MINISTRY OF EDUCATION
TE TĀHUHU O TE MĀTAURANGA

Education Report: Incredible Years Autism Evaluation

To:	Hon Jan Tinetti, Associate Minister of Education		
Cc:	Hon Chris Hipkins, Minister of Education		
Date:	1 June 2021	**Priority:**	Medium
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Drafter:	Akari Miyamoto	**DDI:**	04 463 0475
Key Contact:	David Wales	**DDI:**	9(2)(a)
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Purpose of report

This briefing provides you with an overview of the Incredible Years Autism programme (IYA) and the findings from the impact evaluation completed by the University of Canterbury.

It also recommends a proposed approach for the release of this report and the Ministry's next steps in response to the evaluation report.

Summary

- The Ministry of Education has been offering Incredible Years (IY) programmes for caregivers and teachers as part of the Positive Behaviour for Learning (PB4L) suite of initiatives since 2010. Budget 17 provided funding for two new IY programmes designed for caregivers and teachers of children aged 2 - 5 on the autism spectrum.
- An evaluation of the IYA programmes has been conducted. This found that IYA has made a positive difference to caregivers and teachers supporting young children on the autism spectrum
- There is an opportunity for you to send out a press release in June 2021 before the publication of the evaluation report on Education Counts.

Recommended Actions

The Ministry of Education recommends you:

Indicate if you wish you release the Incredible Years Autism evaluation report in June 2021

Yes/No

Agree that this Education Report be proactively released.

Agree / Disagree

Katrina Casey
Deputy Secretary
Sector Enablement and Support
4/6/2021

Hon Jan Tinetti
Associate Minister of Education
12/06/2021

Alexander Brunt
Deputy Secretary
Evidence Data and Knowledge
3/6/2021

Background

Budget 17 Investing in Social Wellbeing Initiatives

1. Budget 2017 provided the Ministry $4.19 million to deliver Incredible Years Autism programmes to support children aged 2-5. This was part of a budget package and joined-up approach to deliver support to children earlier, to achieve better short term and longer-term outcomes. The package included funding for the IYA programme, Oral Language and Literacy initiative, and Expanding Behaviour Services.

2. IYA focusses on caregivers and teachers of children on the autism spectrum aged 2-5 years. IYA Parent (IYAP) and IYA Teacher (IYAT) are part of the suite of evidence based IY programmes developed in the United States.

3. IYAP is a 14 session parent programme that aims to increase young children's communication skills, emotional regulation, social competence, and language development. IYAT is a six session programme for teachers that aims to increase early learning teacher capability in supporting children on the autism spectrum.

4. Since 2018, IYA has supported approximately 1,300 teachers and 900 caregivers of children on the autism spectrum. These are delivered by Ministry staff, Resource Teachers:Learning and Behaviour (RTLB) and NGOs. Currently, IYA programmes are available in nine education regions.

5. As a result of this initiative we expected to see caregivers and teachers increasing their capability and confidence in supporting children's learning and social, emotional and communication skills. In turn, we also expected to see children's engagement in learning improve, and social and emotional competence and wellbeing increase.

6. A two stage evaluation has been undertaken and is now ready for release. This found that IYA has made a positive difference to caregivers and teachers supporting young children on the autism spectrum. There was also some evidence that increased capability and confidence in adults had a positive impact on children outcomes, particulary increased engagement. As expected, the impact for caregivers and teachers was greater than the impact for child.

Process Evaluation

7. A process evaluation was undertaken by Eval Star in 2018 to learn from the initial implementation of IYA and provided recommendations in four areas:
    - demand, access and reach
    - programme implementation
    - feasibility and
    - learning to inform the impact evaluation.

8. A key learning from the process evaluation was that the initial programme intent had to be adjusted and consequently the design of the programme logic had to be updated. The Ministry has been adaptive in its approach for the initial implementation of IYA in the New Zealand context and responded to emerging risks and stakeholder feedback.

9. This approach contributed to increasing the relevance and programme fidelity of IYA in the diverse regional and cultural settings in the New Zealand context. Based on the updated model, the process evaluation found that IYA was being implemented successfully while dealing with workforce constraints.

10. The process evaluation also found that IYA was meeting a recognised need, as well as knowledge and skill gaps in supporting children on the autism spectrum.

Impact Evaluation

11. The Ministry implemented recommendations from the process evaluation including changes to the data collection system relating to collecting and collating pre and post measures from IYA participants.

12. In 2019, the University of Canterbury was procured to lead the ex-post data collection and undertake the impact evaluation, using the framework agreed with the Ministry.

13. The final evaluation report sets out the data collection, analysis, and findings, and describes the effectiveness of IYA through three cohorts of participants.

14. While the impact evaluation outcomes were largely positive, the researchers have noted the limitations due to the small sample size.

Findings

15. Based on quantitative data, the impact of participation in IYA on **child outcomes** is 'adequate'. However, based on qualitative (i.e. interview) data the impact of participation in IYA is considered to be 'very good' (while noting that attrition meant that only a minority of participants supplied interview data).

16. During interviews, caregivers commonly reported their child's increased engagement with others, increased participation in the learning environment, and improvements in their child's social and emotional regulation, communication and understanding.

17. The impact of programme participation on **caregiver wellbeing and coping skills** is considered to be 'very good' (noting the caveat stated above about attrition).

18. Interview data analysis also revealed caregiver-reported improvement in their wellbeing and increased sense of confidence in their use of strategies taught during IYA.

19. The impact of the IYAT programme on **teacher outcomes** was determined to be in the range of 'very good' to excellent'.

20. Teacher interview data was overwhelmingly positive, with key themes indicating that teachers felt more confident in their knowledge of autism and in their ability to apply strategies to support children on the autism spectrum in their educational contexts.

21. The small sample size is a limitation of this evaluation. The collection of additional data had to be stopped because of COVID-19. However, the data trends for the two cohorts that were part of the evaluation suggest positive impacts for both teachers and caregivers.

Next steps

22. Following this evaluation, Ministry will continue to support ongoing delivery of IYA programmes as part of the Positive Behaviour for Learning (PB4L) initiatives in regions.

23. We will share and discuss findings with regions. The findings will also be an input to our work on neurodiversity. Currently, IYA programmes are being offered in all regions except Taranaki, Whanganui, Manawatū due to workforce constraints. Opportunities for IYA training will continue to be offered to all regions yearly due to ongoing demand for the programme.

24. Following the evaluation, the Ministry will consider what further work is required to understand and evaluate the outcomes for children.

25. We recommend that this evaluation report be released on Education Counts by the Ministry.

Proactive Release

26. We recommend that this Education Report is proactively released as per your expectation that information be released as soon as possible. Any information which may need to be withheld will be done so in line with the provisions of the Official Information Act 1982.

Annexes

Annex 1: Incredible Years Autism Process Evaluation
Annex 2: Incredible Years Autism Impact Evaluation

EvalStars

Incredible Years Autism Programme Process Evaluation Report

FINAL

12 November 2018

MINISTRY OF EDUCATION
TE TĀHUHU O TE MĀTAURANGA

The Incredible Years® Parents, teachers, and children training series

Process Evaluation Report – Final

Incredible Years Autism – Process Evaluation
Ministry of Education

Prepared for	Simon Williamson Manager Research and Evaluation Research and Evaluation Ministry of Education
Prepared by	Kate Averill Dr Sira Engelbertz Shaun Akroyd
Contact details	Kate Averill EvalStars Limited Phone: 04 476 7391 Email: kate@evalstars.com

