# Project 3i

Proof-of-Concept Report

August 2021 - January 2024



**EXECUTIVE SUMMARY** 



# Project 3i Proof-of-Concept Report EXECUTIVE SUMMARY

**Empowering Caregivers** 

Building an Inclusive Community



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# **Contents**

FOREWORD	5
By CEO & Project 3i Lead, Dr Lim Hong Huay	5
INTRODUCTION	7
Overview of disability landscape in Singapore	7
Gaps in caregiver support in Singapore	8
Project 3i alignment with national efforts	11
Objectives of Project 3i	14
DEVELOPMENT	16
Theoretical basis	16
Theory of change	16
IMPLEMENTATION	18
Implementation method	18
Implementation stages	18
EVALUATION	20
Evaluation methods	20
Evaluation matrix for choice of outcome measures	20
RESULTS	22
CONCLUSIONS & NEXT STEPS	27
RECOMMENDATIONS	28



ANNEX	29
ACKNOWLEDGEMENT	31
REFERENCES	32



# **FOREWORD**

#### By CEO & Project 3i Lead, Dr Lim Hong Huay

The World Health Organisation (WHO) estimated that 16% of the world population, or 1.3 billion people has moderate to severe disabilities<sup>1</sup>. In Singapore, it is estimated that there are approximately 350,000 persons with disabilities across all ages, including those with psychosocial and developmental disabilities <sup>2</sup>. If an average household has four members, at least one million people (about 1 in 5)<sup>3</sup> are directly impacted by disability in their everyday lives. Assuming each person with disability is cared for by at least one informal or family caregiver, there are over 350,000 informal or family caregivers, or 8.7% of Singapore's resident population who are informal or family caregivers of persons with disabilities<sup>4</sup>. With an ageing population, the impact of Disability and the importance of caregiver support can only increase in future.

From 1 Jan 2021 to 31 Jan 2024, CaringSG developed and implemented the 3i caregiver support service model in the pilot project, Project 3i. The Project 3i received visionary funding support from the Temasek Foundation, Tote Board Enabling Lives Initiative, NCSS and SG Enable. It was the anchor project under the Alliance for Action for Caregivers of Persons with Disabilities, strongly supported by MCCY and MSF in the Singapore Together movement.

With disability prevalence set to increase in years ahead, caregiver support is no longer a "good-to-have", but a "must have" for the Singapore society to cope. Contributing to this strategic transformation in Singapore's disability services, Project 3i has provided a proof-of-concept for the 3i caregiver support programmes. In 3 years, Project 3i impacted more than 3000 caregivers and families of persons with disabilities and 1000 members of the public. The project has catalysed a paradigm shift in the way Singaporeans view caregiver support in the last 3 years.

The success of Project 3i is not by chance, but by strategic planning, meticulous design, collaborative partnership, scientific implementation and rigorous evaluation. In the Proof-of-Concept (POC) full report, we share the invaluable experience gained through Project 3i in detail, including the theoretical underpinnings of 3i caregiver support service



model, theory of change, programme logic model, development and implementation methodology, evaluation methodology, results, discussions and recommendations for the future. This Executive Summary, however, contains key excerpts from the full POC report to aid stakeholders gleaning the rich findings from the Project 3i. Please contact our friendly CaringSG team by email at <a href="mailto:contact@caring.sg">contact@caring.sg</a>, if you would like to receive a copy of the Project 3i POC full report.

On behalf of the CaringSG Project 3i team, I would like to thank all funders, partners and volunteers for your faithful support and strong encouragement through the project period. Most importantly, the Project 3i POC report and Executive Summary are dedicated to all caregivers of children with special needs and persons with disabilities. Thank you, caregivers, for not giving up. Thank you, caregivers, for the compassion to give back. Thank you, caregivers, for the courage to be the agent of change in Singapore's disability story.

#### Dr Lim Hong Huay,

Founder & honorary CEO, CaringSG Limited Mother of 3 children, 2 with Disabilities Paediatrician, MBBS, MRCP(UK), MMed (Singapore), GDMH (mental health), FAMS (CPCHS) Epidemiologist, MScEpi (UK), DLSHTM



# INTRODUCTION

#### Overview of disability landscape in Singapore

The World Health Organisation (WHO) estimated that 16% of the world population, or 1.3 billion people has moderate to severe Disabilities<sup>5</sup>. WHO re-defined disability by adopting a functional approach based on the bio-psycho-social model, and thenceforth classified Disability based on the International Classification of Functioning, Disability, and Health (ICF). Since 2001, the global definition of disability is "any condition of the body or mind (impairment) that makes it more difficult for the person with the condition to do certain activities (activity limitation) and interact with the world around them (participation restrictions)". Disability is thus the result of the interaction between health conditions and a range of environmental and personal factors. Hence since 2001, disability encompasses physical (congenital or acquired), sensory (deafness or blindness), developmental, cognitive (or intellectual), and psychosocial (or mental) disabilities.

In Singapore, the Ministry of Social and Family Development defined person with disability in the 3rd Enabling Masterplan (EMP3) and the latest Enabling Masterplan 2030 (EMP2030) as "those whose prospects of securing, retaining places and advancing in education and training institutions, employment and recreation as equal members of the community are substantially reduced as a result of physical, sensory, and intellectual disabilities as well as autism". In the social service sector, these are often termed "visible" disabilities. This definition is in contrast with the WHO's broader definition, which also includes "invisible" disabilities.

Invisible disabilities are psychosocial disabilities and other developmental disabilities that often lead to significant challenges in functioning in daily living contexts, such as work, school, or communities. Examples of psychosocial and developmental disabilities are Schizophrenia, Mood disorders, Dementia, Attention Deficit Hyperactivity Disorder (ADHD), Asperger's Syndrome, Dyslexia, Dyspraxia or Developmental Coordination Disorder, Social Communication Disorder, and Dyscalculia.

Based on the globally referenced WHO's definition, reported prevalence statistics from Ministry of Health (MOH), Ministry of Education (MOE) and Ministry for social and family



development (MSF), as well as the population denominators from Department of Statistics (DOS) of Ministry for Trade and Industry (MTI) <sup>4</sup>, the total population of people with visible and invisible disabilities in Singapore is estimated at 760,100, or 19% across all ages. Based on MSF's definition, the estimated number of persons with disabilities will be about 350,000, as illustrated in the table below.

