



Feasibility and Efficacy of an ACT-Based Intervention for Malaysian Parents of Children with Special Health Care Needs: A Pilot Study

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Abstract

Background: Parents of children with special health care needs (CSHCN) often experience elevated stress and poorer mental health; yet, parent-focused interventions are frequently overlooked.

Objectives: This study evaluated the culturally adapted My-CARE, an Acceptance and Commitment Therapy (ACT)-based protocol, for Chinese Malaysian parents of CSHCN.

Methods: Eight parents participated in a pilot study that evaluated the protocol's reliability, feasibility, acceptability, satisfaction, and preliminary efficacy. Parental psychological distress, psychological flexibility (PF) and inflexibility (PI), and parenting stress were measured using the Depression Anxiety Stress Scale-21 (DASS-21), Multidimensional Psychological Flexibility Inventory (MPFI), and Parenting Stress Index (PSI).

Results: Results indicated good reliability (Cronbach's alpha of 0.87), feasibility, acceptability, and satisfaction ratings. The average attendance was 94%. Questionnaire completion rates ranged from 95 to 100%. Satisfaction and acceptability scores averaged 96.73% and 94.17%, respectively. Additionally, participants reported reduced psychological distress, PI, and parenting stress, along with improved PF, with small to large effect sizes ($g = 0.08$ to 0.98). Notably, depression significantly improved [$t(7) = 3.11$; $P = 0.02$; $g = 0.98$].

Conclusions: These findings support the feasibility and potential efficacy of the ACT-based protocol adapted to the linguistic and cultural contexts of Chinese Malaysian parents of CSHCN. Future studies with larger samples, a control group, and follow-up assessments are needed to validate efficacy.

Keywords: Acceptance and Commitment Therapy, Chinese Malaysian, Parent, Pilot Study, Special Health Care Need

1. Background

Parents of children with special health care needs (CSHCN) often face elevated stress levels and psychological distress, including depression and anxiety, compared to parents of typically developing children (1). These challenges are compounded by caregiving demands, financial pressures, and social isolation commonly associated with raising CSHCN (2, 3). A third-wave cognitive-behavioral intervention, Acceptance and Commitment Therapy (ACT), has proven efficacious in reducing psychological distress and enhancing psychological flexibility (PF) among parents of CSHCN (2, 4). The ACT's transdiagnostic approach

promotes acceptance, mindfulness, and value-based actions, enabling parents to manage caregiving challenges more effectively and cultivate adaptive parenting behavior (5).

However, parent-focused interventions utilizing the ACT approach remain scarce. Additionally, fewer than half (i.e., 42%) of the existing ACT interventions have been tailored for caregivers (6). Moreover, few interventions have been tailored for non-Western populations, particularly in Malaysia. Existing studies indicate that cultural adaptation enhances intervention efficacy (6), yet there remains a lack of ACT-based programs specifically designed for Chinese Malaysian parents of CSHCN.

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The Chinese community represents the second-largest ethnic group in multicultural Malaysia, accounting for 23.2% of the 33.7 million population (7). The identity of Chinese Malaysians is shaped by a hybrid cultural influence derived from their host country (i.e., Malaysia), their ancestral homeland (i.e., China), and the broader diaspora (8). Malaysian Mandarin (huayu), commonly known as the “Chinese language” in Southeast Asia, is the second most widely spoken language in the country. It exhibits distinct regional variations from Standard Mandarin (Putonghua) spoken in China and serves as an unofficial standard language among Chinese Malaysians (9). Furthermore, the cultural identity of Chinese Malaysians has been influenced by colonization, Christian missions, as well as Malaysian educational policies (10). This unique hybrid culture exists within a pluralistic society, differing from that of greater China.

2. Objectives

Given the unique linguistic and cultural characteristics of this population, the present study aimed to evaluate the feasibility and preliminary efficacy of My-CARE (ACT for Chinese Malaysian caregivers of CSHCN), an ACT-based intervention for Chinese Malaysian caregivers, in a pilot study.

3. Methods

This study is part of a broader design and development research (DDR) initiative. The Human Research Ethics Committee (Non-Medical) of University Malaysia Sarawak approved the study [HREC(NM)/2023 (1)/38]. Written informed consent was obtained from all individual participants.

