

## ADAPTING THE WHO CAREGIVER SKILLS TRAINING PROGRAMME IN MALAYSIA FOR CHILDREN WITH DEVELOPMENTAL DELAY IMPACTED BY COVID-19

Sazlina Kamaralzaman  
Faculty of Health Sciences  
Universiti Kebangsaan Malaysia, 50300 Kuala Lumpur, Malaysia  
Email: sazlina@ukm.edu.my

Hasnah Toran  
Faculty of Education  
Universiti Kebangsaan Malaysia, 43600 Selangor Malaysia  
Email: hasnahto@ukm.edu.my

Mardhiah Mohd Zain  
Faculty of Health Sciences  
Universiti Kebangsaan Malaysia, 50300 Kuala Lumpur, Malaysia  
Email: mardhiahzain@gmail.com

Toh Yi Xuan  
Faculty of Health Sciences  
Universiti Kebangsaan Malaysia, 50300 Kuala Lumpur, Malaysia  
Email: a169633@siswa.ukm.edu.my

Hanani Harun Rasit  
SEAMEO Regional Centre for Special Educational Needs  
75400 Melaka, Malaysia  
Email: hananiharunrasit@gmail.com

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### ABSTRACT

*The outbreak of COVID-19 has a global impact on individuals, families and whole healthcare systems including children with developmental delay or disorder. Physical isolation, restriction to playground and lockdown have negative impact on children, increasing the risks of sensory, cognitive, motor and social-communication delay. Limitation to early intervention services and therapy worsen the situation. The World Health Organization (WHO), in collaboration with Autism Speaks®, had developed the Caregiver Skills Training (WHO-CST) programme to provide parents of children with developmental delay the strategies to support their children's development, especially in improving social communication, fostering daily living skills and promoting positive behaviour. The programme was designed to be implemented in low-resource settings by non-specialists. The purpose of this paper is to discuss the feasibility of adapting WHO-CST programme to overcome the impact of COVID-19 in Malaysia. Findings from three different study population were reviewed and discussed. Studies from India, Ethiopia and Italy were methodologically appraised using the McMaster Critical Review Form-Qualitative Studies and Mixed Methods Appraisal Tool (MMAT)-Version 2018. The results of the findings mention that caregiver skill training programme was highly feasible and acceptable for implementation of intervention. The evidence showed that parents or program facilitators gained advantages from the programme and their commitment to the programme which subsequently contribute to improve the progress of the children with developmental disorders in daily activities. The paper also highlights the methodology and progress of the current study in Malaysia.*

Keywords: World Health Organisation, Caregiver Skills Training, parent training, children with developmental delay, feasibility

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### INTRODUCTION

The increase in the prevalence of developmental delay (DD), including speech and language delay, sensory impairment, learning disabilities, and autism spectrum disorder, received global attention. Developmental delay cases were reported in 52.9 million children under the age of 5, with 95% of them living in low-and-middle-income countries (Olusanya et al., 2018). There are no prevalence numbers of children with DD (CDD) in Malaysia. However, the increased enrolments on Special Education Integration Program and a sparking demand in autism-focused pre-school showed that more and more children were being diagnosed with a neurodevelopmental disorder (Musa et al., 2021). Covid-19 pandemic had made it worse. Physical isolation, restriction to the playground, and lockdown had incarcerated children, increasing the risks of sensory, cognitive, motor, and social-communication delay (Guan et al., 2020).

Although the study on pre-post Covid-19 impact to child development still under research, the results from previous pandemic and endemic situation to children had shown a significant association in harming health, social and well-being of children. Zika virus outbreak in French back in 2013 after the increase in microcephaly cases reported delays in gross motor growth among children who infected (Subissi et al., 2018). The pandemic H1N1 influenza in USA in the past 10 years had shown a delay in developments due to long hospitalization in their early childhood (Iskander et al., 2007; O'Riordan et al., 2010). According to media interviews

with experts in the global news, there are increasing delays in motor function, speech, play, and social skills of children, and it may be even more difficult for children who already have developmental challenges (Sergi et al., 2021).