Groups	Ages	Visible <sup>6</sup>	Invisible <sup>7</sup>	Psychosocial	Total
Children	0-4	5000 (3%) <sup>1</sup>			95,600
& youth	5-19	13,000 (2.1%) <sup>2</sup>	27,000(4.4%) <sup>3</sup>	50,600 <sup>4</sup> (12%)	
Adults	20-49	59,000 (3.4%) <sup>2</sup>		405,500 <sup>5</sup>	664,500
	>50	200,00 (13.3%) <sup>2</sup>		(13.4%)	
Total		277,000	27,000	456,100	760,100

<sup>&</sup>lt;sup>1 & 5</sup> MOH; <sup>2</sup> Enabling Masterplan 2017; <sup>3</sup> MOE; <sup>4</sup> NUS YEAR study

#### Gaps in caregiver support in Singapore

If every person with disability has a family or informal caregiver, there are about 350,000 caregivers in Singapore. Research has shown that all caregivers benefit from support<sup>6</sup> and more can be done in Singapore<sup>7-9</sup>. Caregiver needs and challenges can be related to dependent's needs, caregiver's personal needs and family needs.

#### <u>Dependent-related caregiving challenges</u>

• Difficulties navigating the complex and confusing Disability service landscape throughout their lifetime <sup>10-13</sup>. There is a lack of handholding for caregivers who often find themselves the only ones who piece together the different support programs and services which are not well integrated to-date e.g. health, social, educational, vocational and legal services, as they journey with their loved ones through different life stages,

<sup>&</sup>lt;sup>6</sup>Visible Disabilities – Physical, Sensory, intellectual; Mod-severe Autism

<sup>&</sup>lt;sup>7</sup> Invisible Disabilities – Developmental



resulting in support gaps. The quality of caregiver support is often exacerbated by the lack of coordination between stakeholders and confusion over the multiple schemes available. Especially vulnerable are the ageing caregivers and those who are not sufficiently equipped because of educational or literacy limitations or insufficient resources.

- High caregiving burden. An increasing number of caregivers care for multiple persons with disabilities. This is contributed by the rising prevalence of disability, as well as an ageing population and increased diagnostic capability. The small size of the average Singaporean household and the increased obligations of the "sandwich generation" also call for adult children to take up multiple caregiving roles <sup>14,15</sup>, thus exacerbating caregiver stress and caregiving burden.
- Lack of respite support and self-care. This may be the result of the lack of awareness of support services and the importance of self-care among caregivers. The Singapore system and culture of self-reliance often puts the caregivers under great pressure to balance the demands of career and family responsibilities as well as find time to care for oneself. Sole caregivers are often constantly in survival mode, responding to crisis situations. They struggle for the time and capacity to decide on the best way to improve the situation for the care recipient and themselves. In the NCSS QoL survey for caregivers, 37% of caregivers did not seek help. Of these, 64% could not access help because they were sole caregiver<sup>6</sup>. The other reasons for not seeking help include caregiver feeling that they should be caring for the dependent rather than getting others to help (24.6%), they feel that they do not need help (16.1%), they do not have financial resources to seek help (12%), or do not know where to seek help (9.5%). Some are just overwhelmed by the daily caregiving challenges to seek formal support.

#### **Unmet Caregiver needs**

• Impact on psychological well-being and physical health. Caregivers suffer from long-term caregiving and high caregiving burden, often leading to poor mental and physical health. Yet many caregivers were unable to seek necessary services adequately to meet their psychological and physical needs, because of logistic and financial constraints due to caregiving responsibilities. In NCSS' 2015 survey on the quality of life of adults with disabilities, 4 in 10 caregivers were psychologically distressed and more than 6 in 10 felt burdened by the weight of their caregiving duties 6.16. For caregivers of those with Autism, international studies showed that they suffer



from greater mental health issues compared to caregivers of persons with other disabilities, mental health conditions or elderly <sup>17</sup>.

- Reduction in financial resilience. Caregivers risk missing out on opportunities for career progression, self-development and personal growth. Over time, caregivers suffer from reduced financial resilience and financial security. According to the Ministry of Manpower (2018), 10.9% of men in Singapore and 3.2% of women indicated that they were not working due to caregiving responsibilities for families/relatives<sup>18</sup>. Such financial insecurity also affected the emotional well-being of caregivers in the long run.
- Lack of knowledge and skills in caregiving. Disability is life-long, and a caregiver needs
  to learn many things throughout the life course of caregiving. Knowledge of
  disabilities, the intervention methods and whereabout of appropriate services are
  often knowledge privileged to professionals, and not necessarily well-covered in
  caregiver education and training programs available prior to the inception of the
  Project 3i. Some caregivers also suffer from disabilities themselves and are thus
  unable to effectively acquire knowledge and skills required for optimal caregiving.

#### **Impact on Families**

- Strained family relationships and weakened social support. Caregiving redefines relationships and dynamics in the family. As family members find their roles and responsibilities conflicted with personal expectations and aspirations, conflicts ensue. Due to avoidance, stigma or shame, many families find it difficult to talk openly about evolving caregiving issues. Over time, families living with disabilities often become estranged from extended families or become increasingly isolated from natural social circles of support, the neighbourhood, and the larger community.
- Increased prevalence of marital discord and family violence. Family and marital discord are more commonly observed among families with children with special needs and persons with disabilities. These family issues add to caregiver stress and lead to poor caregiver and caregiving outcomes. Divorce rates are higher in families living with disabilities, resulting in more cases of sole caregiving and further lowering the social capital of families and long-term financial resilience of caregivers. Domestic violence is also more common and often, the main caregiver and dependents are both victims. At present adequate legal and social provisions



for protection of caregivers suffering from spousal neglect are still lacking, leading to sole caregivers (who are often mothers) often inadequately supported.

Research has shown that effective support for caregivers should be timely, individualised, outcome-focused, family-centred and community-based <sup>19-21</sup>. This support also ought to be from cradle-to-grave. Unlike acquired disability resulting from ageing, most developmental, intellectual and learning disabilities are early onset and lifelong, with the dependent usually outliving the caregiver. Despite many efforts prior to 2021<sup>9,11</sup>, Singapore still lacks a robust and holistic special needs caregiver support model that can support caregivers and caregiving across life stages.

#### **Project 3i alignment with national efforts**

In the past decade, there has been increasing awareness of the challenges faced by caregivers and the need to support them better, especially in the community. Enhancing caregiver support has been identified as a key national strategy to improve the lives of persons with disabilities and children with special needs in Singapore since the 2nd Enabling Masterplan (2012-2016)<sup>22</sup>. In the 3rd Enabling Masterplan (EMP3), caregiver support was highlighted as one of the 4 key thrusts to guide disability initiatives from 2017 to 2021<sup>2</sup>.