3.1. My-CARE Protocol

The My-CARE protocol was prepared in the Chinese language and included examples, concepts, methods, phrases, and activities that are familiar to the Chinese Malaysian community (11). The My-CARE protocol consisted of four in-person sessions, each lasting 1.5 hours. Each session included mindfulness activities and peer interactions because they have been proven particularly helpful for parents of CSHCN (6). The sessions also included reviews of past sessions and take-home exercises. The protocol was delivered in Malaysian Mandarin, supplemented by Bahasa Malaysia and

English. Table 1 depicts the My-CARE content and examples of activities.

3.2. Research Design

The study is part of a multiphasic DDR initiative aimed at developing and evaluating the My-CARE protocol. In this study, a pilot study involving eight Chinese Malaysian parents of CSHCN was conducted. A pre-post within-participant design was used to assess the feasibility, acceptability, satisfaction, reliability, and preliminary efficacy of the My-CARE intervention. The data collection was completed in January 2024. Eight participants reviewed the information sheets and provided written informed consent before completing pre-intervention measurements and commencing the sessions. They received text reminders for all meetings and were reimbursed RM20 (approximately US\$4.50) after completing the sessions and measurements.

The first author developed and conducted the sessions. Born and raised in Malaysia, she is a Chinese Malaysian who speaks Malaysian Mandarin, one of her dominant languages. Her familiarity with culture, references, sayings, and other community contextual factors enables her to communicate with the participants in a culturally sensitive manner. She received training in ACT prior to and during her doctoral studies.

3.3. Participants

The study recruited its participants from non-governmental organizations, private rehabilitation centers, and early intervention centers. The inclusion criteria were: (1) Parents of CSHCN aged 0 - 18 years; (2) Malaysian of Chinese ethnic origin; (3) proficiency in Mandarin Chinese; and (4) attend at least two face-to-face sessions. The study excluded parents who reported suicidal ideation, recent loss, and severe psychiatric problems.

Previous pilot studies that involved parents of CSHCN well-being programs have included sample sizes of seven (12), nine (13), and ten (14) parents. This study included eight parents of CSHCN in line with these precedents.

3.4. Measures

Participants completed the following measurements before intervention (T1) and after the fourth session (T2).

Table 1. Summary of My-CARE Content

Sessions	Content	Examples
1) Finding stillness [Hexaflex: Present moment, self-as-context]	Ground rules and housekeeping, brief mindfulness exercise, the story of YOU, Chinese opera, what's inside your rooster bowl? Mindfulness in everyday life	Participants were encouraged to integrate mindfulness in their daily routines. Some parents shared that they became more aware and engaged in their spiritual practices, such as praying and reading scripture.
2) Weathering thoughts and feelings [Hexaflex: Acceptance, cognitive defusion]	Brief mindfulness exercise, parenting unfiltered, Chinese finger trap, tug of war, "I notice the thought..."	Participants were given more time for small-group discussions to appeal to their collectivistic nature. For instance, during the Parenting Unfiltered activity, they discussed their challenges parenting a CSHCN. As they identified their difficult thoughts and emotions, the facilitator introduced Acceptance and Cognitive Defusion.
3) Parenting your special child [Triflex: Value, committed action]	Brief mindfulness exercise, journey to the west activity and metaphor, passengers on the bus role play	Chinese folklore, Journey to the West, was used in value identification. The characters in the folklore were used as metaphors for embracing discomfort while pursuing value-driven actions.
4) You matter [summary of act principles and self-compassion]	Brief mindfulness exercise, on-the-job and off-the-job self-care, self-compassion	Facilitator prepared traditional childhood snacks (e.g., peanut candies, hawthorn slices) in the mindful eating activity. Participants were guided to share their thoughts/memories, bodily sensations, and feelings.

Abbreviation: CSHCN, children with special health care needs.

3.4.1. Demographic Information

The participants provided information about themselves and their children. The findings are reported in [Tables 2](#) and [3](#).

3.4.2. Depression Anxiety Stress Scale-21

Depression Anxiety Stress Scale-21 (DASS-21) is an abbreviated, 21-item self-report tool used to assess anxiety, depression, and stress across varied settings ([15](#)). It uses a 4-point Likert scale ranging from 0 (strongly disagree) to 3 (strongly agree). The Chinese version of DASS-21 has been validated to have a three-factor structure ([16](#)). Its internal consistencies were 0.90 for depression, 0.84 - 0.88 for anxiety, and 0.88 - 0.90 for stress subscales ([17](#)).