Glossary

Term	Definition
Caregivers	When we talk about programme participants, we use caregivers to include parents, whānau and others who are caring for children.
Children on the autism spectrum	We talk about children on the autism spectrum rather than children with autism or children with Autism Spectrum Disorder. This includes children who are displaying behaviour consistent with being on the autism spectrum as well as children who have been diagnosed with autism.
Conclusions	Conclusions point out the factors of success and failure of the evaluated project, programme or intervention, with special attention paid to the intended and unintended results and impacts, and more generally to any other strength or weakness. A conclusion draws on data collection and analysis undertaken, through a transparent chain of arguments.
Data collection tools	Methods used for collecting information during an evaluation. Examples include surveys, workshops, interviews, focus groups, and literature search and review.
Effectiveness	The extent to which a project, programme or intervention's outcomes/objectives were achieved, or are expected to be achieved, considering their relative importance. Also used as a judgement about the merit or worth of an activity, i.e. the extent to which an intervention achieves its intended outcomes/objectives.
Group leaders	Each programme has two trained group leaders who work in partnership on all aspects of the programme and are involved in all activities and tasks.
Impacts	Positive and negative, primary and secondary long-term effects produced by a project, programme or intervention, directly or indirectly, intended or unintended. Also see 'Outcomes'.
Incredible Years	The Incredible Years® is a set of interlocking, comprehensive, and developmentally based programmes for parents, teachers and children. Separate programmes have been developed for babies (0-1 years), toddlers (1-3 years), pre-schoolers (3-6 years and schooled aged children (6-12).
Incredible Years Autism Parent	The Incredible Years "Autism Spectrum and Language Delay" programme for caregivers.
Incredible Years Autism	Includes both the Incredible Years Autism Parent programme and the Incredible Years Autism Teacher programme.
Incredible Years Autism Teacher	The Incredible Years "Helping Preschool Children with Autism" programme for teachers.
Incredible Years Parents	Incredible Years Parent is the basic Incredible Years programme for caregivers of children aged 3–8 years, which provides caregivers with skills to better manage children with behavioural problems, creating a home environment that is conducive to positive social and educational outcomes.
Incredible Years Teacher	The Incredible Years Teacher is the basic Incredible Years programme for teachers of children aged 3–8 years, which provides teachers with approaches to help turn disruptive behaviour around and create a more positive learning environment for their students.
Make up session	Group leaders provide shortened alternative sessions in location or home for parents or teachers who could not attend an IYA programme session.
Model	A diagram or narrative that explains the cause and effect or contribution relationships between the inputs, activities, and outcomes of a project, programme or intervention. In this evaluation, the model diagrammatically depicts how the Framework is expected to regulate rating valuations.
Outcomes	The likely or achieved short-term and medium-term effects of a project's, program's or intervention's outputs. Also see 'Impacts'.
Parent Guidelines	Ministry Guidelines for the Incredible Years Parent (basic) Programme.
Parent Provider	An organisation that the Ministry of Education has contracted to deliver the Incredible Years Autism Parent programme.

Participating Caregiver	A caregiver who is participating or who will be participating in the Incredible Years Autism Parent programme.
Participating Teacher	A teacher who is participating or who will be participating in the Incredible Years Autism Teacher programme.
Performance	The degree to which a project, programme or intervention operates according to specific criteria/standards/guidelines or achieves results in accordance with stated goals or plans.
Relevance	The extent to which the system (regulatory framework) meets the needs and is suited to the priorities and policies of the key stakeholders and has been designed to be 'fit for purpose'.
Stakeholders	Agencies, organisations, groups or individuals who have a direct or indirect interest in an intervention or its evaluation.
Supplementary Guidelines	Ministry Guidelines for the Incredible Years Autism Programmes.
Teacher Guidelines	Ministry Guidelines for the Incredible Years Teacher (basic) Programme
Teacher Provider	An organisation that the Ministry of Education has contracted to deliver the Incredible Years Autism Teacher programme.

List of Acronyms

Acronym	Description
ASD	Autism Spectrum Disorder
ECE	Early childhood education
IY	Incredible Years
IYA	Incredible Years Autism
IYAP	Incredible Years Autism Parents
IYAT	Incredible Years Autism Teacher
IYP	Incredible Years Parents
IYT	Incredible Years Teacher
the Ministry	Ministry of Education

Contents

Executive Summary

Incredible Years Autism (IYA) is part of the suite of evidenced-based Incredible Years® programmes for parents, children and teachers developed in the United States. 2018 is the first year IYA programmes have been delivered in New Zealand with Treasury funding and led by the Ministry of Education (the Ministry). IYA programmes focus on parents of children aged between two and five who are on the autism spectrum, and their teachers. IYA aims to build skills and confidence in the key adults in those children's lives to be able to promote their emotional regulation, positive social interactions, communication skills and relationships with others. IYA programmes are delivered as IYA Parent (IYAP) programmes for caregivers and IYA Teacher (IYAT) programmes for teachers.

Process evaluation purpose

This process evaluation reports on the progress and learning of the initial implementation of IYA programmes and provides conclusions on four focus areas: (1) demand, access and reach, (2) programme implementation, (3) feasibility, and (4) learnings to inform the impact evaluation. The intended primary audience is the Ministry to whom the present report aims to inform the planning and delivery of future IYA programmes. To this end, this process evaluation provides insights into the implementation of the IYAP and IYAT programmes and offers lessons learned. Additionally, the process evaluation seeks to inform the evaluation of the programme's impact. A particular focus of this process evaluation is to examine the IYA programme's intent in the New Zealand context as implemented by the Ministry and regional service delivery by providers as well as links with health services. Providers who deliver IYA programmes are the intended secondary audience of the present report.

The evaluation used administrative data provided by the Ministry and qualitative data collected by the evaluation team through semi-structured interviews with stakeholders. The evaluation team undertook fourteen interviews, including group discussions with participants and group leaders of IYAP and IYAT programmes as well as managers of providers delivering the programmes (total sample size N=74). Interviews were guided by evaluation questions around the four focus areas.

Findings

Demand, access and reach

The lack of data makes it difficult to assess the actual demand in New Zealand for IYA programmes. Further, there are challenges in identifying children on the autism spectrum that fall into the focus age group that have to do with no systematic screening in New Zealand and exposure to entry points to IYA programmes.

On average, IYAP programmes met minimum targets for families participating in the programme. Identified pathways used by carers to access IYAP are generally through health, education or social systems. In most cases, providers of IYAP used established networks to promote IYAP programmes. Struggles in recruiting families were found in some regions and had to do with delayed marketing and limited existing networks. Barriers for families attending IYAP programmes were considered plentiful given their challenging situations.

Demand for IYAT appeared high. Teacher participants are being sourced through the IY connections. All interviewed teacher participants have previously been IYT trained.

Programme implementation

Overall, IYA programmes have been positively perceived. Both IYAP and IYAT appear to achieve intended outputs. However, the implementation of the programmes was seen as rushed. Alignment of IYAP and IYAT programmes has not happened, yet. Programmes are considered to still be at the initial implementation stage and require advice and coordination support from the Ministry.

IYAP and IYAT have been delivered in compliance with programme fidelity requirements. In most regions, group leaders tailored the programme to participants' needs. Māori concepts, such the Māori health and well-being model *Whare Tapa Wha* as well as Māori language (Te Reo) and protocols (tikanga) have been generally

incorporated in the IYA programme delivery. Relievers had been hired to release teachers attending IYAT programmes. Caregivers faced greater challenges to commit their time to IYAP programmes.

IYA strategies are considered most effective if consistently used by all key adults interacting with children on the autism spectrum, which include both parents and teachers. Alignment of IYAP and IYAT programmes is proving to be challenging requiring communication and coordination with health and education services and providers. However, stakeholders consider this should remain a goal with dual entry points through both teachers and parents of children on the autism spectrum.

Differences existed between Parent Providers and Teacher Providers in their communication with the Ministry. The Ministry contracted and communicated directly with Parent Providers. Both managed to build respectful relationships and were collaborating. Teacher Providers have been contracted and managed through Massey University. The head contract relationship between the Ministry and Massey University provided some communication challenges with IYAT programme providers.

Feasibility

Group leaders play a key role in the success of IYA programmes. The consult day was widely valued and increased group leaders' confidence in delivering the programme. Cross-regional gatherings present an opportunity for consolidating best practice IYA programme delivery on a national level.

However, lack of available group leaders to deliver IYAP and IYAT programmes have been signalled in various locations. Co-delivery between providers and the Ministry was effective where providers could not meet the requirement of two trained group leaders per programme.

The contract funding for IYAT was assessed as realistic and providers see benefits in Incredible Years® established professional development pathways and accreditations. The IYAP funding was adjusted during 2018 to ensure sufficient funding for 14 sessions at 2.5 hours was provided.

Learnings to inform impact evaluation

The selection of measurement tools for collecting data informing the longer-term impact evaluation has been adjusted during the initial implementation. Three measures were changed in response to feedback from providers. However, these changes have also caused some confusion and frustration on the part of providers and group leaders delivering IYAP and IYAT.

Conclusions

A key learning from the process evaluation was that the initial programme intent had to be adjusted and, consequently, the design of the programme logic model be updated. The Ministry has been adaptive in its approach for the initial implementation of the IYA programmes in the New Zealand context and responded to emerging risks and stakeholder feedback. This approach contributed to the increased appropriateness and programme fidelity of IYA programmes in the diverse regional and cultural settings in New Zealand context. Having an evaluation alongside the programme implementation was good practice and considered useful from a programme management point of view.

Based on the updated model, the IYA programme is, overall, being implemented successfully for IYAP/IYAT programmes dimensions while dealing with workforce constraints. Stakeholders involved in the initial implementation (i.e. the Ministry, providers and group leaders) have worked consistently to get the initial implementation phase well underway. IYA programmes are meeting a recognised need, knowledge and practical gap in New Zealand in supporting children on the autism spectrum. Reports from IYA programme participants (caregivers and teachers) on changes with strategies and confidence, and children on the autism spectrum indicate the programme is and will positively impact further on the lives of children on the autism spectrum. This is through more educated and skilled key people around them using consistent and relevant strategies. These observed changes are in line with findings of international studies outlined in the literature review.