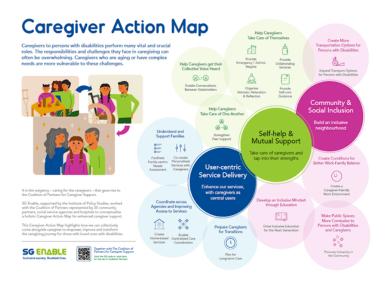
Aligned with the EMP3 recommendations, there has been much effort in enhancing caregiver support at the Social Service Agencies (SSAs) where the persons with disabilities are being served. The importance of strengthening support for caregivers was also highlighted during Emerging Stronger Conversations & Conversations on Singapore Women's Development<sup>23</sup>.



#### Alliance for Action (AfA) for Caregiver Support 2017-2021 2018-2021 **GROUND FEEDBACK FOCUS** Strengthening support for Ride on Caregiver Action Map caregivers of PWDs also developed by SGE, Coalition of highlighted during Emerging Partners (COP) & IPS, with focus Stronger Conversations & on developing solutions related to Conversations on Singapore self-care and mutual support Women's Development **ALIGN TO NATIONAL** CONCEPTION **PLANS** Formation of AfA by Complement EMP3 on improving NCSS and SG Enable caregivers' well-being and for caregivers of enhancing caregiving capabilities persons with disabilities through network of support announced during COS An Overview

COS – Committee of Supply; EMP3 – 3'd Enabling Masterplan; IPS – Institute of Policy Studies; person with disability – Persons with Disabilities; SGE- SG Enable

The formation of the Coalition of Partners for Caregiver Support (Coalition) also helped SSAs to share and learn from each other on how to support the caregivers of clients with disabilities better. Through the Coalition engagements, the Caregiver Action Map was developed by SG Enable in collaboration with SSAs, hospitals, and Institute of Policy Studies in 2019. This action map further expounds on the need to develop services that are user-centric, ecosystem to promote self-help and peer support, and last but not least, build inclusive neighbourhoods in the community.



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Aligned with these national efforts, CaringSG is a strategic ground-up initiative by caregivers for caregivers to meet the critical and present gaps in Singapore's disability sector. Established as a charity and now an Institution of Public Character, CaringSG aims to connect, equip, and empower all caregivers of persons with disabilities to find necessary life-long support and to build inclusive communities of caring in the Singapore Together Spirit. CaringSG is unique in being an alliance of 25 established informal caregiver support groups, championed initially by more than 50 caregiver leaders and advocates. These caregiver support groups, though informal, have a cumulative reach of more than 8000 caregivers in Singapore, and several have been established for more than 10 years. CaringSG's CAN is thus deeply rooted and integrally connected with the organic caregiver social networks. This allows CaringSG to uniquely reach out to caregivers who are currently not served by SSAs or are still struggling even though the dependents are receiving SSA services, or who have fallen through the cracks of mainstream services.

As CaringSG is a caregiver-focused organisation with caregivers as primary beneficiaries, our support programs are open to caregivers from all SSAs, irrespective of where their dependents are currently receiving disability services. We also serve caregivers irrespective of the dependent's diagnosis or age, thus enabling us to journey with the caregivers across life-stages and across SSA programmes. This allows us to overcome the silos effect of disability and age-specific programs and alleviate the perennial lack of transition support across lifespan. Cross-systemic gaps and cross-cutting issues in the caregiver support landscape can thus be better identified as we journey with caregivers across programs, life-stages and service sectors e.g. health, social and educational.

Recognizing our unique position in bolstering existing caregiver support landscape, CaringSG was invited into the Coalition of Partners in February 2021. Furthermore, following the February 2021 budget announcement, CaringSG was tasked as co-lead for the Core Action Team of the Alliance for Action (AFA) for caregiver support, together with the Office of the Director-General of Social Welfare (ODGSW), Ministry of Social and Family Development.



#### **Alliance for Action Implementation**

#### **KEY PROJECTS**

- Project 3i led by CaringSG, to pilot model of community and peer support for caregivers
- Community Circles co-led by IPS & CaringSG to rally and connect groups of volunteers to caregivers to offer practical support in daily lives



#### **STRUCTURE**

- Led by SGEnable & NCSS
- Co-chaired by CaringSG & ODGSW
- Driven by a Core Action Team, with representatives from 3P partnership to contribute expertise and networks

#### **Collaborations & Sharing**

- Insights & best practices sharing among SSAs and private providers to uplift the sector
- Other interested organisations & members of public contribute as collaborators/partners to AfA projects

IPS – Institute of Policy Studies; NCSS- National Council of Social Services; SSA – Social Service Agencies

Formed by the NCSS and the SG Enable to complement the efforts of the Enabling Masterplans, the AfA was put in place in recognition of the diverse strengths and desire of multi-sector stakeholders in wanting to do more to collaborate and solve social issues. In March 2021, Project 3i was included as the key project for this AfA<sup>24</sup>. Through the AfA, CaringSG aimed to share insights & best practices among SSAs and private providers to uplift the sector, and to interest more organisations & members of the public to contribute as collaborators or partners to caregiver support initiatives.

#### **Objectives of Project 3i**

The Project 3i by CaringSG aims to

- 1. Improve the outcomes of caregivers, persons with disabilities and families through outreach and support to caregivers to enhance personal self-efficacy and resilience, caregiving quality and reduce caregiving burden. These are achieved by
  - enlarging and strengthening caregiver's ecosystem of support through community and peer outreach, and organisation of inclusive community events, aiming to reduce social isolation and improving the community participation of caregivers and persons with disabilities



- ii. improving caregiving knowledge and skills, as well as self-care among caregivers. This is to be achieved through provision of online resources, physical events, peer support and professional guidance
- iii. improving the access and utilisation of needful services by caregivers and persons with disabilities through intentional service coordination supported by professionals and peer caregiver volunteers.
- iv. empowering caregivers to work in effective collaborative partnership with professionals and community stakeholders, by providing training and volunteering opportunities, and case management.
- 2. Build the capacity of communities to be supportive to caregivers and inclusive for persons with disabilities through training and co-organization of outreach and inclusive activities in collaboration with grassroot organisations (GRO), corporates, institutions, social service agencies, professionals and volunteer groups.



# DEVELOPMENT

#### Theoretical basis

The 3i programmes are developed based on the principles and theoretical constructs detailed in Annex I of the full POC report (available upon request from <a href="mailto:contact@caring.sg">contact@caring.sg</a>), which were based on international research and practice-based evidence. The 3i programmes are also well-aligned with Singapore's national recommendations <sup>25-33</sup>. The above theoretical underpinnings were integrated to form the "3i" principles of the 3i programmes

#### 1. Integration of social-health services

Based on the WHO's **Biopsychosocial** and Bronfenbrenner's **Bioecological** models, social and health services are integrated and delivered through **transdisciplinary approaches**.

