contrasts with some studies indicating that certain disabilities, such as autism or multiple disabilities, demand more intensive caregiving efforts and may influence coping strategies differently (27). In the Malay cultural context, where caregiving is often viewed as a familial duty, caregivers may develop coping strategies that are broadly applicable across various disability types, reinforced by cultural values of resilience and communal

support (28).

Additionally, the age of children with special needs may be a potential influencing factor, as development was not directly reflected in age and demands, but serves as a proxy for the number of years the caregiver has been living with and adapting to the child's disability. Younger children often require intensive hands-on care, frequent medical or therapeutic interventions, and constant supervision, which may increase caregiver stress and reliance on coping strategies. Conversely, as children grow older, caregivers may gradually adapt to the demands, develop more effective coping mechanisms, or vice versa.

This limitation underscores the need for future studies with larger and more balanced samples to more accurately evaluate whether specific disabilities have differential impacts on caregiver coping.

Association Between DAS Levels and Coping Strategies

No significant associations were found between DAS levels and coping strategies among Malay caregivers, indicating that coping strategies may remain stable across varying levels of psychological distress. This finding suggests that coping styles among Malay caregivers are resilient and may not fluctuate significantly with mental health status. Prior research has shown that cultural factors, such as the reliance on religious practices, often provide stable coping foundations for Malay caregivers, regardless of situational stressors (29). However, this stability may also indicate that, while caregivers manage stress through consistent strategies, they may not effectively reduce DAS levels, signalling the need for more tailored mental health support that can directly address these psychological challenges (30).

CONCLUSION

This study revealed that most Malay caregivers of children with special needs reported normal levels of depression, anxiety, and stress, and the majority demonstrated high coping strategies, particularly through positive reappraisal. Caregivers with higher educational attainment were more likely to adopt effective coping mechanisms, underscoring the role of knowledge and awareness in fostering resilience. Conversely, the type of disability was not significantly associated with coping. However, this finding should be interpreted cautiously due to the uneven distribution of

disability categories, which may have limited statistical power.

This highlights the need for culturally sensitive interventions, enhanced educational initiatives, and psychosocial programmes that strengthen caregivers' resilience and capacity to manage the demands of long-term care. Policies that integrate cultural values, family-centred approaches, and community-based resources could further empower caregivers. Future studies with larger and more balanced samples are essential to explore how cultural practices, caregiver characteristics, and child-related factors interact to shape coping and mental health, thereby guiding the development of more nuanced and sustainable support systems.

CONFLICT OF INTEREST

The authors declared no conflict of interest.

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AUTHOR CONTRIBUTIONS:

HH: Principal investigator, reviewed, finalized manuscript and coordinating publication matters.

ANA: Assist in data collection and drafting manuscript.

SY: Study field coordinator and assist data collection.

HDW: Assist in drafting and reviewing manuscript.

EHN: Assist in drafting and reviewing manuscript.

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