However, there are constraints over training IY and IYA group leaders and being accredited. Group leaders of IYAP and IYAT programmes play a key role in programmes' success. Appropriate training and coaching is paramount. Sustainability of the programmes is highly dependent on the ability to strengthen and further build the current workforce in New Zealand. This needs to be undertaken on a regional basis, which the Ministry is focusing on for 2019.

Key recommendations

- Consider streamlining data collection for 2019; consolidating administrative (including socio-demographic information), waiting lists, reporting and impact data (ideally) in digital form in support of an improved and systematic database for IYA.
- Consider including user representatives (e.g. provider) to the Programme Steering Group overseeing and supporting the identification and confirmation of impact measuring approach and tools in order to make considered decision of what is useful and feasible.
- Expand IYAT programmes to provide increased teacher professional development opportunities and aligning with IYAP programmes in regions.
- Keep national oversight with Ministry coordinating IYA programmes to allow regions more time to establish networks and consider transitioning coordination to regions from late 2019.
- Consider how to ensure sufficient group leaders in all regions are trained and are supported to become accredited IYA group leaders, peer coaches and mentors.

1. Introduction

Incredible Years Autism (IYA) is one of three investing for social wellbeing initiatives the Ministry of Education (the Ministry) is leading to provide a joined-up approach and targeted support for children aged 0–8 years[1]. IYA is a set of programmes focusing on key adults (i.e. caregivers and teachers) in the lives of children aged 2–5 years who are on the autism spectrum. This is the first time IYA programmes is being delivered in New Zealand with Treasury funding. Part of the overall design of the programme is the requirement to evaluate concurrently.

1.1. Background and context to the Incredible Years Autism programme

Children on the autism spectrum have neurodevelopmental impacts on their communication skills, emotional regulation that result in challenging or isolating behaviours. Parents who are raising children on the autism spectrum often have high levels of stress associated with their children 's behaviour. There is a strong evidence base to suggest that early intervention has great potential to offset longer-term negative outcomes for these children and their families (Dababnah & Parish, 2016a, 2016b; Hutchings et al., 2016).

IYA programmes are from the suite of evidenced-based Incredible Years® programmes developed by Dr Carolyn Webster Stratton in the United States. Incredible Years (IY) programmes are used worldwide[2] in schools and mental health centres and have been shown to work across cultures and socioeconomic groups. The goal of these programmes is to improve young children's communication skills, emotional regulation and parental wellbeing. There are IY programmes for parents (IYP) and for teachers (IYT) that have been delivered in New Zealand since 2001. IYA programmes are a recent extension from the basic IY programmes with the focus on children on the autism spectrum. The evidence base for IYA programmes is still being built.

1.2. Programme description

IYA programmes encompass Incredible Years Autism Parent (IYAP) and Incredible Years Autism Teacher (IYAT) programmes in the New Zealand context. Together, IYAP and IYAT aim to promote children's emotional regulation, positive social interactions and communication skills. Group leaders of IYA programmes must already be accredited in the relevant basic IY programme.

IYAP involves a 14 (2.5-hour) session parent programme (delivered approximately once a week). Apart from its intend of increasing young children's skills, the programme aims for improved mental health (wellbeing) of parents/caregivers. The IYAP programme topics[3] include:

- Child-directed narrated play promotes positive relationships
- Pre-academic and persistence coaching promotes language development and school readiness
- Social coaching promotes friendship skills
- Emotion coaching promotes emotional literacy
- Pretend play promotes empathy and social skills
- Promoting children's self-regulation skills
- Using praise and rewards to motivate children
- Limit setting and behaviour management.

[1] The two other programmes the Ministry is running as part of this joined up approach are the Oral Language Learning Initiative (OLLi) and the Expansion of Behaviour Services (EBS).
[2] It should be noted that although the Incredible Years programme is used worldwide, the Incredible Years Autism programmes has only been run in a smaller number of countries (United States of America and the United Kingdom).
[3] Refer also to Incredible Years® objectives http://www.incredibleyears.com/about/incredible-years-series/objectives/

The target numbers for each IYAP programme is a minimum of seven children drawn from seven different families. One or more caregivers from one family may attend. However, the maximum programme size is set at 12 parents, whānau or caregivers. Parents, whānau or caregivers who have already attended the basic IYP programme may be accepted for IYAP.

Families are not required to have a medical diagnosis of autism for the child who is the focus of the programme. The Ministry provides up to $3,400 per programme that providers can use to support families and the programme, such as petrol vouchers, childcare costs, food, and venue.

IYAT is a six (2.5-hour) session teacher programme (delivered weekly or fortnightly). It aims to increase early childhood teacher's capability in supporting children on the autism spectrum. The IYAT programme covers:

- Language development.
- Social interactions and school readiness.
- Emotional literacy and self-regulation.

IYAT programmes are targeted at 10-12 participants each. Priority should be given to teachers who are working with children whose caregivers are participating in IYAP programmes and teachers from Early Childhood Education (ECE) centres who are working with a child on the autism spectrum. Teachers who have already attended the basic IYT programme may be accepted for IYAT.

In contrast to the basic IYT programmes, which are delivered monthly, IYAT requires a considerable commitment from teachers and ECE centres (or schools) to attend weekly or fortnightly sessions. Teachers are released for the time they participate in IYAT programmes. The Ministry contributes $900 per staff member per programme towards teacher release. This is to support teacher attendance from ECE centres and schools.

Before 2018, the Incredible Years Autism programme had only been delivered by Te Whānau Kotahi in Tauranga (Health provider) with the local Ministry office. It had not been delivered on a wider scale, and has not been evaluated in New Zealand, or on a large scale internationally[4]. Although larger scale research on this programme (in progress) will inform the programme in New Zealand, results are not directly transferable from one country to another, as the contexts (including the schooling and healthcare environments) can vary considerably.

The Ministry provided IYA specific guidelines to support the delivery of IYAP and IYAT. The *Supplementary Guidelines for Incredible Years* (in the further text referred to as *Supplementary Guidelines*) contain details on the programme background, design, target population, the programmes' fidelity and other requirements outlined by the Ministry.

In addition to the provision of programmes, the general IY structure requires all group leaders to receive coaching and they can apply for accreditation. The same structure applies to IYA programmes. Each IYA programme must be delivered by two group leaders who are accredited in the respective Parent or Teacher basic IY programme and have experience in working with children on the autism spectrum or their families. The training for IYA group leaders can only be provided by an IYA accredited trainer. Because New Zealand currently does not have any IYA accredited trainers, trainers from overseas provide the training.

[4] A small pilot evaluation has been completed in Wales (see A pilot trial of the Incredible Years® Autism Spectrum and Language Delays Programme, 2016, http://www.incredibleyears.com/wp-content/uploads/Hutchings-J.-Pilot-trial-of-IY-Autism.pdf) , with a larger Randomised Control Trial currently in progress by the same group of researchers.

The modality of IYA programme delivery in New Zealand is provided by one of the following three options[5]:

1. **Sole provider delivery** – the programme is delivered by two group leaders employed by one provider.
2. **Co-delivery** – the programme is delivered by one provider who leads the programme planning and a Ministry staff member.
3. **Sole Ministry delivery** – the programme is delivered by two group leaders employed by the Ministry.

1.3. Programme fidelity

For all IY programmes fidelity[6] generally means that group leaders of programmes:

- Deliver the programme content in its entirety.
- Deliver the content in the correct sequence.
- Use the programmes' routines and practices (e.g. practice opportunities, role plays, collaborative questioning, brainstorm, and practice activities).
- Use the programme's resources (e.g. vignettes).
- Continually reflect on how to be responsive to specific needs and concern of participants and associate children.

The *Supplementary Guidelines* include IYA specific guidance indicate that group leaders of IYAP programmes:

- Record sessions (for self and peer review).
- Have access to coaching and participate in consult days to support them in delivering IYA programmes.
- Ensure evaluation forms and checklists (provided by the Ministry) are completed.

Evaluation forms will be further discussed in section 1.5.

1.4. IYA Programme theory of change

The IYAP and IYAT programmes are interventions focused on supporting caregivers, teachers and, ultimately, the child on the autism spectrum. The initial programme intent and theory of change was to target both the home and education environments, so that a child on the autism spectrum receives increased informed support from key adults in the child's life. The interventions sought to enhance the child's development and learning, and the wellbeing of both the child and caregivers while increasing confidence and skills of caregivers and teachers. This increased focus on wellbeing and learning leads to more inclusive and participatory lives for children on the autism spectrum and their whānau, who would also feel more supported and confident. The intervention logic for the programme is displayed below (Figure 1, over page).