3.4.3. Multidimensional Psychological Flexibility Inventory-Short Form

MPFI is a 60-item self-report inventory assessing six distinct aspects of PF and psychological inflexibility (PI) ([18](#)). The Multidimensional Psychological Flexibility Inventory-Short Form (MPFI-SF), a 24-item short form, includes two items from each subscale ([18](#)). The items are rated on a Likert scale of 1 (never true) to 6 (always true). Higher scores reflect greater levels of that dimension. The simplified Chinese version shows high internal consistency, ranging from 0.83 to 0.93 ([19](#)). Additionally, the scale demonstrates high validity, correlating well with measures of individual well-being and distress ([19](#)).

3.4.4. Parenting Stress Index-Short Form-15

PSI is a self-report tool screening parenting stress ([20](#)). The abbreviated Chinese version of Parenting Stress Index-Short Form-15 (PSI-SF-15) consists of 15 items and includes three subscales, namely, parental stress, parent-child dysfunctional interaction, and difficult child ([21](#)). The Cronbach's alphas for each subscale range from 0.71 to 0.82 and a total α of 0.86 to 0.87. The PSI-SF-15 displays a high convergent validity with the original PSI-SF ($r_s \geq 0.90$). This scale meets validity criteria in external measures of parenting practices, parental emotions, and children's corporal punishment.

3.4.5. Other Measures

3.4.5.1. Reliability

The participants completed reliability questionnaires to assess the clarity and effectiveness of session activities at the end of each session ([22](#)). Four questionnaires, totaling forty items, were prepared. They were graded on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Some examples include "I can identify my parenting values after the Journey to the West activity."

3.4.5.2. Attendance Rates and Questionnaire Completion Rates

The goals were 75% average attendance and 75% completion of all measurements.

3.4.5.3. Acceptability and Satisfaction

An adapted version of the Program Acceptability Questionnaire ([23](#)) was used to evaluate the participants' acceptance of the entire program at T2. The

Table 2. Demographic Characteristics of Parents

Description of Caregivers	N	%
Relation to the child		
Mother	6	75.00
Father	2	25.00
Age		
31 - 40	4	50.00
41 - 50	3	37.50
51 - 60	1	12.50
Marital status		
Married	7	87.50
Separated	1	12.50
Educational level		
Secondary school	3	37.50
Undergraduate degree	2	25.00
Postgraduate degree	1	12.50
Other	2	25.00
Employment status		
Working full-time	6	75.00
None	2	25.00
Household income (RM)		
<2,500	2	25.00
2,501 - 5,250	1	12.50
5,251 - 11,819	5	62.50

questionnaire contains Parts A and B. Part A evaluates the participants' experiences with the facilitator and group members, their overall experience with the program, and its suitability for participants with a Chinese Malaysian background. Examples are "My experience with the parent group sessions was positive" and "This program was suitable for someone like me who identifies with a Chinese Malaysian background." This was followed by Part B, which included five open-ended questions regarding potential improvements to the program, the most beneficial topics, and soliciting open feedback. Additionally, the participant's satisfaction with the program was evaluated in each session using a four-point Likert scale, with ratings of fail (0), pass (1), well done (2), and very well done (3) (24).

3.4.6. Statistical Analysis

Research data were analyzed using SPSS version 29.0. Descriptive statistics were computed to analyze the demographic variables. For data meeting the assumption of normality, a paired-samples *t*-test was conducted to compare T1 and T2 means. For data that did not meet normality assumptions, the non-

parametric Wilcoxon Signed-Rank test for related samples was performed. The effect size for the paired-sample *t*-test and Wilcoxon Signed-Rank test was expressed as Hedges' *g* and *r*, respectively.

4. Results

4.1. Demographics

Eight Chinese Malaysian parents of CSHCN participated in the pilot study conducted at a community rehabilitation center. Table 2 depicts the demographic characteristics of the parents, while Table 3 reports the demographic profiles of their CSHCN.

4.2. Other Measures

4.2.1. Reliability

After completing the reliability questionnaires, Cronbach's alpha (α) was calculated using SPSS version 29.0 to ascertain the reliability coefficients of the module. Table 4 presents the Cronbach's alpha values and their 95% confidence intervals (calculated via bootstrapping with 1000 samples) for each submodule.