The language and speech development that usually occurs during early childhood is the most concern post (Marcos & Rocha, 2021). Compared to previous pandemic and endemic situation, Covid-19 had given the most adverse effects on social interaction and physical connection. The measures taken to prevent the spread of Covid-19 have affected children from having meaningful, in-person interactions with peers. Social distancing for example, had hinder children 'play-dates', restricting their freedom to move around and unleashed their curiosity. Mask wearing on the other hand obscure social cues provided through facial expressions. In fact, the growth of virtual and hybrid school, kindergarten and childcare will lead to fewer opportunities for children to practice peer talk with only asynchronously communication occurs on virtual screens. In child development, peer talk, which includes conversational skills like turn taking and recognising the underlying meaning behind a speaker's words, is a crucial aspect of their pragmatic development. Although their precise impact has yet to be determined, a preprint of a longitudinal study on children born during the pandemic period found preliminary evidence of a decline in verbal skills when compared to children born before the pandemic (Marcos & Rocha, 2021).

All over the world, especially in Southeast Asia, many facilities that offer care or specialized educational programmes were closed because of the Covid-19 pandemic, either on their own or due to government instruction (Chu et al., 2022). In Malaysia, limited travelling opportunities due to the Control Movement Order (Aw et al., 2021) and continuous postponement of therapy or school sessions impacted the children's access to appropriate intervention (Okuyama et al., 2021). Moreover, the changes in life routine to the 'Stay at Home' order led to an increased level of challenging behaviours.

The trends of Covid-19 are soaring, especially in the central region of Malaysia. It involved states of Selangor with the highest cumulative cases of Covid-19, followed by W.P. Kuala Lumpur, Negeri Sembilan dan W.P. Putrajaya from January 2021 until recently (Aw et al., 2021). The distribution of daily positive cases in this central region had made up about 40% to 60% of total cases in Malaysia. As a result, most general state hospitals were devoted to Covid-19 hospital, for example, Hospital Ampang, Hospital Serdang and Hospital Sungai Buloh in Selangor, Hospital Tuanku Jaafar in Negeri Sembilan and Hospital Kuala Lumpur. This scenario impacted the number of outpatient visits, especially for those scheduled for rehabilitation services, involving children with developmental cases (Chong et al., 2021). Besides, population distribution is the highest in the central region and is diverse in representing Malaysia's whole sociocultural (Aw et al., 2021).

Moreover, the changes in life routine from the 'Stay at Home' order made parents inevitably see an uptick in challenging behaviour among CDD when professional and social assistance is diminished. While children do not spend enough time with their peers, remaining at home with small children has one advantage i.e. more time with primary caregivers. For that reason, World Health Organisation Caregiver Skills Training (WHO-CST) programme serves to bridge the gap of these problems (Salomone et al., 2021).

#### **WHO CAREGIVER SKILLS TRAINING (WHO-CST)**

The WHO-CST programme teaches parents of CDD how to promote their children's development with evidence-based strategies. WHO launched the WHO-CST initiative in collaboration with Autism Speaks®, which aims to caregivers of children aged 2 to 9 who have developmental delays or disabilities (Salomone et al., 2019). The programme, which consists of a combination of group and individual sessions and is designed as a modular package that can be modified to the needs of different families, does not require a diagnosis (Salomone et al., 2019). Through play and home routines, nine group sessions will present ways to increase children's involvement, communication, and adaptable behaviour. These sessions are created in the community (at centres, schools, clinics, or online) (Salomone et al., 2019). In addition, three home visits are conducted to assist families in setting particular goals, and on-site coaching for 90 minutes during parent-child interactions is provided. There is also an optional group session on parent coping strategies and other pertinent topics that can be added to the programme based on demand. Group sessions can last from two to three hours and can be scheduled weekly or bi-weekly (Salomone et al., 2019).

The programme's brilliance was in its adaptability for use in low resource settings, availability to each family and effectiveness in targeting the primary caregiver as the one trained to deliver the intervention. The review findings indicated that the improvement in child development and behavioural outcome through caregiver-mediated intervention was more effective to be provided by a non-specialist in a community setting (Sengupta et al., 2021). The non-specialist can be appointed among social workers, community volunteers, nurses, teachers, and parents after receiving 30 hours of training with continuous supervision by the specialist, also known as Master Trainer. This method was proven to effectively reduce the treatment gap and increase accessibility even for use in low resource settings (Sengupta et al., 2021).