#### 2. Individualisation of support programs

Guided by the unique strengths and needs of the caregiver, dependent, family and community, 3i programmes apply practices for **Person-Centred Planning (for caregivers and dependents)**, **Family-Centred Care**, and **Asset-Based Community Development approaches**.

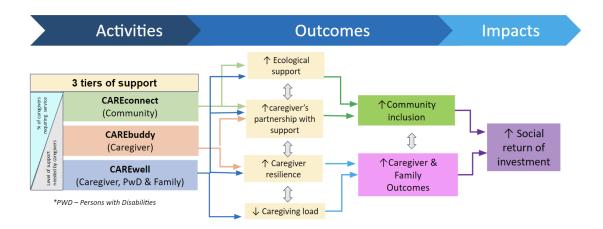
#### 3. <u>Impact-driven and Outcome-focused programmes</u>

Leveraging on collaborative partnership for synergistic impact to maximise social returns of investment (SROI), the 3i programmes are outcome-focused aiming for sustainable long-term impact.

#### Theory of change

The 3i principles are operationalised based on the Theory of Change (ToC) and Programme Logic Models (PLM) detailed in the full POC report. The 3i programmes are a continuum of tiered services that cater to all disabilities and evolution of needs across life-stages of caregivers and the dependents. The Theory of Change (ToC) of the 3i programmes is summarised diagrammatically below





#### Though 3i programmes, we aspired for

- the growth of every caregiver to become well and empowered, so that the caregiver realises his or her own potential and be able to continue to contribute positively to the community and society.
- that each Singaporean will learn to empathise and include persons with disabilities and their caregiver in community living.



# **IMPLEMENTATION**

#### Implementation method

Good outcomes for beneficiaries come from good implementation of good programmes. Good implementation is guided by good science. Implementation science is the scientific field those studies and applies methods or strategies to put evidence into programmes, practice and policy, so as to effect real-life benefits. It systematically closes the gap between what we know and what we do, often referred to as the "know-do gap".

In Project 3i, we applied the implementation frameworks of the National Implementation Science Network (NIRN), such as implementation stages, drivers and teams to guide our project efforts. Details on the implementation drivers and teams of 3i programmes are in Annex VII of the full POC report. In addition, in developing, implementing, evaluating and improving the various programme components, we adapted the Getting-to-Outcomes (GTO) 10 steps of empowerment evaluation. This methodology is illustrated in the CAREkaki Programme Implementation Guide, a toolkit created by the Project 3i team to support grassroots and SSA in replicating and implementing the CAREkaki programme in their precinct.

#### Implementation stages

The Project 3i was conducted in various phases and stages between October 2020 and March 2024. The table below summarises the timeline of the project:

Activities	Period
Exploration & Stakeholder Engagement	Oct 2020 - Jul 2021
Development of 3i programmes	Oct 2020 - Jul 2021
Installation Jan 2021 - Jul 2021	
Phase 1 (Aug 2021 - March 2023)	
Initial Implementation	Aug 2021 - Mar 2023
Program monitoring	Aug 2021 - Mar 2023



Rapid cycle improvement	Oct 2022 - Mar 2023
Formative Evaluation	May 2022 - Mar 2023
Phase 2 (Jan 2023 - Dec 2023)	
Full Implementation	Apr 2023 - Jan 2024
Program monitoring	Apr 2023 - Jan 2024
Summative Evaluation	Apr 2023 - Mar 2024
Sustainability & Scale-up planning	Feb 2024 - Mar 2024



# **EVALUATION**

#### **Evaluation methods**

The evaluation of Project 3i was conducted in 2 phases. Mixed qualitative and quantitative methods were used in both phases of evaluation. The first phase of formative evaluation was conducted by Centre for Evidence and Implementation (CEI) and the methods are described in detail in the CEI report (also available upon request at contact@caring.sg).

For the Summative evaluation phase, we learnt from the experience and recommendations of CEI and continued close Output monitoring and rigorous Outcome measurement, collecting both quantitative and qualitative information through surveys administered to beneficiaries and participants.

#### Evaluation matrix for choice of outcome measures

To ensure that the quantitative measures yield information that are informative towards the Theory of Change, the research team utilised a 3i Evaluation matrix, as below, to rationalise the choice of survey questionnaires for outcome measurement in Project 3i. In addition, we referred to NCSS's Sector Evaluation Framework<sup>34</sup> and Service Standard Playbook<sup>35</sup>. The Formative Evaluation methodology was decided and implemented by the Centre for Evidence and Implementation (CEI) team in consultation with the Translational Social Research Division of NCSS. The Summative Evaluation was conducted internally by the CaringSG POC team using the quantitative methodologies established in the Formative Evaluation phase. Surveys were conducted for beneficiaries of the programmes, including caregivers and volunteers.



	3i-TOC domains							
Measurement tools	Ecological support (A) - quantity and level of support after access & utilisation	Caregiver-Ecosyst em partnership (B) -opportunity to access & utilisation	Caregiver resilience (C) - emotional health, physical health, knowledge/skills/ efficacy/mastery, security	Caregiving load (D) - frequency, level of needs, types of disability/needs; role strain; personal strain	Caregiver outcome (E) - attitude & behaviour, QOL - wellbeing/QOL	Family outcome (F)	Community Inclusion (G)	Programme
Social Impact Measurement (SIM) toolkit	Item 2 (OC3)	Item 1,3,5,7 (OC3 &4)					Item 4,6,8 (OC4)	CAREconnect
Zarit Burden Interview (ZBI)				yes				CAREwell
Carer Wellbeing and Support Questionnaire (CWS)			yes	yes	yes			CAREwell CAREbuddy
Family Outcome survey (FOS)	yes	yes	yes			yes	yes	CAREwell CAREbuddy
WHOQOL-BREF	yes	yes	yes		yes			CAREwell



# **RESULTS**

The 3i programmes, CAREconnect, CAREbuddy and CAREwell, were developed and implemented from January 2021 to January 2024 as part of Project 3i. As the 3i programmes in the Project 3i are well-aligned with Singapore's national directions and efforts to build a strong caregiver support system for caregivers of persons with disabilities, the findings and results of the project can contribute strategically to the development of holistic caregiver support services in Singapore, as aspired in the Enabling Masterplan 2030. The results of Project 3i reported in the full POC report and this Executive Summary are based on data collected for the 3i programmes between August 2021 to January 2024 and summative evaluation conducted internally in January to March 2024 under POC funding from SG Enable.