[5] Ministry of Education (n.d.), *Supplementary Guidelines for Incredible Years*.
[6] Fidelity of IY programmes is specified in both *Incredible Years Parent Guidelines* and Incredible Years Teacher Guidelines published by the Ministry of Education and available on their website: http://pb4l.tki.org.nz/

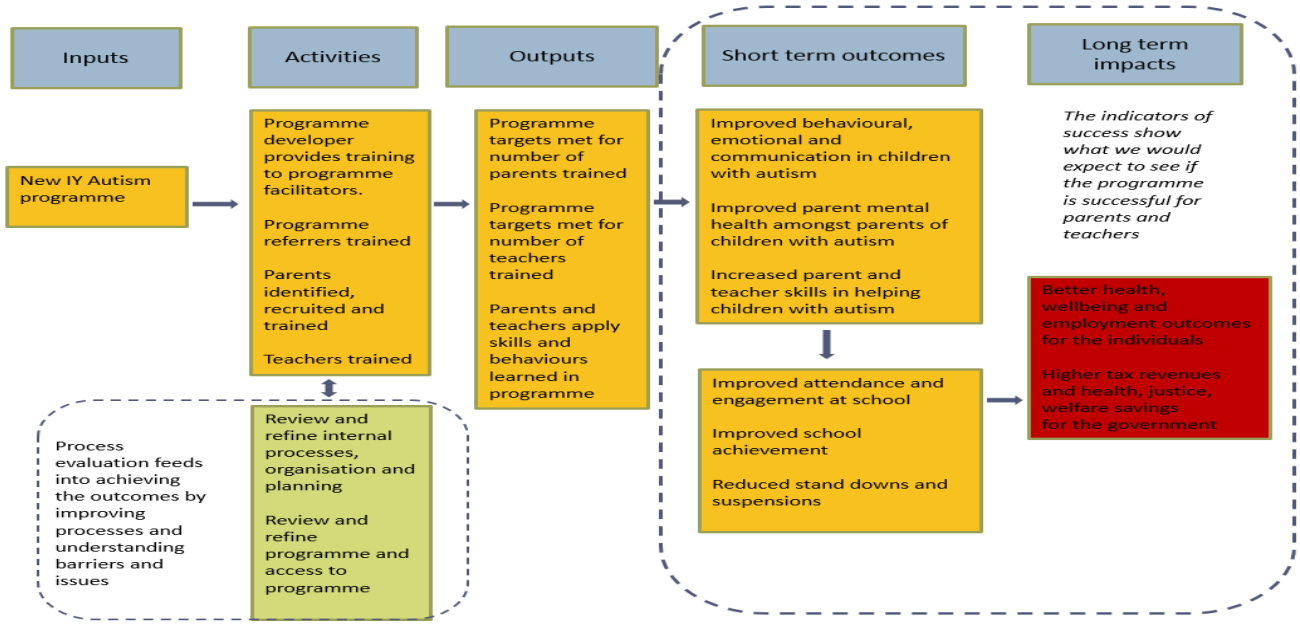

Figure 1: Initial intervention logic for IYA (source: Incredible Years Evaluation Plan)

1.5. Changes to the initial IYA implementation plan during 2018

The evaluation team noted various changes from the initial IYA implementation plan that occurred during initial implementation in 2018.

1.5.1. IYAP and IYAT delivery

There have been differences in the contracting of providers between those providing IYA Parent programmes (Parent Providers) and those providing IYA Teacher programmes (Teacher Providers). Parent Providers responded to an open tender and have been contracted by the Ministry directly. Teacher Providers, however, have been selected and contracted through Massey University who coordinate IYAT programmes under a head contract for the Ministry.

The original IYA programme intent in the New Zealand context was to have coverage of both IYAP and IYAT programmes in all ten education regions[7]. However, after the tendering process for IYAP, contracting for IYAT and the training of Parent and Teacher Provider group leaders in early 2018, there was insufficient workforce available for the planned implementation provision of both parents and teacher programmes in all regions. This was due, in part, to limited responses in some areas to the tender and a smaller number of group leaders being available after training due to changes in personal circumstances. Consequently, neither full coverage of all regions nor consistent alignment of IYAP and IYAT could be established.

In September 2018, advertising was undertaken to retender several IY contracts, including IYAT delivery and IYA workforce support and development. An open tender was also issued for IYAP in four regions: Tai Tokerau, Auckland, Hamilton, and New Plymouth. This was due to the Ministry contracting requirements and plans for expanding the regional implementation of IYAP and IYAT programmes in 2019. The Ministry has also contracted to provide further professional development in autism knowledge and strategies for group leaders during 2019.

[7] The 10 Ministry of Education areas are: (1) Tai Tokerau Northland, (2) Auckland, (3) Waikato, (4) Bay of Plenty/Rotorua/Taupo, (5) Taranaki/Whanganui/Manawatu, (6) Hawkes Bay/Gisborne, (7) Wellington, (8) Nelson/Marlborough/West Coast, (9) Canterbury, (10) Otago/Southland.

1.5.2. Programme budget

The Ministry increased the price for the delivery of IYAP programmes. The initial contracted price for IYAP had been $22,000 whereas the basic IYP programme is priced at $24,000. The leadership team approved increasing the programme price as follows:

- The cost per programme will be increased to $26,776 for sole delivery and $13,338 for co delivery.
- Disbursements remain at $3,400 giving a maximum per programme cost of $30,176 for sole delivery and $16,788 for co-delivery (excl. GST).
- The new price applied from 1 August 2018 for new programmes.[8]

1.5.3. Promotion of IYA programmes

Following advice by autism sector groups, the Ministry initially took a soft approach in promoting IYA programmes to avoid raising hope and disappointment of families with children on the autism spectrum, given the limited capacity of IYAP programmes. The Ministry of Health had been involved to help distributing information about IYAP among partners that were considered appropriate contact points, such as District Health Boards, ASD coordinators, medical practices and Plunket. However, enrolment numbers for the first cohort fell below expectations, which prompted the Ministry to extend communication around IYA Programmes. In the meantime, support material, such as posters and brochures for both programmes (Figure 2) for public display in selected places (e.g. hospitals) have been produced and circulated.

Figure 2: Picture of IYAP poster

[8] All prices in NZD.

1.5.4. Assessments for measuring outcome

The IYA initial implementation included a suite of five measurement tools to be collected within the IYA delivery and be used for the evaluation, as part of the agreed Treasury plan[9]. This selection of tools was refined prior to implementing IYA to better reflect the Ministry's approach relevant to children on the autism spectrum.

The selection of initial measurement tools was further refined during implementation in 2018 to reflect the modification to the programme delivery approach, and in response to feedback from providers. From the initial introduction of "test assessment tools" in March/April to providers, the Ministry captured and responded to feedback. A broad assessment tool reset occurred in approximately April/May. Two additional changes followed: one assessment was removed from the IYAP programme in June and the second measure was removed from the IYAT programme in October.

Table 1: Assessments used for IYA programme evaluation considered in this evaluation, and the changes made

Programme	Assessments	Comment (use and change)
IYAP	Autism Parenting Stress scale	Introduced in April.
	Parenting Stress Index	Introduced in March and withdrawn in April due to provider-noted experience with a parent relating to participants' mental health, ethical concern and appropriateness of providers administering this assessment.
	Parental Sense of Competency	Introduced in March and withdrawn in October due to feedback from providers in 5 regions and a health specialist that the questions could be harmful to parents.
	Ages and Stages Questionnaire (ASQ-SE-2[10])	Introduced in March
	Strengths and Difficulties Questionnaire (SDQ-P)	Introduced in March and withdrawn in April due to concerns raised about the numbers of assessments being used with parents.
IYAT	The measures identified for use for outcomes evaluation include a selection from the Incredible Years Teacher and Child care provider self-reflection inventory: • Emotion coaching & self-regulation (social coaching) • Positive Behaviour Management: Setting limits and rules	Introduced in April Four assessments were used as self-reflection exercises are recommended to be removed by providers.

[9] As part of the approved funding for IYA programmes by the Treasury, a stream of funding was provided for both the process and impact evaluation.
[10] 24 months used based on advice from IY developer

Programme	Assessments	Comment (use and change)
	• Positive Behaviour Management: Differential attention, ignoring and redirecting • Positive Behaviour management: Time out to calm down and other consequences	
	Sense of efficacy	Introduced in April
	Strengths and Difficulties Questionnaire (SDQ-T)	Introduced in April and withdrawn in June due to impracticality of capturing parental consent given required modifications to programme delivery, and the ethical ramifications here.

2. Process Evaluation

The overall approach to evaluation of IYA programmes is intended to occur over three stages:

1. A process evaluation to provide insights into the implementation of the IYAP and IYAT programmes.
2. An impact evaluation[11] to determine whether the programmes are achieving the intended outcomes for the participants.
3. The overall evaluation objectives are to assess the relevance, effectiveness and efficacy, fidelity, and feasibility of the programme.