Based on the given guidelines and countries' practice of intervention service for CDD, the minimum criteria in recruiting Master Trainer are post-secondary level education specialising in child development or mental health, for example, paediatricians, psychiatrists, psychologists, mental health nurses, and occupational therapists. According to WHO, more than 30 countries worldwide have adopted and initiated this programme (Salomone et al., 2021).

Therefore, to overcome the limited services for CDD in Malaysia, the WHO-CST programme was initiated by SEAMEO SEN as the project leader. Universiti Kebangsaan Malaysia was appointed as the research partner, and GENIUS Kurnia Centre, a government-operated centre for an early intervention programme for children with autism spectrum disorder, was established as the training partner. The Malaysian study was initiated to translate and adapt the original WHO-CST programme to the Malay language for use by the local population. This research may also act as a public health solution and provide a translation groundwork

to all Malay-speaking countries, such as Brunei and Indonesia. For these reasons, this article aims to examine the feasibility assessments of the WHO-CST programme in three countries: Ethiopia, Italy, and India. The findings from these countries are crucial as a starting point for the research in Malaysia.

## **METHODOLOGY**

The literature search was conducted for critically appraised and summarized studies published between 2017 and January 2022. The types of caregivers' skill training for families of children with developmental disorders included in this review were only the ones using the World Health Organization caregiver skill training (CST) programme. The systematic research was conducted using the PubMed database. Based on the application of Boolean Operators, potential and related studies were identified using the key terms (caregiver skill training) AND (('feasibility') OR (acceptability')) AND (('children') OR ('kids') OR ('toddlers')) AND (World Health Organisation). The PRISMA guidelines were adhered to to facilitate the review's searching, screening, and reporting (Moher et al., 2009). The search was carried out on 29 January and 30 January 2022. By following inclusion criteria, all titles were independently reviewed, and potentially relevant studies were identified based on their abstracts and retrieved the full papers. The review accepted only studies that addressed the feasibility and acceptability of the WHO-CST programme for caregivers of children with developmental delays or disorders.

The screening and selection of the retrieved studies and the assessment of methodological quality and data extraction were all completed by two reviewers. Study design, source population, sample size, setting, team, intervention, period of follow-up, and outcome were all extracted by the same reviewers. The data were extracted and appraised according to the instructions provided in the McMaster Critical Review Form-Qualitative Studies and Mixed Methods Appraisal Tool (MMAT)-Version 2018 (Hong et al., 2018).

## **RESULT**

The initial search for the feasibility of the WHO-CST programme using the selected keywords yielded six articles. After reviewing the abstract of the articles, only three articles met the inclusion criteria and were retrieved.

### **Critical Appraisal of Studies**

Detailed examinations of all three studies showed a clear and relevant background reviews. All studies reported the justifications for the sample size used. In addition, the outcome measures used in all the studies were validated and reliable. All studies also reported in terms of statistical significance and applied appropriate data analysis methods. Table 1 outlines the key metrics and findings of the reviewed studies whereas results from the appraisal using the Mixed Methods Appraisal Tool (MMAT)-Version 2018 are shown in Table 2.

## **DISCUSSION**

The WHO Caregiver Skills Training for families of children with developmental disorders is the subject of this literature evaluation. In this assessment, the feasibility of this initiative is discussed.

### ***Acceptability and feasibility of the programme implemented***

The studies showed that group-based parent or caregiver skill training was likely a feasible and acceptable intervention involving peer learning to enhance care for children with developmental disorders. Based on the findings of reviews, these studies also reported excellent enrolments and retention rates throughout the programme (Tekola et al., 2020). According to some qualitative study designs, parents' detailed explanations of the program's perceived benefits can be regarded as evidence of the program's acceptability (Sekhon, Cartwright, & Francis, 2017). The pre-pilot results suggested that the parent skill training programme might challenge common misconceptions, such as the belief that children with developmental disorders were incapable of learning in low-income countries (Tekola et al., 2020). The review also revealed the importance of the relationship between parents and therapist in contributing to treatment effectiveness, with "relationship characteristics" such as alliance, therapist genuineness, positive regard, and empathy proven to be strong predictors of outcome (Pellecchia et al., 2020). According to the findings of this study's multi-stakeholder evaluation technique, a successful parent-mediated programme requires more than an outcome-focused evidence base (Dawson-Squibb et al., 2020).