Table 3. Demographic Characteristics of Children

Description of Children	N	%
Gender of the child with special needs		
Girl	5	62.50
Boy	3	37.50
Age of the child with special needs		
< 4	1	12.50
4 - 6	3	37.50
7 - 9	2	25.00
10 -12	2	25.00
Birth order of the child with special needs		
1	5	62.50
2	1	12.50
3	2	25.00
Educational institution		
Mainstream class	2	25.00
Special class	1	12.50
Early intervention programme	3	37.50
None	1	12.50
Other	1	12.50
Formal diagnosis		
Yes	7	87.50
No	1	12.50
Type of child's special needs (multiple choices allowed)		
ASD	5	-
ADHD	3	-
SLD	3	-
GDD	2	-
Dyslexia	2	-
MH	2	-

Abbreviations: ASD, autism spectrum disorder; SLD, speech and language delay; ADHD, attention deficit hyperactivity disorder; GDD, global developmental delay; MH, mental health issues; HI, hearing impairment; DS, down Syndrome.

Table 4 . Reliability Co-efficient of My-CARE Submodules

Submodule	Cronbach's Alpha	95% CI		Interpretation
		Lower	Upper	
Finding stillness	0.74	0.55	0.93	Acceptable
Weathering thoughts and feelings	0.93	0.87	0.99	Acceptable
Parenting your special child	0.91	0.84	0.98	Acceptable
You matter	0.92	0.86	0.98	Acceptable
Average α	0.87	-	-	Acceptable

The module achieved an average Cronbach's alpha of .87, reflecting an acceptable level of reliability (25).

4.2.2. Attendance Rates

Attendance rates for the four sessions were 100%, 88%, 88%, and 100%, respectively. One parent was absent for

the second and third sessions on separate occasions due to childcare issues. The average attendance rate of 94% exceeded the target of 75%.

4.2.3. Questionnaire Completion Rates

Table 5. Pre- and Post-Intervention Scores ^{a, b}

Measure	Pre-test	Post-test	t	P	Effect Size (g)
DASS-21					
DD	7.25 ± 4.40	3.63 ± 3.38	3.11	0.02 ^c	0.98
DA	6.00 ± 3.30	5.50 ± 4.07	0.27	0.80	0.08
DS	9.25 ± 4.30	5.75 ± 4.23	1.64	0.15	0.51
MPFI-SF					
PI	41.50 ± 13.42	35.63 ± 13.29	1.93	0.09	0.61
PSI-SF-15	37.13 ± 11.54	30.25 ± 10.63	1.83	0.11	0.57
			Z	P	Effect size (r)
MPFI-SF					
PF	53.00 ± 5.04	55.13 ± 9.06	1.18	0.24	0.42

Abbreviations: DASS-21, Depression Anxiety Stress Scale-21; DD, depression domain of DASS-21; DA, anxiety domain of DASS-21; DS, stress domain of DASS-21; MPFI-SF, Multidimensional Psychological Flexibility Inventory-Short Form; PI, psychological inflexibility; PSI-SF-15, Parenting Stress Index-Short Form-15; PF, psychological flexibility.

^a N = 8; g: Hedges' correction with benchmark: 0.20 small; 0.50 medium; 0.80 large. 0.10 ≤ r < 0.30 small; 0.30 ≤ r < 0.50 medium; ≥ 0.50 large.

^b Values are expressed as mean ± SD.

^c P < 0.05.

The participants completed seven forms in digital and pen-and-paper formats. The digital questionnaire had a 100% completion rate, and the pen-and-paper forms had a 95% completion rate, surpassing the 75% goal.

4.2.4. Satisfaction

The satisfaction scores for each session were 91.67%, 95.24%, 100%, and 100.00%, rendering an average score of 96.73%.

4.2.5. Acceptability

Participants rated the overall acceptability of the program after the T2, with an average score of 94.17%.

Qualitative observations showed that the participants remained involved and attentive throughout the four sessions. They were particularly participative in small-group discussions. In the open-ended questions of the Program Acceptability Questionnaire, the participants reported experiential activities and social support as the most helpful. Overall, the participants indicated their satisfaction with the program and the facilitator. However, many remarked on the brevity of the 1.5-hour sessions.