The key findings and learnings from the Project 3i are as below:

- 1. Comprehensive mixed method evaluation of Project 3i showed that most of the target outputs were achieved, resulting in strong positive outcomes among caregivers, persons with disabilities and their families. The POC of the 3i programmes was clearly established. Overall, the implementation of the 3i programmes in Project 3i between January 2022 to December 2023 reached more than 3150 caregivers with more than 14,550 touchpoints<sup>1</sup>. More than 4780 touchpoints with persons with disabilities and members of public<sup>2</sup> were made during the project period. In addition, more than 170 partners and agencies were engaged during the Project 3i pilot period to enable successful implementation of the programme to achieve the target outputs and outcomes.
- 2. The results of the **CAREconnect programme** (from January 2022 to December 2023) are as follows:

<sup>&</sup>lt;sup>1</sup> This totals the number of caregivers who registered for CaringSG membership, connected to support groups, received triage calls, attended webinars & CAREconference, CAREconnect events or CAREcarnival, as well as total touch points by CAREkaki, CAREchampion, CAREbuddy or CAREwell key workers (3169+1668+2608+1464+506+3649+287+811+432=14,594)

<sup>&</sup>lt;sup>2</sup> This totals the number of persons with disabilities and members of public who became CaringSG members, and number who attended webinars & CAREconference, CAREconnect events or CAREcarnival (791+942+509 + 2543=4785)



- a. More than 1650 caregivers were connected to support groups, out of whom 59% were not in any support group prior to Project 3i. Caregivers who joined the CaringSG Alliance Network (CAN) of Project 3i reported increased knowledge of available care and support for persons with disabilities after 6 months of enrolment into CAN. The knowledge gained had helped caregivers to access information to plan and make informed decisions. The caregiver members also reported increased opportunity and level of participation in community life through CAN. In addition, more than 53% to 79% reported being able to better connect to other caregivers, able to care for themselves and their child/dependent better and would recommend the 3i programmes to other caregivers.
- b. A total of 24 **Webinars** & 1 **CAREconference** were organised and garnered a total registration of more than 2600 caregivers. In addition, more than 940 persons with disabilities and members of public registered for the webinars & CAREconference<sup>3</sup>. The caregivers who attended webinars and CAREconference reported improved access to information to plan and make informed decisions for themselves and their dependents. In addition, attending the webinars helped 88% of caregivers to learn to care for their child/dependent better, and 74% of caregivers to learn to care for themselves better.
- c. Over 1460 caregivers participated in the 73 CAREconnect events and more than 500 attended the 3 CAREcarnivals. Additionally, more than 500 persons with disabilities joined the CAREconnect events, while over 2540 persons with disabilities and members of the public attended the CAREcarnivals. Caregivers who attended these events reported significantly improved access to information to plan and make informed decisions. They also reported enhanced opportunities for social, family and community participation. Between 80% and 86% of caregivers felt more included in the neighbourhood, connected with other caregivers, and learned to better care for themselves and their child/dependents through participating in the CAREconnect events and CAREcarnivals.
- d. The CAREkaki & CAREchampion programme were implemented in 6 constituencies, namely Boon Lay, Kampong Glam, Bukit Batok East, Nanyang, Telok Blangah and Pioneer. From these constituencies, more than 80 grassroot and community

 $<sup>^3</sup>$  Total number of PWD and members of public who attended webinar and CAREconference (654+288=942)



volunteers were trained as CAREkaki. A total of 89% to 100% of CAREkaki gave favourable ratings for CAREkaki training programme structure, learning management and workshop content and delivery methods, and instructor quality and effectiveness. In addition, 94 % to 98% of the CAREkaki reported that they gained useful knowledge and skills in supporting caregivers, were better able to recognize someone with disability or special needs and were more confident and comfortable to help someone with disability or special needs after the training. After the training, the CAREkaki used the knowledge and skills gained to outreach to the residents in pilot neighbourhoods. More than 3600 touchpoints with caregivers were made by the CAREkaki through neighbourhood-based CAREconnect events and the national CAREcarnivals. The outreach efforts of the CAREkaki were supported by 10 CAREchampions. The CAREchampions are caregiver volunteers trained by CaringSG to support outreach in the community. The CAREchampions also made more than 280 touchpoints with fellow caregivers during the CAREconnect events and CAREcarnivals.

- 3. From August 2021 to January 2024, the **CAREbuddy programme** helped more than 95 caregivers through more than 800 touch points during the pilot period.
  - a. More than 78% of caregiver beneficiaries found the CAREbuddy programme to be a safe space to share their thoughts and concerns. Among supported caregivers, 93% would recommend the programme to other caregivers, and the net promoter score was very high at 52%. In addition, 89% to 100% of caregiver beneficiaries feedback that the CAREbuddy helped the caregivers to consider changes needed to improve their family life and explore strategies and resources to do so. In addition, 83% of caregivers felt more confident and competent as a caregiver after the CAREbuddy support.
  - b. Caregiver beneficiaries also achieved significantly improved family outcomes through the CAREbuddy support programme. Specifically, the caregiver beneficiaries were able to better understand their dependent's strengths, needs, abilities, knowing their rights and advocating for their dependents, helping their dependent to develop and learn, having better support systems and accessing the community activities. In addition, through the CAREbuddy support, the caregivers' well-being improved significantly. Improvements were especially in terms of relationship with family and



friends, emotional and physical health. The dependents also benefited in terms of becoming safer to themselves and others.

- c. To equip the CAREbuddy and CAREchampion adequately, 5 runs of the **caregiver volunteer training** were conducted. A total of 52 caregiver volunteers were trained, of whom 42 chose to serve as CAREbuddies, and the remaining 10 as CAREchampions. In terms of training outcomes, a total of 85% to 100% of caregiver volunteers who were trained gave favourable ratings for caregiver volunteer training programme in terms of programme content, delivery mode and trainer quality. 97% of caregivers who received the training recommended the course to other caregivers, and the net promoter score was very high at 59%. In addition, 85% to 100% of Caregiver volunteers reported gaining caregiving knowledge and skills, as well as knowledge, skills and confidence to support fellow caregivers effectively.
- 4. Lastly, from January 2022 to September 2023, the **CAREwell programme** supported caregivers and persons with disabilities with complex needs through a total of 67 CAREwell packages.
  - a. A total of 92% of caregivers offered the CAREwell programme completed the programme and showed improvement in terms of caregiver well-being, caregiver and dependent goals attainment, and family situations. Between 72% to 83% of caregivers supported by CAREwell key workers feedback that they have received sufficient support from the CAREwell programme team and received information on resources caregivers or their family needed. In addition, 72% of supported caregivers gained new knowledge that helped to increase their confidence and competencies as a caregiver, and 58% were able to make positive changes to improve their own and their families' lives. The caregiver beneficiaries of CAREwell programme also improved significantly in their family outcomes in terms of being able to better understand their dependent's strengths, needs, abilities, knowing their rights and advocating for their dependents, helping their dependent to develop and learn, having better support systems and accessing social, recreational, or religious activities that the family want, and they were able to do things that the family enjoy together.
  - b. Caregiver beneficiaries of CAREwell programme also reported significantly improved well-being, especially in terms of having enough time for self, being able to



find alternative caregiving arrangements, having plans for future care, lesser strain in relationship with dependent, getting more support from friends and families, improvement in financial situation and having better sleep. In terms of quality of life, there was improvement in physical and psychological health, as well as social relationships through the CAREwell key worker support.