### ***Benefit of programme implemented***

Parent or caregiver skill training programmes have been shown to lower parents' stress, gain new knowledge, and learn new strategies to deal with their children's behaviour by participating in the programme (Salomone et al., 2021; Sengupta et al. 2021). According to the research findings, parents identified additional benefits, such as increased self-confidence in regulating children's behaviour and integrating children into community settings (Dababnah et al., 2018).

Table 1: Key metrics and findings of review studies

Title, Author, Year, Country, Study Design	Participants/Population/Sample	Intervention implemented	Outcome Measure	Key finding and conclusion
Acceptability and feasibility of the World Health Organization's Caregiver Skills Training implemented in the Italian National Health System (2021) Salomone et al., 2021 Italy Mixed method study Two-arm randomised controlled trial of pilot test	86 caregivers of ASD-diagnosed children aged 24 to 60 months, recruited through child neuropsychiatry services in Italy.  Caregiver Skills Training (n = 43) or therapy as usual (n = 43) were given to 86 caregivers of children with autism spectrum disorder.	Intervention contents include: (a) getting and keeping children engaged (Sessions 1–2) (b) establishing play and home routines (Session 3) (c) understanding and promoting communication (Sessions 4–5) (d) promoting positive behaviour and reducing challenging behaviour (Sessions 6–7) (e) teaching new skills for daily living (Session 8) (f) caregiver well-being and problem solving (Session 9)  All sessions follow the same schedule: (a) wellness activity (b) review of previous session and of home visits (c) discussion of a caregiver's experiences (d) new content presentation (e) intervention strategy stimulations (f) caregiver role-play and home practice planning  The three Home Visits are conducted: (a) before the first group session (b) after Session 5 (c) after the group Session 9	<b>Quantitative assessment of feasibility</b> (a) Fidelity of intervention (b) Attendance tracking (c) Adherence to home practice (d) Group sessions' delivery  <b>Quantitative assessment of acceptability</b> (a) Acceptability of group session  <b>Qualitative assessment of acceptability (Focus group discussion)</b> (a) Positive practices (b) Barriers and challenges regarding delivery/participation in the programme (c) Acceptability, relevance and appropriateness of the programme (d) Perceived usefulness of intervention strategies and perceived impact on caregivers and children (e) Suggested revision to the programme materials, training and supervision models	<ul style="list-style-type: none"> <li>The program's attendance and adherence to home practise were both exceptional.</li> <li>It may be necessary to provide additional support to caregivers in order to enable them carve out time for practise while keeping the child engaged.</li> <li>The delivery of group sessions was deemed feasible, and the comprehensibility evaluations were excellent.</li> <li>Caregivers found the program's content and technique to be understandable, relevant to their needs, and consistent with the values of their families.</li> <li>The intervention strategies were assessed as useful across sessions, and the triangulation of qualitative and quantitative data revealed that group discussions were acceptable, useful, and enjoyable.</li> <li>This programme was found to be feasible, acceptable and useful for caregivers.</li> <li>CST qualified as a possibly essential component of a public health paradigm since the expenses of training facilitators and implementing it were lower than many other fee-based intervention programmes.</li> </ul>