4.3. Preliminary Efficacy

The Shapiro-Wilk test results showed that the data followed a normal distribution ($P > .05$), except for PF. Additionally, skewness and kurtosis values for all

variables fall within the acceptable range [± 2 for skewness and ± 7 for kurtosis; (26)]. Given the violation of normality suggested by the Shapiro-Wilk test and the presence of an outlier, the non-parametric related-samples Wilcoxon Signed-Rank test was performed for PF.

The findings from DASS-21 indicated reduced psychological distress. Notably, the T2 depression score ($n = 8$, $M = 3.63$, $SD = 3.38$) was significantly lower than the T1 depression score ($n = 8$, $M = 7.25$, $SD = 4.40$), $t(7) = 3.11$; $P = 0.02$; $g = 0.98$, indicating a large effect size. Additionally, PF improved, and PI decreased post-intervention. Specifically, the T2 PI score ($n = 8$, $M = 35.63$, $SD = 13.29$) decreased relative to the T1 score ($n = 8$, $M = 41.50$, $SD = 13.42$), $t(7) = 1.93$; $P = 0.09$; $g = 0.61$). Notably, the PI scores trended towards significance ($P = 0.09$). Furthermore, PSI-SF-15 findings indicated a decrease in overall parenting stress. However, no significant differences were found between the pre- and post-intervention scores. Table 5 reports this information.

5. Discussion

This study reports the preliminary efficacy results of My-CARE among Chinese Malaysian parents of CSHCN using a single-group pre-post design, assessing depression, anxiety, stress, PF, PI, and PSI. Eight participants attended four weekly 1.5-hour group sessions at a community rehabilitation center, with an average attendance of 94%, surpassing the 75% target. Questionnaire completion rates ranged from 95 to 100%.

Satisfaction and acceptability scores averaged 96.73% and 94.17%, respectively. The protocol demonstrated high internal reliability ($\alpha = .87$), supporting its readiness for a larger-scale controlled study (27).

Participants in this study reported reduced depression, anxiety, and stress scores following the intervention. Notably, significant differences existed in the pre- and post-intervention depression scores, with a large effect size ($g = 0.98$). These results are consistent with the effect sizes reported in meta-analyses that documented the effectiveness of ACT across various conditions (28). The large effects observed in depression may be attributed to cognitive defusion techniques, which assist individuals in detaching from unhelpful thoughts, and the promotion of behavioral activation through engagement in valued activities (29).

Additionally, this study observed the expected ACT mechanism changes, including increased PF and decreased PI. Notably, the reduction in PI scores approached significance ($P = 0.09$). This finding aligns with reductions in PI (reflected in lower scores on the Acceptance and Action Questionnaire-II) reported in several studies involving parents of children with neurodevelopmental disabilities (30) and parents of children with psychiatric issues (31). Interestingly, PF and PI demonstrated distinct outcomes, with PI showing a stronger trend towards significance ($P = 0.09$ vs 0.24) and a larger effect size (medium for PI and small-to-medium for PF). The findings suggest that My-CARE may differentially influence PF and PI. These findings reinforce prior studies that indicate PF and PI, while related, are distinct and can vary independently (18, 32). Future studies with larger samples and follow-ups are needed to provide a clearer understanding.

Furthermore, the overall Parenting Stress Index (PSI) decreased post-intervention, with a medium effect size ($g = 0.57$). Prior studies have reported that ACT-based interventions for parents lead to a reduction in parental stress (33). Given that the PSI assesses parental distress, parent-child dysfunctional interaction, and perception of difficult child domains, these findings suggest a positive shift in parental well-being and parent-child communication. This change may stem from greater consistency and responsiveness in parenting (31).

Overall, the My-CARE protocol was delivered using a flexible and process-based approach while maintaining its main content. This approach enabled the facilitator to respond sensitively to participants' unique contexts and experiences (34). Throughout the four sessions, the

facilitator alternated focus among participants' experiences, ensuring that ACT principles were applied in a culturally responsive way that suited the local context. Participants expressed support for the approach and protocol in both quantitative and qualitative feedback. In their qualitative responses, they particularly valued the social support, activities, and number of sessions. However, based on participants' suggestions, the session duration should be extended to 2 hours in the next study phase to enhance engagement.