This report is the first stage, the process evaluation component for the initial implementation of IYA programmes. Beside assessing the process of the initial implementation of IYAP and IYAT programmes, the process evaluation seeks to inform the forthcoming impact evaluation. This process evaluation was undertaken between May and October 2018.

The scope for this process evaluation is the first cohort of the IYAP and IYAT Programmes. The initial roll out of the IYA programmes has been in eight locations: Auckland, Tauranga, New Plymouth, Hawke's Bay, Wellington, Nelson, Christchurch and Invercargill.

2.1. Stakeholders

This process evaluation has a number of key stakeholders, listed below. Unless otherwise specified, these stakeholders are for both the IYAP and IYAT programmes (noting that 'participants' differ between programmes).

These stakeholders have been grouped into primary and secondary stakeholders. This reflects those who are directly involved in the programme, and those who either have an 'arm's length' interest in the programme (e.g. as the funder), or those who may be interested/have a future interest in the programme.

Primary stakeholders

- Ministry of Education (Learning Support leadership team, Project Programme Board and Early Learning and Student Achievement Group, Raukura/Chief Advisor Te Ao Māori and/or Group Manager Te Reo Māori for Early Learning and Student Achievement).
- Early Childhood Advisory Committee, Positive Behaviour for Learning Reference Group.
- Contracted providers.
- Participants (teachers/kaiako for the IYAT and caregivers for the IYAP).
- District Health Boards (Disability Support Services) where the programme is running.
- Ministry of Health (Child Development Services and ASD Coordinators).

Secondary stakeholders

- Treasury.
- Other prospective providers.
- Autism sector groups (e.g., Autism New Zealand, Children's Autism Foundation, Altogether Autism).
- Other teachers/educational professionals/ECEs/Schools (including representative bodies such as the Centre Managers, School Principals NZEI Te Riu Roa).
- Oranga Tamariki.
- Other District Health Boards.

[11] The design of the impact evaluation is yet to be determined. The appropriateness of a control group or other counterfactual approaches requires consideration

2.2. Process evaluation approach

The overall evaluation approach incorporated a mixed methods responsive design (Stake, 2014). Given the relatively recent IY programme expansion into the IYA programmes, the evaluation focused on gathering qualitative data from multiple stakeholders to examine different perspectives and assess the appropriateness of IYA in the New Zealand context. The evaluation team considered it was important to triangulate the findings from multiple stakeholders' perspective and within the regions given the diversity across regional contexts.

The evaluation approach was flexible and responsive, adapting where additional questions were identified during the early data collection activities, including national stakeholder interviews and initial field visit. Of particular focus was the IYA programme intent in the New Zealand context implemented by the Ministry and interfacing with health services and providers. Flexibility by the programme personnel and evaluation team was critical to effectively respond to the adaptive operating environment associated with the initial implementation of IYA programmes. The successful initial programme implementation was based on the fidelity in achieving the programme's intent (as it relates to the logic model) and the guidelines followed.

The programme's maturity[12] was considered, which is formalising as the IYA programme evolves its processes and resources from the early learnings during the initial implementation and inputs from the process evaluation. The timing lag in the initial implementation of the IYAP and IYAT programmes caused some challenges in examining the initial programme intent. However, the evaluation team consider the field visit and regional coverage were sufficiently robust to report key themes and draw conclusions. The evaluation team visited six out of the eight regions (Tauranga, Nelson/Motueka, Hawkes Bay, Wellington, Christchurch and Invercargill) and spoke with key stakeholders in the other two regions (New Plymouth and Auckland).

2.3. Ethics and consent

This evaluation was guided by ethical and culturally sensitive professional practice. It was also cognisant of other sensitivities identified as important in consultation with the Ministry's programme team[13] and providers such as caregiver wellbeing and current contracting arrangements. Experienced evaluators, including Kate Averill and Shaun Akroyd, undertook the field work for this evaluation, which incorporated an insight into IYA appropriateness for Māori and Pasifika, and variations within the regional locations.

The evaluation team provided information on the purpose of the evaluation and formally sought consent of all interviewees for this evaluation. Given the small number of people in each region interviewed, the evaluation team have reported thematically under the evaluation focus areas to maintain confidentiality. To gain informed consent, an information sheet on the process evaluation research questions was provided to participants (see Appendices B and C). Participants were informed that no person would be identified in the reporting unless specifically asked for permission to illustrate emerging good practice in the New Zealand context.

The evaluation team adapted their approach for parent discussion groups given the evident impacts on mental and physical wellbeing of parents attending the programmes. The evaluation team were guided by provider managers and group leaders on the inclusion of group leaders in discussions with parents. Cultural sensitivity and the vulnerability of parents were considered during this evaluation. The two key evaluators (male and female) involved in the fieldwork were of Māori and European ethnicity and both had prior experience in evaluating processes and impacts for Pasifika.

[12] The evaluation team used the UK Office of Government Commerce developed Portfolio, Programme and Project Management Maturity Model (P3M3®) (Sowden, Hinley, & Clarke, 2010) to assess the IYA programmes maturity.

[13] Early feedback from providers to the programme team at the Ministry of Education suggests that some caregivers participating on the IYAP may be on the autism spectrum themselves. Flexibility regarding face-to-face qualitative data collection strategies may be necessary to be sensitive to factors such as this.

2.4. Process evaluation questions

The evaluation questions for the process evaluation were framed around four focus areas, linked to the evaluation objectives (relevance, fidelity, feasibility and efficacy). The four focus areas included demand, access and reach; programme implementation; feasibility; and learnings to inform the impact evaluation. The questions, focus and objectives were confirmed with the evaluation team during initial planning and scoping phase.

Demand, access and reach (relevance)

1. *What is the demand for services, and who is accessing the programme (e.g. socio-demographic profile, location, ethnicity etc.)?*
2. *How are people accessing services differently, and is this access pathway working effectively?*
3. *How well is the programme in reaching the right children (i.e. do those who need the programme access it and do those who access the programme need it)?*
    a. *Is the programme equitable in reaching Māori and Pasifika children?*
4. *What, if any, are the barriers to parents and teachers accessing the programmes?*

Programme implementation (relevance and fidelity)

5. *Is the programme being implemented as intended, and in a way that maintains its fidelity?*
6. *What aspects of the programme are working well/not well (e.g. participation and delivery, communications between relevant health/education stakeholders, such as DHBs, local ASD coordinator and/or sector groups)?*
    a. *What aspects of the programme could be improved – for parents and for teachers?*
    b. *Does the programme appear to work better in some areas than others? Why?*
7. *Are all of the aspects of the programme required to achieve the intended outputs and outcomes, or are some aspects more fundamental than others?*
8. *What changes (if any) are being made to the programme to ensure delivery is culturally appropriate for Māori and Pasifika, and why?*
9. *How well are the Ministry's processes around communication and implementation of the programme supporting best-practice delivery of the programme?*

Feasibility

10. *How adequate are our inputs and capacity (such as the workforce, the training requirements) in the Ministry of Education and the Incredible Years model to achieve the intended outcomes of the programme, now and in future? What are key considerations (if any) that would affect the longer-term sustainability of the model in New Zealand?*

Learning to inform the impact study (efficacy)

During this early learning stage, what key factors might influence the feasibility of the impact evaluation. Specifically:

11. *How appropriate are the measures (refer 1.5) for the different groups in this initiative for the longer-term impact evaluation?*
12. *How well does the demand for services enable a more robust evaluation approach through delayed enrolment or other mechanism (such as maintaining a register of interested participants in other locations)? To what extent could a list of interested participants (maintained as a register by providers) be used as a quasi-control group for the impact evaluation?*

In addition to the evaluation questions, the following assumptions were noted by stakeholders that needed to be tested during the process evaluation as well as the impact evaluations to better understand the fitness-for-purpose of IYA programmes in the New Zealand context.

- These programmes can be adapted (without compromising its fidelity) so that it is delivered in a way that is culturally appropriate to New Zealand participants.
- These programmes can be aligned with and support the New Zealand health and education setting, which is strengths-based (rather than deficit and treatment focused).

2.5. Data collection for the process evaluation

This section outlines the evaluation data collection methods and tools used, and also outlines the limitations of this evaluation. The full details of the evaluation methodology are provided in Appendix D.

The process evaluation research methods included:

- **a document review** including relevant background documents provided by the Ministry of Education, and a review of previous studies referenced in the evaluation plan.
- **a targeted online literature review** of key literature on autism programmes was undertaken (refer Appendix E for literature reviewed).
- **a review of existing programme administrative data** where consent process permitted, including a summary of relevant demographic data and an overview of how the programme was accessed.
- **collection of qualitative data including semi-structured stakeholder interviews** (ten interviews) guided by the evaluation questions, group discussions in six out of eight locations with participants (manager, group leaders, and parents and teachers (refer sample size n=89). Evaluation interviewee/ discussion group ethnicity included: Māori, NZ European, Samoan, Indian.