c. In terms of caregiving burden, the CAREwell programme helped caregivers to have reduced caregiving burden, such that caregivers have more time for themselves. The caregivers feel less stressed between caring and meeting other responsibilities and the dependent affects the caregiver's relationship with others less negatively. The caregivers felt less strained when around the dependent, and their health suffered less despite their involvement with the dependent.



# **CONCLUSIONS & NEXT STEPS**

- 1. Overall, the outputs and outcome targets of Project 3i were successfully achieved during the pilot period, and Proof-of-concept was established. Future caregiver support service frameworks can similarly employ the 3i principles to provide person-centric, family-centred and community-based interventions for caregivers.
- 2. Continual efforts and funding to sustain and upscale the 3i programmes are critical in maintaining the improvement in family outcomes, caregiver outcomes and outcomes of persons with disabilities, and community's capacity for inclusion achieved through Project 3.
- 3. The CAREconnect, CAREkaki and CAREbuddy programmes of the Project 3i are being upscaled through funding from SG Enable in 2024. In addition, the CAREkaki programme will be upscaled in concurrence with the implementation of the Enabling Service Hub.



# RECOMMENDATIONS

- 1. With an expected increase in the number of persons with disabilities requiring post-18 services and thus the number of caregivers requiring support in this and the coming decades, it is imperative for sufficient caregiver support programmes to be implemented to reduce the number and proportion of persons with disabilities requiring institutional services in future.
- 2. The post-7 cliff effect for caregivers of children with special needs ought to be further studied, and more caregiver support programmes should be implemented as early as possible to continue to support, equip and empower caregivers after exit from early intervention programmes. Implementing caregiver support upstream in the disability service chain can prevent early institutionalisation of persons with disabilities, and also lead to better outcomes for persons with disabilities.
- More action research needs to be conducted to develop, adapt, and implement effective caregiver support programmes, and robust evaluation methodology ought to be employed to strengthen the evidence-base for caregiver support programmes in Singapore.



# **ANNEX**

#### Contents of full POC report are as below:

FOREWORD	9
By CEO & Project 3i Lead, Dr Lim Hong Huay	9
EXECUTIVE SUMMARY	11
Context of Project 3i	11
Purpose of report	12
Key findings	13
Conclusions and next steps	17
Recommendations	17
PART 1 - INTRODUCTION	19
Overview of disability landscape in Singapore	20
Gaps in caregiver support in Singapore	21
Project 3i's alignment with National Efforts	24
PART 2 - METHODOLOGY	28
A. DEVELOPMENT of 3i PROGRAMMES	29
Principles and conceptual frameworks	29
Theory of change (ToC)	30
Programme logic model	33
B. IMPLEMENTATION METHODS	35
Implementation stages	36
Reach of CAREbuddy	57
Acceptability & appropriateness	
Feasibility	
Evaluation Findings	59
Effect of CAREbuddy support on caregiver and CAREbuddies	59
C. CAREWELL PROGRAMME	
Development outcomes	65
Implementation outcomes	
Reach of CAREwell	
Acceptability & appropriateness	
Feasibility	
Evaluation Findings	
Effect of CAREwell on caregivers and families	
PART 4 - DISCUSSION	
A. INTERNAL FACTORS AFFECTING IMPLEMENTATION	
CAREconnect programme	
CAREbuddy Programme	
CAREwell Programme	
B. EXTERNAL FACTORS AFFECTING SUSTAINABILITY & UPSCALING	
CAREconnect Programme	
CAREbuddy Programme	
CAREwell Programme	
	O(

C. EVALUATION METHODS	39
Collection of Output Administrative Data	39
Choice of outcome measurement tools guided by 3i evaluation	matrix 39
Social Impact Measurement (SIM) Toolkit	40
Family Outcome Survey-revised (FOS-R)	41
Carer Wellbeing and Support Scale (CWS)	41
WHOQOL-BREF	42
Abbreviated 6-item Zarit Burden Interview (ZBI)	42
Data collection of outcomes	43
PART 3. RESULTS	45
A. CARECONNECT PROGRAMME	46
Development Outcomes	46
Implementation outcomes	47
Reach of CAREconnect	47
Acceptability & appropriateness	50
Feasibility	52
Evaluation Findings	53
Effect of CAREconnect programme on caregiver	53
Effect of CAREkaki programme on grassroots and volunteers	55
B. CAREBUDDY PROGRAMME	57
Development outcomes	57
Implementation outcomes	57
RT 5 - CONCLUSION & RECOMMENDATIONS	
. CONCLUSION	
. RECOMMENDATIONS	
NEXES	
THEORETICAL FRAMEWORKS	
A. Social-health integration	
B Individualisation of supports	

PART 5 - CONCLUSION & RECOMMENDATIONS84
A. CONCLUSION85
B. RECOMMENDATIONS
NNEXES89
I. THEORETICAL FRAMEWORKS89
A. Social-health integration89
B. Individualisation of supports95
C. Impact-focused and outcome-driven solutions98
II. SUMMARY OF FORMATIVE EVALUATION99
III. CARECONNECT PROGRAMME DESCRIPTION
CaringSG Alliance Network (CAN)
CaringSG Membership & Outreach
CAREadvisory's support to match support groups and service navigation 104
CAREconnect webinars 106
CAREconnect events 107
CAREcarnival
CAREkaki programme
IV. CAREBUDDY PROGRAMME DESCRIPTION
CAREbuddy support for caregivers
Caregiver volunteer training programme for CAREbuddy & CAREchampion 114
V. CAREWELL PROGRAMME DESCRIPTION
CAREwell support for caregivers