This study represents a pioneering initiative in developing and evaluating a culturally sensitive ACT-based intervention tailored for Chinese Malaysian parents of CSHCN. Unlike previous pilot studies that focused solely on efficacy (34, 35), this study provides a more comprehensive evaluation, encompassing reliability, feasibility, acceptability, satisfaction, and preliminary efficacy of the My-CARE protocol. Additionally, unlike prior approaches that treated PF and PI as opposing points on a single continuum, this study conceptualized them as distinct constructs (32). This distinction was reinforced using MPFI, which separately assessed PF and PI, thereby enhancing the understanding of the differential influences of these ACT mechanisms.

Despite its strengths, this study has several limitations that warrant consideration. First, the small sample size inherent to this pilot study limits the statistical power to detect meaningful changes and reduces the generalizability of findings to the broader population of parents with CSHCN. Additionally, small samples are prone to inflated effect sizes, which may overestimate the true magnitude of observed outcomes. Second, the lack of a control group introduces potential bias, preventing causal inferences and making it difficult to rule out alternative explanations for the results. Third, the absence of follow-up assessments prevents conclusions regarding the longer-term intervention effects.

Despite these limitations, this study contributed to the growing evidence on culturally adapted ACT interventions within an underrepresented population. Moving forward, future studies should address these limitations by employing larger, randomized controlled trials with longitudinal follow-up measurements.

In this study, the researchers developed an ACT protocol specifically designed for Chinese Malaysian parents of CSHCN and examined its reliability, feasibility, satisfaction, acceptability, and preliminary

efficacy. The My-CARE protocol was associated with significant improvements in depression and showed trends approaching significance for PI. This study provides preliminary evidence that ACT can benefit Chinese Malaysian parents of CSHCN when adapted to their linguistic and cultural contexts. However, replication in a larger controlled trial with follow-up measurements is necessary to further validate these findings.

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Footnotes

Authors' Contribution: Writing-review and editing, writing-original draft, resources, project administration, methodology, investigation, formal analysis, data curation, and conceptualization: R. G. L.; Writing-review and editing and supervision: S. P. V. and F. S. M.

Conflict of Interests Statement: The authors declare no conflict of interest.

Data Availability: The data presented in this study are openly available in Zenodo at <https://doi.org/10.5281/zenodo.12540613>.

Ethical Approval: The study protocol conforms to the ethical guidelines of the 1975 Declaration of Helsinki. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee [HREC(NM)/2023 (1)/38].

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Informed Consent: Written informed consent was obtained from all individual participants included in the study.