The role segmentation for the qualitative interviews for this process evaluation is as follows.

Table 2: Groups and roles of research participants

IYAP programme evaluation participants

Eight Sites	Provider manager	Group leader	Evaluation participants
Total	4	14	41

IYAT programme evaluation participants

Two Sites	Group leader	Teacher participants
Total	4	10

(Note: 2 group leaders of IYAT programmes also acted as provider managers)

IYAP programme evaluation participants

Location	Evaluation participants
Tauranga	14
Motueka	12
Wellington	13
Napier	6
Hastings	5
Invercargill	6
Christchurch	1
Auckland	2
Total	59

IYAT programme evaluation participants

Location	Evaluation participants
Christchurch	12
New Plymouth	2
Total	14

Regional and national stakeholder evaluation participants

	Evaluation participants
National	8
Regional	8
Total stakeholders	16

The analysis frame included the focus areas and the evaluation questions, supporting overall assessments of the programme and research questions. All data streams (primary and secondary, qualitative and quantitative) were analysed by the evaluators to identify substantiated findings against the four focus areas. Triangulation of data as evidence of what is working well, what is not (and for whom), and what can be improved was undertaken.

2.6. Limitations of the evaluation

The following limitations for this process evaluation were noted by the evaluation team.

A complete dataset of IYA administrative data was not available, which was due to project management and provider follow through (for example, ethnicity data should be collected by all providers and monitored by the Ministry). Incomplete data were found for attendance records as well as socio-demographic information of IYA participants, which affected the data analysis for the IYA programme and this evaluation.

The judgements made in this report are based largely on experiences and perceptions of Ministry staff, providers and participants, and, therefore, reflect the relevance of the IYA programme to the context rather than specialists' views on autism or measurement.

Our approach focuses on relevance, feasibility and fidelity of the inputs and activities rather than achievements of outcomes. However, some observed and reported outcomes are also incorporated in the present report where it was considered useful.

The sample size of parent participants was sufficient given the regional coverage of all 2018 IYAP programme locations covered (six out of eight locations had site visits) and congruent findings. The sample size for teacher programmes (i.e. teacher participants, group leaders and managers of Teacher Providers) is small given the limited number of programmes delivered in the first cohort. However, the findings were relatively congruent on the appropriateness and relevancy of the IYAT programmes.

Based on the data collected through interviews, the evaluation team is unable to sufficiently answer evaluation question 12 (i.e. enabling a more robust evaluation and use list of interested participants as quasi-control group). As evaluation specialists, we do consider baseline information of the interested and waiting list participants to be relevant baseline data.

2.7. Programme Literature review

An online review of literature was undertaken by members of evaluation team. Appendix E contains a matrix of the literature reviewed. Key findings and comments relevant to this IYA process evaluation and the planned impact evaluation are highlighted below.

Online literature review discussion

Prior to the development of Incredible Years Autism, several studies utilised the basic Incredible Years programme and offered this to parents of children with autism, often modified to suit these parents (McIntyre, 2008; Roberts & Pickering, 2010). Other studies where Incredible Years was tailored to suit families of children on the autism spectrum from different cultural groups include Zamora, Harley, and Hudson (2016) where Incredible Years parent training was offered to seven monolingual Spanish speaking parents whose children were on the autism spectrum.

In 2014, Dababnah and Parish (2016) [14] conducted a pilot study which adapted the basic Incredible Years Parent programme for parents of children on the autism spectrum and language delays. The results of this study and their subsequent feasibility study suggested that an adapted version of IYP was acceptable to parents, showed promising results, and was feasible for this group (Dababnah & Parish, 2016a, 2016b; Hutchings et al., 2016).

Parents

More recently, Hutchings et al. (2016) conducted a pilot trial of the Incredible Years Autism programme. They found that parents rated the programme highly, and all eight parents who completed the programme identified it as helpful. Specific components parents found helpful included talking about the course, homework activities, meeting other parents, and learning strategies to help them ignore undesirable behaviour. In addition, all parents in this study reported that IYA had an impact on their parenting and had helped them to understand things from the point of view of their child.

Impacts

Research findings suggest that both the IY programme tailored to parents of children on the autism spectrum and the IYA programme have positive impacts on the families that participate in it. Findings include parents feeling less isolated (Roberts & Pickering, 2010), reduction of negative parent and child behaviour (McIntyre, 2008), decreased parent stress (Dababnah & Parish, 2016a), improved relationships between parents and children (Dababnah & Parish, 2016a) and positive impacts on parenting (Hutchings et al., 2016).

Barriers to participation

Current international research identified some barriers to participation in IY and IYA for families of children on the autism spectrum. For IY, Dababnah and Parish (2016a) identified that one parent cited disruption in children's night-time schedules as the reason they chose not to attend, and this issue was also identified by a parent that withdrew. Other issues that parents struggled with in this study were the distance to class, the desire for more one-on-one support, and the inability to bring their partner to the group. Furthermore, parents struggled with some parts of the programme, such as child-directed play, children being unmotivated by incentives, and not responsive to time-out strategies. Hutchings et al. (2016) identified that the location of the course was a barrier for some parents with some participants travelling considerable distances. One parent described how the cost of creche, buses, and their time made it hard to attend the course.

Support for families

Several studies described ways that they were able to support families to attend the courses. They described how they provided evening sessions, free childcare, and provided participants with dinner. In addition to this, they selected locations based on it being accessible for most participants. Furthermore, if participants experienced hardship due to transportation, the researchers provided bus tokens or arranged for taxis so that participants could attend the course. Roberts and Pickering (2010) also explained that they selected a facility with a relaxed, non-clinical, atmosphere with good parking facilities.

[14] Note the original findings were part of a thesis published in 2014. After this study, in 2015, Incredible Years Autism was developed by Dr Webster-Stratton.

The location was central for the families who participated in the course and the researchers suggest that this may have contributed to the "good up-take" for the programme. Dababnah and Parish (2016b) provided childcare, which was used regularly or occasionally by eight of the fourteen parents. They reflected that all of the participants who used the childcare reported they would not have been able to attend the course if it had not been provided. Zamora et al. (2016) also provided free childcare and a light snack and identified that the location was accessible to all families by car, bus, or train.

Linking the literature and evaluation findings

The evaluation findings and insights, and contribution to the emerging knowledge base are referred to in the evaluation conclusions (section 4.) in this report.

3. Overall Findings

This section outlines overall findings from the process evaluation, consolidating both quantitative data (i.e. programme administrative records) and qualitative data (i.e. interviews) collected. The 2018 Incredible Years Autism Programme comprise of four input components. These include:

- Incredible Years Parent Programme providers.
- Incredible Years Teacher Programme providers.
- Workforce providers – mentors and coaching.
- Ministry of Education – national coordination programme oversight and workforce inputs and particular regional inputs to IYA programmes.

After an initial discussion IYA initial implementation, enrolment and attendance data, the process evaluation findings are structured under the four above mentioned input components, using the four evaluation focus areas and research questions (refer to section 2.4.).

Initial IYA Programme Implementation

For 2018, IYAP and IYAT programmes are delivered in the following regions:

1. Auckland (IYAP)
2. Tauranga (IYAP & IYAT)
3. Hawke's Bay (IYAP & IYAT)
4. Taranaki (IYAT)
5. Wellington (IYAP)
6. Nelson (IYAP & IYAT)
7. Christchurch (IYAP & IYAT)
8. Invercargill (IYAP)

Each programme is facilitated by two IY accredited group leaders who are trained to deliver IYA. The training of group leaders was undertaken by Dr Webster Stratton[15] in February 2018. The Werry Centre is contracted to provide IYAP group leader coaching is using two independent IYP mentors and one Ministry of Education IYP mentor based in Hawkes Bay. IYAT group leader coaching is provided by Explore Services using two independent IYT mentors based in Taranaki. These mentors have extensive IY Parent and Teacher programme experience and need to complete delivery of sufficient IYA programmes in their role as group leaders to become accredited IYA group leaders and peer coaches. Coaching in IYA for these IY mentors is being provided by the programme developer.

The modality of IYAP programme delivery varied between regions. For this cohort of programmes, sole provider delivery is currently found in Wellington, Motueka (Nelson), and Hastings (Hawkes Bay). Co-delivery (provider together with the Ministry) is currently provided in Tauranga, Invercargill and Christchurch. Sole Ministry delivery is currently found in Napier (Hawkes Bay) and Auckland.

[15] The American Incredible Years® developer.

IYA Enrolment and attendance

Table 3 below presents a summary on administrative data for the initial implementation of IYA programmes, specifying enrolment and attendance data from March to October (12th) 2018, which was provided by the Ministry.