<p>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 (2020)</p>	<p>10 caregivers with caring responsibility for a child aged 2–9 years with a developmental disorder and living.</p> <p>All participants were approached through Yekatit 12 Hospital and schools for CDD in Addis Ababa.</p>	<p>Ethiopian Master Trainees provided feedback on the content, length, and intensity of the CST.</p> <p>A WHO CST team member and a CST specialist working for Autism Speaks led an intense 5-day training in Addis Ababa to train seven Master Trainers in the CST method. Notes were recorded on any topics or exercises that trainees found difficult to grasp or where they recommended changes.</p>	<p>Acceptability was determined quantitatively by the people who agreed to participate in the CST programme, the percentage of people who stayed in group sessions and home visits, and the percentage of people who completed participant feedback questionnaires after each home visit.</p> <p>Feasibility was assessed quantitatively through timing each CST group session.</p>	<ul style="list-style-type: none"> <li>• To ensure community buy-in and programme fit, the consultation and evaluation process demonstrated the need of interacting with local stakeholders and experts. It was deemed appropriate and relevant to the Ethiopian environment by caregivers and programme facilitators.</li> <li>• The training improved carers' knowledge and abilities, as well as their ability to deal with their child's challenging behaviour and stress. It also reduced social isolation.</li> <li>• The training, according to caregivers, changed their view on their child's growth and the role they can play in it, as well as allowing them to connect with other caregivers and learn from other experiences.</li> <li>• By including local stakeholders, it was possible to identify socio-cultural barriers to programme implementation and how to overcome them. The WHO-CST initiative addressed a local demand and was practical and suitable for urban Ethiopia, according to the pre-pilot study.</li> </ul>
<p>Tekola et al., 2020</p> <p>Ethiopia</p> <p>Mixed method study</p> <p>Pre-pilot test</p>		<p>The adapted CST programme was pre-piloted in Addis Ababa's Yekatit 12 Hospital's child mental health clinic, supervised by a specialist and aided by two non-professional facilitators.</p> <p>Before being evaluated in the community, the programme was first tested in a clinical setting facilitated by professionals to allow for expert feedback.</p>	<p>Acceptability and feasibility was assessed qualitatively through in-depth interviews.</p>	
<p>World Health Organisation-Caregiver Skills Training (WHO-CST) Program: Feasibility of Delivery by Non-Specialist Providers in Real-world Urban Settings in India (2021)</p>	<p>Caregivers (n = 22) of children (2–9 years) with social-communication delays</p> <p>Four facilitators: three teachers and a psychologist</p> <p>Three Master Trainers with master's degrees in occupational therapy, clinical psychology, and special education. Has clinical experience (ranging from 3 to 12 years, with an average of 8 years) working with CDDs, including autism.</p>	<p>There are nine 2-hour group sessions and three home visits to enhance learning and development through shared activities between caregivers and children ("home" and "play routines").</p> <p>Facilitators will support caregivers with goal formulation (Home-visit 1), imposing strategies (Home-visit 2) across play and home routines, providing solutions to difficulties and having a self-practice session at the beginning, midway, and end of the intervention (Home-visit 3).</p>	<ol style="list-style-type: none"> <li>1) Program feasibility <ul style="list-style-type: none"> <li>(A) Demand</li> <li>(B) Acceptability</li> <li>(C) Implementation</li> <li>(D) Caregiver Attendance</li> <li>(E) Caregiver Fidelity</li> <li>(F) Parents self-reported adherence</li> <li>(G) Facilitator competency</li> </ul> </li> <li>2) The Caregiver Skills and Knowledge Measure (WHO-CST Team)</li> <li>3) The Parenting Stress Index-Short Form (PSI-SF)- 3<sup>rd</sup> edition (Abidin, 1995)</li> <li>4) Vineland Adaptive Scales (VABS)- 2<sup>nd</sup> edition (2005).</li> <li>5) Social Communication Checklist (SCC) (Ingersoll and Dvortcsak, 2010)</li> </ol>	<ul style="list-style-type: none"> <li>• When administered in an urban India setting, the WHO-CST programme is acceptable and practicable as a quick, low-dose parent-mediated intervention.</li> <li>• It was associated with better child developmental outcomes, such as social communication and adaptive behaviour, as well as increased caregiver activity and lower stress.</li> </ul>
<p>Sengupta et al., 2021</p> <p>India</p> <p>Mixed method study</p> <p>Pre-pilot test</p>				

**Table 2 : Mixed Methods Appraisal Tool (MMAT) Version 2018**

*Note: Yes indicates criteria met needs; No indicates criteria does not meet needs; CT indicates Can't tell*