References

- Cohn LN, Pechlivanoglou P, Lee Y, Mahant S, Orkin J, Marson A, et al. Health Outcomes of Parents of Children with Chronic Illness: A Systematic Review and Meta-Analysis. *J Pediatr*. 2020;**218**:166-177 e2. [PubMed ID: 31916997]. <https://doi.org/10.1016/j.jpeds.2019.10.068>.
- Parmar A, Esser K, Barreira L, Miller D, Morinis L, Chong YY, et al. Acceptance and Commitment Therapy for Children with Special Health Care Needs and Their Parents: A Systematic Review and Meta-Analysis. *Int J Environ Res Public Health*. 2021;**18**(15). [PubMed ID: 34360497]. [PubMed Central ID: PMC8345967]. <https://doi.org/10.3390/ijerph18158205>.
- Li S, Chen Z, Yong Y, Xie J, Li Y. Effectiveness of acceptance and commitment therapy-based interventions for improving the psychological health of parents of children with special health care needs: A systematic review and meta-analysis. *Compr Psychiatry*. 2023;**127**:152426. [PubMed ID: 37757593]. <https://doi.org/10.1016/j.comppsy.2023.152426>.
- Jin X, Wong CL, Li H, Chen J, Chong YY, Bai Y. Acceptance and Commitment Therapy for psychological and behavioural changes among parents of children with chronic health conditions: A systematic review. *J Adv Nurs*. 2021;**77**(7):3020-33. [PubMed ID: 33626192]. <https://doi.org/10.1111/jan.14798>.
- Chua JYX, Shorey S. The Effect of Mindfulness-Based and Acceptance Commitment Therapy-Based Interventions to Improve the Mental Well-Being Among Parents of Children with Developmental Disabilities: A Systematic Review and Meta-Analysis. *J Autism Dev Disord*. 2022;**52**(6):2770-83. [PubMed ID: 34181139]. [PubMed Central ID: PMC8237545]. <https://doi.org/10.1007/s10803-021-04893-1>.
- Wright SR, Graham CD, Houghton R, Ghiglieri C, Berry E. Acceptance and commitment therapy (ACT) for caregivers of children with chronic conditions: A mixed methods systematic review (MMSR) of efficacy, process, and acceptance. *J Contextual Behav Sci*. 2023;**27**:72-97. <https://doi.org/10.1016/j.jcbs.2022.12.003>.
- Department of Statistics Malaysia. *Malaysia Has a Population of 32,447,385 People. What Does This Population Look Like?*. 2024. Available from: <https://open.dosm.gov.my/dashboard/kawasanku..>
- Bhattacharya A. The Chinese Diaspora in Southeast Asia: Chinese Nationalism Reinforced. *Diaspora Studies*. 2009;**2**(2):119-42. <https://doi.org/10.1163/09763457-00202001>.
- Vollmann R, Soon TW. Chinese identities in multilingual Malaysia. *Grazer Linguistische Studien*. 2018;**89**:35-61.
- Carstens S. Multilingual Chinese Malaysians: The global dimensions of language choice. *Grazer Linguistische Studien*. 2018;**89**:7-34.
- Bernal G, Jiménez-Chafey MI, Domenech Rodríguez MM. Cultural adaptation of treatments: A resource for considering culture in evidence-based practice. *Professional Psychol: Res Practice*. 2009;**40**(4):361-8. <https://doi.org/10.1037/a0016401>.
- Little P, Al Ghriwati N, Siegel A, Toledo-Tamula MA, Curlee MS, Baker M, et al. A Pilot Acceptance and Commitment Intervention for Parents of Children With RASopathies. *Clinical Practice in Pediatric Psychol*. 2025;**13**(1):37-48. <https://doi.org/10.1037/cpp0000551>.
- Tekola B, Girma F, Kinfe M, Abdurahman R, Tesfaye M, Yenus Z, et al. Adapting and pre-testing the World Health Organization's Caregiver Skills Training programme for autism and other developmental disorders in a very low-resource setting: Findings from Ethiopia. *Autism*. 2020;**24**(1):51-63. [PubMed ID: 31094208]. [PubMed Central ID: PMC6927066]. <https://doi.org/10.1177/1362361319848532>.
- Schlebusch L, Chambers N, Rosenstein D, Erasmus P, Who Cst Team, de Vries PJ. Supporting caregivers of children with developmental disabilities: Findings from a brief caregiver well-being programme in South Africa. *Autism*. 2024;**28**(1):199-214. [PubMed ID: 36352758]. <https://doi.org/10.1177/1362361322113182>.