Table 3: Summary administrative data (IYAP and IYAT combined)

	Progs	Enrolments		Attendance at first & last session		Estimated Children *		Attendance at all sessions **											Drop outs
	#	#	Av	First	Final	#	Av	1	2	3	4	5	6	7	8	9	10	11	12	13	#
IYA Parent-Completed only	7	70	10	55	43	49	7	63	60	59	49	52	46	50	42	41	40	43	42	39	17
%				79	61			90	86	84	70	74	66	71	60	59	57	61	60	56	24
IYA Parent	15	143	10	128	N/A	112	7														
IYAT Teacher-completed only	6	68	11	66	63	N/A	N/A	66	66	63	61	61	63								1
%				97	93			97	97	93	90	90	93								3

Provided by the Ministry of Education

* Excludes children where the parent dropped out within the first three sessions or did not turn up to the first session.

** Up to session 13 for parent because for most providers this is the last session they are counting.

Overall, both IYAP and IYAT programmes met targets in terms of enrolments and based on average numbers. On average, a completed IYAP programme included seven children from seven different families with ten caregiver participants in a programme. Completed IYAT programmes hit, on average, the maximum limit of twelve enrolments of teacher participants in a programme.

However, there are marked differences between attendance levels of IYAP and IYAT programmes. While for both programmes, attendance levels decrease over the course of the programme, IYAT attendance remains high at 90% and more (on average). The IYAP attendance levels drop to around 60% in the second half of the programme (on average). Similarly, the drop-out numbers for IYAP programmes average 24% on all enrolments. Further analysis of enrolment and attendance data for IYAP and IYAT programmes is incorporated in sub-sections 3.1. and 3.2. respectively.

In the following, this section is further structured by the four input components comprising the IYA programme and include:

1. Incredible Years Parent Programme (delivery).
2. Incredible Years Teacher Programme (delivery).
3. Workforce (for IYA programmes).
4. (Role of) the Ministry of Education.

The evaluation focus areas (1) demand, access and reach; (2) programme implementation; (3) feasibility; and (4) learnings to inform the impact evaluation are addressed where relevant within the four inputs components.

3.1. Incredible Years Autism Parent programme

IYAP programmes are evaluated against the four focus areas. Findings in this section refer to the perspective of the on the ground programme delivery, represented by group leaders delivering the programme and participants. In the following text, participants are referred to as 'caregivers' to include the wider family or whānau members beside the parents of children on the autism spectrum. The evaluation team conducted interviews with group leaders (in pairs) and caregivers (as group) in all eight locations delivering IYAP programmes.[16]

3.1.1. Demand, access and reach

Evaluation questions for focus area *Demand, access and reach* included questions 1-4:

1. *What is the demand for services, and who is accessing the programme (e.g. socio-demographic profile, location, ethnicity etc.)?*
2. *How are people accessing services differently, and is this access pathway working effectively?*
3. *How well is the programme in reaching the right children (i.e. do those who need the programme access it and do those who access the programme need it)?*
    a. *Is the programme equitable in reaching Māori and Pasifika children?*
4. *What, if any, are the barriers to parents and teachers accessing the programmes?*

Each question is addressed in the following in respective order.

Demand for the programme

As mentioned above and shown in Table 3, on average, IYAP programmes achieved target numbers for enrolments on IYAP programmes. However, regional differences exist with some regions just below the minimum target (i.e. seven children from seven different families). Table 4 (over page) provides enrolment and attendance data for each IYAP programme[17]. Providers who did receive minimum enrolments in their first round of programme delivery included IYAP locations Motueka (Nelson) and Christchurch. Tauranga (Bay of Plenty) delivered two programmes in parallel, one of which had a maximum of twelve caregivers enrolled but only involved five children from different families.

Challenges with meeting target numbers have been explained by group leaders with delayed advertising of the programme or last-minute personal situational changes for caregivers and/or their children of already enrolled families, such as transfers or drop outs of families. Advertising issues have been dealt with in the meantime and results to these changes are already being seen, at last by one provider. For example, Christchurch is now reporting that they have a waiting list of families wanting to enrol in the programme.[18] Names were provided to the evaluation team.

The data available for the present evaluation does not allow for drawing a socio-demographic profile of families accessing the IYAP programme. The evaluation team found diversity (in terms of families' ethnicity backgrounds) within a programme varied from region to region. From the limited enrolment data provided it was apparent there were more Māori participants in IYA programmes in regions such as Hawkes Bay and Tauranga. This is line with population demographics in the regions. However, the first cohort of IYAP programmes appeared to include limited Pasifika families.

[16] Eight location include Hastings and Napier (both Hawkes Bay), Tauranga (Bay of Plenty), Auckland, Wellington, Motueka (Nelson), Christchurch, Invercargill.

[17] Data retrieved 12th October 2018

[18] Note that the evaluation team did not see this waiting list and hence cannot verify this information.

Table 4:IYAP regional administrative data

	Dates		Participant numbers					Drop outs
	Start	End	Enrolled Caregivers	Attended session 1	Attended final session	Estimated children families at start	Participants who received at least one make up session	Number
Bay of Plenty	27-Mar	26-Jun	12	11	9	8	9	2
Bay of Plenty	28-Mar	27-Jun	12	7	2	5	3	4
Hawkes Bay	6-Apr	10-Aug	12	9	4	9	3	5
Invercargill	2-May	15-Aug	7	7	4	7	2	3
Wellington	17-May	13-Sep	11	9	11	8	6	0
Nelson	28-May	24-Sep	8	7	8	6	5	0
Hawkes Bay	18-Jun	1-Oct	8	7		7		
Christchurch	19-Jun	28-Sep	8	5	5	6	1	3
Auckland	7-Aug	6-Nov	9	6		6		
Auckland	8-Aug	6-Nov	11	11		10		
Auckland	9-Aug	22-Nov	11	11		9		
Bay of Plenty	2-Aug	13-Nov	11	9		9		
Bay of Plenty	3-Aug	14-Nov	8	8		7		
Wellington	15-Aug	21-Nov	9	5		7		
Wellington	24-Aug	7-Dec	6	5		5		
Totals			143	117	43	109	29	17

Access pathways to the programme

Identified pathways used by caregivers to access IYAP are generally through health, education or social systems. IYAP programme access points mentioned by caregivers and documented in the sample of administrative data provided are listed below.

- Health:
  - ASD (Autism spectrum disorder) coordinators
  - Paediatricians
  - Mental health support services
- Education:
  - Early intervention teacher
  - Speech language therapists
  - Pre-school
  - Playgroups
  - Massey University
- Social:
  - Social worker

The evaluation team found another relevant pathway in IY programmes, themselves. Many caregivers reported to have been involved with the basic IYP programme previously and named IYP as their access point to IYAP. Some of these caregivers had been reportedly on waiting lists for months before starting their IYAP programme.

In view of the expanded communication and advertisement material, the evaluation team finds it worth noting that one of the interviewed caregivers reported to have learned about the programme through a IYAP poster advertisement sighted in a hospital.

Reach of parent programme

IYAP is reaching families with children on the autism spectrum, many of which have more than one child on the autism spectrum (including older children outside the IYA focus age group). Parent Providers and group leaders who are generally well connected in their community and to regional early education and health services have been using their already established networks to promote IYAP programmes.

In all locations, group leaders reported to have started or intended exploring new ways and opportunities for partnership and collaboration to extend the IYA reach to families. Such efforts reportedly incorporate reflections and learnings from the first round of programmes. This is particularly true for regions with lower enrolment numbers. For example, group leaders reported contacting pre-schools and speech therapists, approaching hospitals and Autism New Zealand, and establishing relationships to ASD coordinators. On a more general note, the importance of a cross-sector approach with broad partnerships between the education and health sector in the way forward was highlighted by a group leader and IY mentor. A key role in terms of first contact points was seen in paediatricians, which needs to be a focus for future work according to the group leader and IY mentor. This coordinated approach is occurring in Christchurch, which has resulted in both parents and teachers attending IYA programme and two children on autism spectrum are having the use of IYA strategies at home and at school.

IYA may benefit in future from word-of-mouth communication similar to the basic IY programmes. Caregivers are reportedly recommending the programme to other families with children on the autism spectrum. Accordingly, Parent Providers have reported that they are increasingly seeing caregivers referring themselves to IYAP programmes.

In some cases, IYAP programmes in this initial implementation phase have been filled with caregivers with extensive pre-existing knowledge levels on topics covered by IYA, which led the group leader to question whether they had reached the "right" families. While families met eligibility criteria, the group leader considered some caregivers "over-trained" and consider the programme might have been more useful to less informed families. There are no formal prerequisites in the *Supplementary Guidelines* for attending IYAP programmes. However, from the process evaluation group discussions, it was evident that over half of the caregivers attending IYAP programmes had already attended other parenting programmes, including the basic IYP programme. Many caregivers said they have attended some general Autism awareness programmes, which were aimed at increasing knowledge about children on the autism spectrum.