Category of study designs Methodological quality criteria	Sengupta et al. (2021)	Salomone et al. (2021)	Tekola et al., 2020
<b>Screening questions (for all types)</b>			
Are there clear research questions?	No	Yes	Yes
Do the collected data allow to address the research questions?	CT	Yes	Yes
<b>1. Qualitative</b>			
1.1 Is the qualitative approach appropriate to answer the research question?	CT	Yes	Yes
1.2. Are the qualitative data collection methods adequate to address the research question?	CT	Yes	Yes
1.3. Are the findings adequately derived from the data?	Yes	Yes	Yes
1.4. Is the interpretation of results sufficiently substantiated by data?	Yes	Yes	Yes
1.5. Is there coherence between qualitative data sources, collection, analysis and interpretation?	Yes	Yes	Yes
<b>2. Quantitative randomized controlled trials</b>			
2.1. Is randomization appropriately performed?	No	Yes	No
2.2. Are the groups comparable at baseline?	No	No	No
2.3. Are there complete outcome data?	Yes	Yes	Yes
2.4. Are outcome assessors blinded to the intervention provided?	Yes	Yes	Yes
2.5. Did the participants adhere to the assigned intervention?	No	No	No
<b>3. Quantitative non-randomized</b>			
3.1. Are the participants representative of the target population?	Yes	Yes	Yes
3.2. Are measurements appropriate regarding both the outcome and intervention (or exposure)?	Yes	Yes	Yes
3.3. Are there complete outcome data?	Yes	Yes	Yes
3.4. Are the confounders accounted for in the design and analysis?	No	No	No
3.5. During the study period, is the intervention administered (or exposure occurred) as intended?	Yes	Yes	Yes

<b>4. Quantitative descriptive</b>			
<b>4.1. Is the sampling strategy relevant to address the research question?</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>4.2. Is the sample representative of the target population?</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>4.3. Are the measurements appropriate?</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>4.4. Is the risk of nonresponse bias low?</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>4.5. Is the statistical analysis appropriate to answer the research question?</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>5. Mixed methods</b>			
<b>5.1. Is there an adequate rationale for using a mixed methods design to address the research question?</b>	<b>No</b>	<b>No</b>	<b>No</b>
<b>5.2. Are the different components of the study effectively integrated to answer the research question?</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>5.3. Are the outputs of the integration of qualitative and quantitative components adequately interpreted?</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>5.4. Are divergences and inconsistencies between quantitative and qualitative results adequately addressed?</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>5.5. Do the different components of the study adhere to the quality criteria of each tradition of the methods involved?</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>

By involving parents in group discussions, such as joining online social media groups with other parents, all parents could gain social and emotional support by sharing their lived experience of caring for a child with a developmental disorder. This programme encourages participants to share and learn (Smythe et al., 2020). Based on the review findings, by involving in the programme, families reported improvements in their parent-child relationship in terms of an increased amount of time interacting positively with their children (Pellecchia et al., 2020). This beneficial outcome is consistent with earlier findings indicating that a positive relationship between a parent and child contributes to developing children's ability to regulate their emotions (Sengupta et al., 2021). Parent coaching is a highly collaborative approach that emphasises a close relationship with the family, as opposed to typical early intervention techniques that focus on children directly. Parents can decide the goal they want to attain, devise strategies, and work with the coach to put the plans into action in the real world (Chien et al., 2020).

#### ***Challenges or barriers during the implementation of the programme***

Participants highlighted several concerns with the parent or caregiver skill training programme, including difficulties ignoring children's challenging behaviour and engaging with children who have short attention spans (Sengupta et al., 2021). Distractions are noted explicitly due to the self-educated nature of the intervention in the home environment. Children with developmental disorders may have more unstructured homes than typically developing children and have a greater heritability rate for developmental disorders. (Johnston and colleagues, 2012). The presence of siblings, diversions from other household tasks, or being preoccupied with maladaptive child behaviour were all factors that made it difficult for parents to stick to the parent-mediated intervention programme (Tarver et al., 2021). When administering parenting programmes in low-resource areas, limited knowledge and stigma may reveal an additional layer of hurdles. Parental guilt, the need for a cure, and physical punishment were among the hurdles mentioned (Tekola et al., 2020). Some parents were unaware that playing with their children and rewarding them can help them grow and develop. Some parents were unwilling to give up their child's traditional methods of discipline, such as yelling and spanking, in favour of more constructive ways (Tekola et al., 2020).