٧	1. 00	JICOME MEASUREMENT TOOLS	121	
	Soc	ial Impact Measurement Toolkit	121	
	Fan	nily Outcome Survey-Revised (FOS-R)	121	
	Car	er Wellbeing and Support Questionnaire (CWS)	122	
	WH	HOQOL-BREF	123	
	Zar	it Burden Interview (6-item)	123	
V	II. IN	APLEMENTATION PRINCIPLES APPLIED IN PROJECT 3i	124	
	Imp	elementation drivers	124	
	Imp	elementation teams	124	
V	III. S	AMPLE WORKFLOWS & FORMS	126	
	1.	Member's preference for support group (CAF9)	126	
	2.	Member-support group matching algorithm (CAF10)	127	
	3.	CAREadvisory triage and enrolment workflow (CAW1)	128	
	4.	Triage decision making chart (CAR2)	129	
	5.	Webinar workflow (CCW2)	129	
	6.	CAREconnect physical event workflow (CCW4)	130	
	7.	Simplified Individual Family Support Plan (IFSP) for house visits	131	
	8. S	ample house visit IFSP interview guide	132	
	9.0	CAREbuddy support workflow (CBW3)	133	
	10.	Caregiver volunteer training workflow (TRW2)	134	
	11.	Caregiver volunteer training notes (TRR1)	135	
	12.	CAREwell Key Worker handbook	136	
		ACKNOWLEDGEMENT		137
		PEEEDENCES		138



# **ACKNOWLEDGEMENT**

We would like to express our deepest appreciation to Temasek Foundation Cares, Enabling Lives Initiative Grant (funded by Tote Board and managed by SG Enable), National Council of Social Service, and SG Enable for their dedicated support for Project 3i. In addition, we would like to specially thank our chair Ms Ang Bee Lian, AfA core action team members, community and corporate partners, and CAREconnect event sponsors. Our heartfelt gratitude also goes to advisers of Boon Lay (Minister Desmond Lee), Bukit Batok East (MOS Rahayu Mahzam), Kampong Glam (Mayor Denise Phua), Nanyang (Mr Ang Wei Neng), Pioneer (Mr Patrick Tay) and Telok Blangah (Ms Rachel Ong) and their respective grassroot teams.

Finally, the success of Project 3i is only possible through the pioneering work of the Project 3i team members and volunteers, who include the following:

- Community and Training Services who implemented the CAREconnect, CAREkaki and CAN programmes – Mr Edward Chan, Ms Elysia Poh, Mr Jeffrey Lim, Ms Julia Chan, Ms Christina Ong, Ms Diana Lim, Mr Javin Lim, Ms Abigail Chua, Ms Esther Hon, Ms Shoelle Goh, Ms Wendy Loh, Mr Chris Lim, Ms Amanda Ong
- Caregiver Services who provided CAREadvisory, CAREbuddy and CAREwell services

   Ms Teo Hui Fang, Ms Lee Xiu Hua, Ms Shari Tan, Dr Djoni Huang, Dr Tang Hui Kheng, Ms Frieda Chan, Mr Winston Ong, Mr Anand Lal, Ms Patricia Koh, Ms Rachel Fong, Ms Elysia Poh, Ms Elizabeth Ng, Mr Reynard Lye, Mr Lee Shang Xuan, Ms Lynne Tan, Ms Arathanna Maria Mohan
- 3. Our dedicated volunteers who stepped up as CAREchampions, CAREbuddies, CAREambassadors, CAREkaki trainers and CAREwell professional volunteers.



# REFERENCES

- 1. Global report on health equity for persons with Disabilities. Geneva: World Health Organization; 2022. Licence: CC BY-NC-SA 3.0 IGO.
- Enabling Masterplan Steering Committee. (2016). Enabling masterplan 2017-2021. Singapore: Author. Retrieved from https://www.ncss.gov.sg/NCSS/media/NCSS-Documents-and-Forms/FM3-Final\_Report\_201612
  - $\underline{\text{https://www.ncss.gov.sg/NCSS/media/NCSS-Documents-and-Forms/EM3-Final\_Report\_20161219} \underline{\text{.pdf}} \\$
- Goh Y.H. (2020, 15 Oct). People with Disabilities need more support: Denise Phua. The Straits
   Times. Retrieved from
   https://www.straitstimes.com/singapore/politics/people-with-Disabilities-need-more-support-denise-phua
- 4. SingStat. Singapore Residents By Age Group, Ethnic Group And Sex, by end June 2020. Retrieved from https://www.tablebuilder.singstat.gov.sg/publicfacing/createDataTable.action?refld=14911.
- 5. Global report on health equity for persons with Disabilities: executive summary. Geneva: World Health Organization; 2022. Licence: CC BY-NC-SA 3.0 IGO.
- National Council of Social Service. (2022). Understanding the quality of life of caregivers. Retrieved from <a href="https://www.ncss.gov.sg/docs/default-source/ncss-publications-doc/pdfdocument/qol-caregiver-re">https://www.ncss.gov.sg/docs/default-source/ncss-publications-doc/pdfdocument/qol-caregiver-re</a> port.pdf
- Inclusive Healthcare Framework project workgroup. (Feb 2020). Position Paper- Development of a Singapore Model of Speciality healthcare for Persons with intellectual and Developmental Disabilities (PWIDDs). Presented at Inclusive Healthcare Symposium 2020. Author: MINDS institute.
- Goh Y.H. (2020, 19 Oct). Caregivers need to seek support to avoid burnout: Experts. The Straits
  Times. Retrieved from
  https://www.straitstimes.com/singapore/caregivers-need-to-seek-support-to-avoid-burnout-experts
- 9. Rashith R. (2018, 3 Dec). New facility in Redhill offers caregivers help and support. The Straits Times. Retrieved from
  - https://www.straitstimes.com/singapore/new-facility-in-redhill-offers-caregivers-help-and-support
- 10. Zhuang, K. S. (2016). Inclusion in Singapore: A social model analysis of Disability policy. Disability & Society, 31(5), 622-640. doi:10.1080/09687599.2016.11978214.
- 11. Lee J., Lim A. Yeo Q.L. (2019). Caring for caregivers Report on Focus Group Discussion at Care Carnival 2019. Singapore: Rophi Consultancy.
- Tai, J. (2016, May 30). Singaporeans support inclusion but do not practise it, according to survey.
   The Straits Times. Retrieved from
   <a href="https://www.straitstimes.com/singapore/singaporeans-support-inclusion-but-do-not-practise-it-according-to-survey">https://www.straitstimes.com/singapore/singaporeans-support-inclusion-but-do-not-practise-it-according-to-survey</a>