15. Lovibond PF, Lovibond SH. The structure of negative emotional states: comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behav Res Ther.* 1995;**33**(3):335-43. [PubMed ID: 7726811]. [https://doi.org/10.1016/0005-7967\(94\)00075-u](https://doi.org/10.1016/0005-7967(94)00075-u).
16. Moussa MT, Lovibond PF, Laube R. Psychometric properties of a Chinese version of the 21-item depression anxiety stress scales (DASS21). Sydney, NSW: Transcultural Mental Health Centre. Cumberland Hospital. 2001.
17. Chan ACY, Piehler TF, Ho GWK. Resilience and mental health during the COVID-19 pandemic: Findings from Minnesota and Hong Kong. *J Affect Disord.* 2021;**295**:771-80. [PubMed ID: 34517251]. [PubMed Central ID: PMC8422274]. <https://doi.org/10.1016/j.jad.2021.08.144>.
18. Rolffs JL, Rogge RD, Wilson KG. Disentangling Components of Flexibility via the Hexaflex Model: Development and Validation of the Multidimensional Psychological Flexibility Inventory (MPFI). *Assessment.* 2018;**25**(4):458-82. [PubMed ID: 27152011]. <https://doi.org/10.1177/1073191116645905>.
19. Lin Y, Rogge RD, Swanson DP. Cross-cultural flexibility: Validation of the traditional Mandarin, simplified Mandarin, and Japanese translations of the Multidimensional Psychological Flexibility Inventory. *J Contextual Behav Sci.* 2020;**15**:73-84. <https://doi.org/10.1016/j.jcbs.2019.11.008>.
20. Abidin RR. *Parenting Stress Index Short Form - Test Manual*. Charlottesville, Virginia: Pediatric Psychology Press; 2011. <https://doi.org/10.1037/t02445-000>.
21. Luo J, Wang MC, Gao Y, Zeng H, Yang W, Chen W, et al. Refining the Parenting Stress Index-Short Form (PSI-SF) in Chinese Parents. *Assessment.* 2021;**28**(2):551-66. [PubMed ID: 31072108]. <https://doi.org/10.1177/1073191119847757>.
22. Mohd S, Ahmad J. *Pembinaan modul: Bagaimana membina modul latihan dan modul akademik*. Selangor, Malaysia: Penerbit Universiti Putra Malaysia; 2005.
23. Correa-Fernandez V, Blalock JA, Piper ME, Canino G, Wetter DW. Acceptance and Commitment Therapy Wellness Program for Latine Adults Who Smoke and Have Psychological Distress: Protocol for a Feasibility Study. *JMIR Res Protoc.* 2023;**12**. e44146. [PubMed ID: 37014678]. [PubMed Central ID: PMC10131986]. <https://doi.org/10.2196/44146>.
24. Holmberg Bergman T, Renhorn E, Berg B, Lappalainen P, Ghaderi A, Hirvikoski T. Acceptance and Commitment Therapy Group Intervention for Parents of Children with Disabilities (Navigator ACT): An Open Feasibility Trial. *J Autism Dev Disord.* 2023;**53**(5):1834-49. [PubMed ID: 35239083]. [PubMed Central ID: PMC10123046]. <https://doi.org/10.1007/s10803-022-05490-6>.
25. NE FJW, Hyun HH. *How to design and evaluate research in education*. 8th ed. New York, US: McGraw-Hill Humanitie; 2012.
26. Hair Jr JF, Anderson RE, Tatham RL, Black WC. *Multivariate data analysis with readings*. 6th ed. Upper Saddle River NJ, New Jersey: Prentice-Hall, Inc; 1995.
27. Carmines EG. Reliability and validity assessment. *Quantitative Applications in the Social Sciences/Sage*. 1979.
28. Gloster AT, Walder N, Levin ME, Twohig MP, Karekla M. The empirical status of acceptance and commitment therapy: A review of meta-analyses. *J Contextual Behav Sci.* 2020;**18**:181-92. <https://doi.org/10.1016/j.jcbs.2020.09.009>.
29. Hayes SC, Pistorello J, Levin ME. Acceptance and Commitment Therapy as a Unified Model of Behavior Change. *The Counseling Psychol.* 2012;**40**(7):976-1002. <https://doi.org/10.1177/0011000012460836>.
30. Magnacca C, Thomson K, Marcinkiewicz A. Acceptance and Commitment Therapy for Caregivers of Children with Neurodevelopmental Disabilities: a Systematic Review. *Current Develop Disorders Reports.* 2021;**8**(2):152-60. <https://doi.org/10.1007/s40474-021-00228-y>.
31. Bodden DH, Matthijssen D. A Pilot Study Examining the Effect of Acceptance and Commitment Therapy as Parent Counseling. *J Child Family Studies.* 2021;**30**(4):978-88. <https://doi.org/10.1007/s10826-021-01926-2>.
32. Cherry KM, Hoeven EV, Patterson TS, Lumley MN. Defining and measuring "psychological flexibility": A narrative scoping review of diverse flexibility and rigidity constructs and perspectives. *Clin Psychol Rev.* 2021;**84**:101973. [PubMed ID: 33550157]. <https://doi.org/10.1016/j.cpr.2021.101973>.
33. Blackledge JT, Hayes SC. Using Acceptance and Commitment Training in the Support of Parents of Children Diagnosed with Autism. *Child & Family Behavior Therapy.* 2006;**28**(1):1-18. https://doi.org/10.1300/J019v28n01_01.
34. Cañón LF, Gould ER, Sandoz EK, Moran O, Grimaldi MA. Cultural adaptation of ACT to support caregivers of autistic Latino children: A pilot study. *J Contextual Behav Sci.* 2023;**28**:1-9. <https://doi.org/10.1016/j.jcbs.2023.03.003>.
35. Anclair M, Hjarthag F, Hiltunen AJ. Cognitive Behavioural Therapy and Mindfulness for Health-Related Quality of Life: Comparing Treatments for Parents of Children with Chronic Conditions - A Pilot Feasibility Study. *Clin Pract Epidemiol Ment Health.* 2017;**13**:1-9. [PubMed ID: 28217146]. [PubMed Central ID: PMC5301303]. <https://doi.org/10.2174/1745017901713010001>.