### ***Critical implications for future implementation of the programme***

Method for developing flexible delivery was discussed to identify "core" and "optional" programme components in the World Health Organization's Caregiver Skills Training Programme for children with developmental disabilities (Salomone et al., 2019). Modules of the parent skill training programme are designed to be adapted in different orders depending on the requirements of families. Interventionists must be flexible to the changing context of therapy since they may need to deviate from session plans to help a family in need (Pellecchia et al., 2020). Furthermore, according to the findings of the studies, local specialists must be trained to offer a parent-training programme (Sengupta et al., 2021). In this setting, managing parent-training programmes using task-shifting approaches, in which local non-specialist providers are educated to provide ASD interventions, has proven to be effective in other low-resource countries (Salomone et al., 2021). More work is needed, however, to determine the optimal approach for delivering the combination of programme training and follow-up support, as well as to identify which participants are eligible and qualified to be programme trainers (Dababnah et al., 2018).

Local partners' input on cultural norms to the programme team was useful in tailoring the programme. Their continuous involvement aided the team in gaining a thorough understanding of some of the issues encountered during programme implementation (Tekola et al., 2020; Sengupta et al., 2021). Local partners should be carefully examined in light of politics, financial interests, and other factors that may affect programme delivery and participant recruitment and participation (Dababnah et al., 2018). Although some parents expressed a strong interest in participating in the programme, this positive attitude may not be shared by all parents of children with developmental disorders; some may seek out new techniques to help their child do well in the healthcare system (Tarver et al., 2021).

### ***Recommendations by participants or researchers about the implementation of the programme***

In addition, the investigations found that there is an urgent need to train local professionals to offer a parent-training programme (Sengupta et al., 2021). In this context, managing parent-training programmes through task-shifting methodologies (Salomone et al., 2021), in which local non-specialist providers are educated to provide ASD therapies, has been successfully implemented in other low-resource countries. However, further work is needed to determine the optimal technique for delivering a combination of programme training and follow-up support, as well as to determine whether participants are eligible and qualified to serve as programme trainers (Dababnah et al., 2018). There were some suggestions from parents about a range of potential adaptations that are reflective of the needs of multi-cultural settings, such as the use of interpreters in sessions, the development of videos with local parents and children (Salomone et al., 2021), and the need to translate materials into primary languages other than English (Salomone et al., 2021). (Dawson-Squibb et al. 2020). Several specific adaption ideas were also made, including longer sessions and the ability to access information or materials (Salomone et al., 2021).

The findings imply that parents prefer interventions that focus on the familiar social setting, such as at home, regardless of the parent training programme mode used. Suggestions like this can assist the programme in providing a more effective intervention to the youngsters (Salomone et al., 2021). Providing handbooks, reminders, or caregiver education are more closely related to parent training, in which therapists attempt to explain and demonstrate how to implement strategies in a straightforward manner (Salomone et al., 2019).

## **CONCLUSION**

Based on the three articles, through examining comprehensive qualitative and mixed study method data, the WHO-CST programme was feasible, acceptable, and satisfactory for caregivers. The feasibility of this programme needs to be explored further with a more robust research design due to minimal in-depth current studies. Therefore, future research efforts should be taken to investigate this program, using bigger sample size, broader participants' age range, and a more detailed study design, most preferably a Randomised Controlled Trial study design, in order to prove its effectiveness. The findings of these studies aid Malaysian researchers in developing an effective, fail-safe approach.

In conclusion, the WHO-CST programme identified four important review conclusions that served as the program's foundation. For starters, non-specialists can provide caregiver-mediated therapy to families of children with ASD who are early communicators and children with intellectual disabilities in community settings (Afzaal et al., 2019; Stahmer et al., 2005). Second, low-intensity programmes that need less practitioner time are more cost-effective and have been shown to improve child developmental and behavioural outcomes. Thirdly, a programme that emphasised problem-focused coping as a method for adjusting to the role and responsibilities of care was associated with more favourable adjustment and results than programmes that did not include this material (Hawken et al., 2018). Fourth, programmes that included both group and individual sessions had a more significant impact on social integration than programmes that exclusively used solo or remote sessions (Masi et al., 2011).

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