- 13. Wong, M. E., Poon, K. K., Kaur, S., & Ng, Z. J. (2015). Parental perspectives and challenges in inclusive education in Singapore. Asia Pacific Journal of Education, 35(1), 85-97. doi:10.1080/02188791.2013.878309
- 14. See <a href="https://www.singstat.gov.sg/modules/infographics/population">https://www.singstat.gov.sg/modules/infographics/population</a>.
- 15. Chua, C. K., Wu, J. T., Wong, Y. Y., Qu, L., Tan, Y. Y., Neo, P. S., & Pang, G. S. (2016). Caregiving and Its Resulting Effects-The Care Study to Evaluate the Effects of Caregiving on Caregivers of Patients with Advanced Cancer in Singapore. *Cancers*, 8(11), 105. https://doi.org/10.3390/cancers8110105
- National Council of Social Service. (2017). Understanding the quality of life of adults with Disabilities. Retrieved from <a href="https://www.ncss.gov.sg/NCSS/media/NCSS-Publications/Pdfdocument/Understanding-the-Quality-of-Life-of-Adults-with-Disabilities.pdf">https://www.ncss.gov.sg/NCSS/media/NCSS-Publications/Pdfdocument/Understanding-the-Quality-of-Life-of-Adults-with-Disabilities.pdf</a>.
- 17. Chen X, Tong J, Zhang W, Wang X, Ma S, Shi D, Yan D, Liu Y. Factors predicting depressive symptoms in parents of children with autism spectrum disorder in eastern China. BMC Public Health. 2024 Jan 18;24(1):226. doi: 10.1186/s12889-024-17731-7. PMID: 38238720; PMCID: PMC10797873.
- 18. Manpower Research and Statistics Department. (2019). Labour force in Singapore 2018. Ministry of Manpower.
- 19. Dunst, C., Trivette, C., & Deal, A. (1988). Enabling and Empowering Families: Principles and Guidelines for Practice. Cambridge, MA: Brookline Books.
- 20. Centre for Community Child Health, Murdoch Children's Research Institute, The Royal Children's Hospital, Melbourne (2009) DEECD Early Childhood Intervention Reform Project, Department of Education and Early Childhood Development. Retrieved from <a href="https://www.eduweb.vic.gov.au/edulibrary/public/earlychildhood/intervention/ed-intervention-literature-review.pdf">https://www.eduweb.vic.gov.au/edulibrary/public/earlychildhood/intervention/ed-intervention-literature-review.pdf</a>
- 21. Mitchell, W., & Sloper, P. (2000). User-friendly information for families with disabled children: A guide to good practice. Joseph Rowntree Foundation. Retrieved from <a href="https://www.jrf.org.uk/publications/user-friendly-information-families-with-disabled-children-guide-good-practice">www.jrf.org.uk/publications/user-friendly-information-families-with-disabled-children-guide-good-practice</a>
- 22. Enabling Masterplan Steering Committee. (2012). Enabling masterplan 2012-2016. Singapore:
- 23. https://www.reach.gov.sg/Participate/conversations-on-singapore-womens-development
- 24. <a href="https://www.msf.gov.sg/media-room/article/Measures-in-Place-to-Support-Parents-and-Caregiver-s-of-Children-with-Special-Needs">https://www.msf.gov.sg/media-room/article/Measures-in-Place-to-Support-Parents-and-Caregiver-s-of-Children-with-Special-Needs</a>
- 25. Bronfenbrenner, U. (2000). Ecological systems theory. In A. E. Kazdin (Ed.), Encyclopedia of Psychology (Vol. 3, pp. 129-133). Washington, DC: American Psychological Association.
- 26. Centers for Disease Control and Prevention. (2012, March 26). International Classification of Functioning, Disability and Health (ICF). Retrieved from <a href="https://www.cdc.gov/nchs/icd/icf.htm">https://www.cdc.gov/nchs/icd/icf.htm</a>
- Early Childhood Intervention Australia. (2016). National guidelines: Best practice in early childhood intervention. Retrieved from <a href="https://www.ecia.org.au/Portals/4/Resources/Other%20Resources/ECIA-National-Best-Practice-Guidelines.pdf?ver=2018-06-05-172656-123">https://www.ecia.org.au/Portals/4/Resources/Other%20Resources/ECIA-National-Best-Practice-Guidelines.pdf?ver=2018-06-05-172656-123</a>
- 28. Division for Early Childhood. (2014). DEC recommended practices in early intervention/early childhood special education 2014. Retrieved from <a href="http://www.dec-sped.org/recommendedpractices">http://www.dec-sped.org/recommendedpractices</a>
- 29. Elise K. Eifert, Rebecca Adams, Sharon Morrison & Robert Strack (2016) Emerging Trends in Family Caregiving Using the Life Course Perspective: Preparing Health Educators for an Aging Society, American Journal of Health Education, 47(3), 176-197, DOI: 10.1080/19325037.2016.1158674



- 30. Brian R. Grossman & Sandy Magaña (2016) Introduction to the special issue: Family Support of Persons with Disabilities Across the Life Course, Journal of Family Social Work, 19:4, 237-251, DOI: 10.1080/10522158.2016.1234272
- 31. Dunst, C., Trivette, C., & Deal, A. (1988). Enabling and Empowering Families: Principles and Guidelines for Practice. Cambridge, MA: Brookline Books.
- 32. Centre for Community Child Health, Murdoch Children's Research Institute, The Royal Children's Hospital, Melbourne (2009) DEECD Early Childhood Intervention Reform Project, Department of Education and Early Childhood Development. Retrieved from <a href="https://www.eduweb.vic.gov.au/edulibrary/public/earlychildhood/intervention/ed-intervention-literature-review.pdf">https://www.eduweb.vic.gov.au/edulibrary/public/earlychildhood/intervention/ed-intervention-literature-review.pdf</a>
- 33. <a href="https://www.lean.org/lexicon-terms/pdca/#:~:text=PDCA%20is%20an%20improvement%20cycle">https://www.lean.org/lexicon-terms/pdca/#:~:text=PDCA%20is%20an%20improvement%20cycle</a>, results%2C%20and%20taking%20appropriate%20action.
- 34. NCSS. Sector Evaluation Framework guide. An approach to outcome evaluation. Retrieved from <a href="https://www.ncss.gov.sg/docs/default-source/ncss-publications-doc/tsrd/ncss-sef-guide\_full-guide.pdf">https://www.ncss.gov.sg/docs/default-source/ncss-publications-doc/tsrd/ncss-sef-guide\_full-guide.pdf</a>
- 35. NCSS. Adopting & Establishing the NCSS Service Standards. Retrieved from <a href="https://www.ncss.gov.sg/docs/default-source/ncss-publications-doc/pdfdocument/ncss-service-standards-playbook.pdf?sfvrsn=72e56e23">https://www.ncss.gov.sg/docs/default-source/ncss-publications-doc/pdfdocument/ncss-service-standards-playbook.pdf?sfvrsn=72e56e23</a> 4