Complete administrative data on IYAP participating families' ethnicities is unavailable, hence, the present evaluation cannot judge whether the programme is reaching Māori and Pasifika equitably. Observations and qualitative data indicate generally low participations of Pasifika families while participation of Māori families is higher in some regions (e.g. Hawkes Bay). The provider in these areas used their existing networks to reach out to iwi and interested caregivers. Many group leaders reported they had limited networks to Pasifika communities and acknowledged this was an area to investigate further for future programmes.

Barriers to accessing the programme

Barriers for families accessing IYAP heavily depend on resources available to them. IYAP means a considerable time commitment for caregivers who are (more often than not) working and have young children displaying challenging behaviours.

Group leaders who are dealing with families directly saw barriers in

- Childcare / family support available.
- Families with several children on the autism spectrum.
- High stress levels ("parents have a lot going on in their lives").
- Parents with anxieties.

Some providers offered night sessions to make it easier for working caregivers to attend the programme. Where there were only daytime sessions, caregivers suggested to have night sessions, so their partners could join the programme. The evaluation team considers further examination of IYAP schedule time may be useful in view of maximising attendance.

3.1.2. IYAP programme implementation

Evaluation questions for focus area *Programme implementation* included questions 5-9:

5. *Is the programme being implemented as intended, and in a way that maintains its fidelity?*
6. *What aspects of the programme are working well/not well (for example, participation and delivery, communications between relevant health/education stakeholders, such as DHBs, local ASD coordinator and/or sector groups)?*
    a. *What aspects of the programme could be improved – for parents and for teachers?*
    b. *Does the programme appear to work better in some areas than others? Why?*
7. *Are all of the aspects of the programme required to achieve the intended outputs and outcomes, or are some aspects more fundamental than others?*
8. *What changes (if any) are being made to the programme to ensure delivery is culturally appropriate for Māori and Pasifika, and why?*
9. *How well are the Ministry's processes around communication and implementation of the programme supporting best-practice delivery of the programme?*

Each question is addressed in the following in respective order.

Fidelity of the programme

Fidelity in the context of IY and IYA programmes have been defined in section 1.5. above. Overall, group leaders have been following the programme, including filling out forms provided by the Ministry and complying with the programme's agendas. Both group leaders and participants confirmed that:

- profiles have been created and maintained throughout the course,
- vignettes been used (see Figure 3),
- role plays been applied, and
- strategies practiced at home.

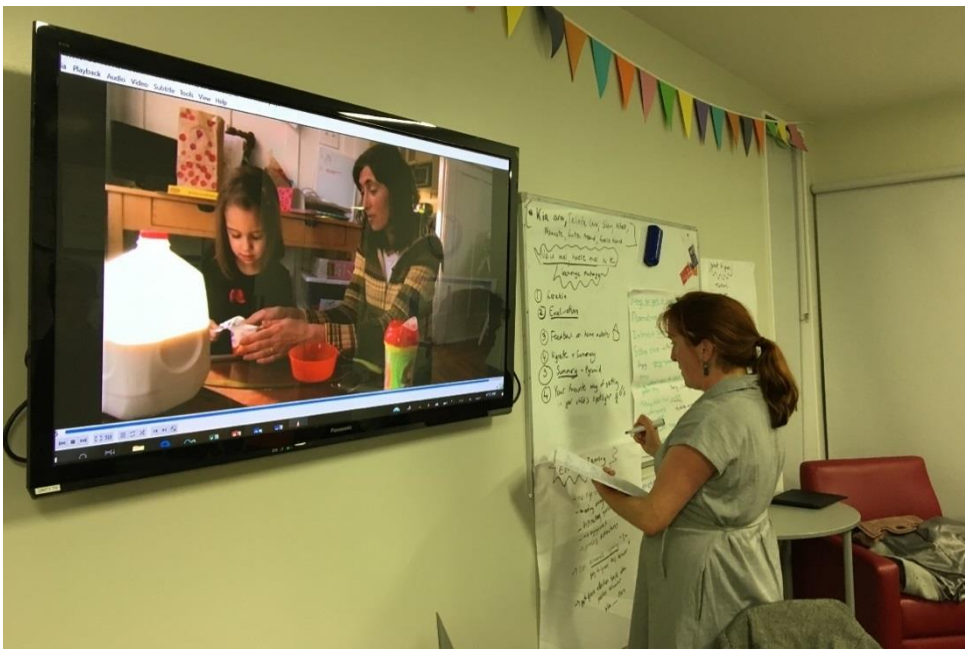

Figure 3: Example of vignette played at IYAP session.

Group leaders generally aimed to deliver the programme content in its entirety and in the correct sequence. However, because of considerable differences in caregivers' level of pre-existing knowledge relevant to the programme, adjustments had to be made. For example, in some regions group leaders had to make time to explain basic IY concepts (e.g. parenting pyramid – see Figure 4) to caregivers as the group had little or no pre-existing knowledge on Autism or IY.

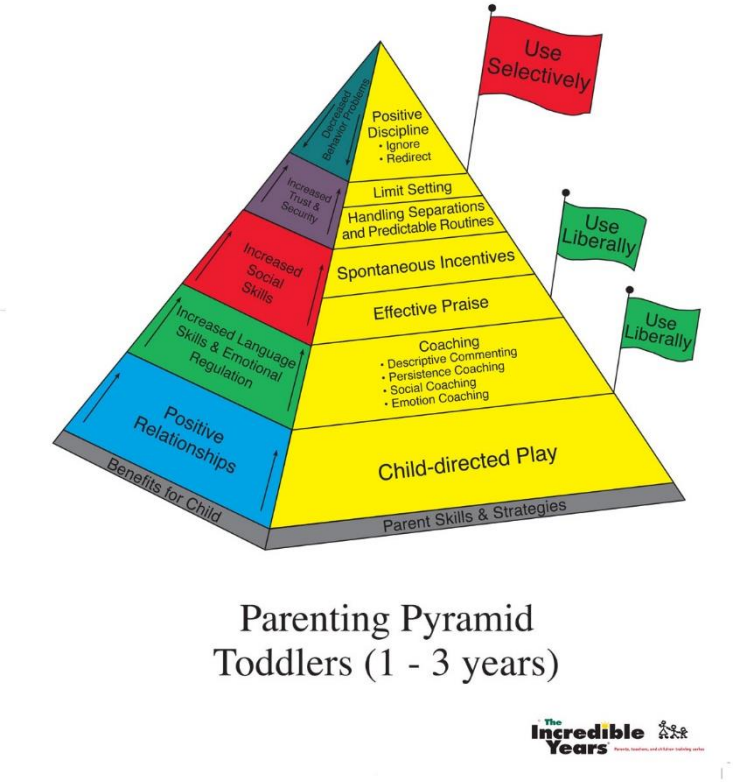

Figure 4: IY parenting pyramid

Contrasting examples were also found. For example, in Wellington, group leaders found a highly informed group of caregivers who had very specific interests in the programme, such as behaviour management strategies, which were covered in the later sessions of the programme. Both scenarios created challenges for group leaders in either adding more content to the already comprehensive programme content or responding to caregivers' specific expectations.

Administrative data indicates sporadic attendance of caregivers in most regions (see Appendix F), which raises the questions whether they received the full content of the programme. Many group leaders reported offering caregivers make-up sessions to catch up on programme content they have missed. According to group leaders, most caregivers have used make-up sessions. However, group leaders also reported on caregivers missing sessions out of time constraints and refused make-up sessions for the same reason. (Note, it is not clear to the evaluation team if or how make-up sessions are recorded. Information on make-up sessions are based on information given by interviewees. For discussion on sustainability of providing make-up session refer to section 3.3.).

Group leaders' responsiveness to caregivers and their children's needs varied. In most cases, the evaluation team found group leaders have been flexible and responsive, which was confirmed by interviewed caregivers respectively. Such responsive approach included tailoring the programme's content to the families' children, group leaders followed up with caregivers between sessions, providing childcare and vouchers for reimbursement of travel costs from Ministry funding where needed. However, providing extra support for families did not always prevent caregivers from dropping out of the programme. A few programmes experienced high drop-out rates, which raises the question whether there are other key factors that influence caregivers' regular attendance.

Programme experience and possible improvements

With the exception of one programme, IYAP was generally perceived as a positive experience by caregivers. Beside the educational purpose of the programme, IYAP offered caregivers a place to meet other families facing similar challenges. Many caregivers noted the programme had functioned as a support group for them and intended to maintain regular catch-ups with the other families beyond the programme.

> *For me, the wonderful thing about his course is that I understand that I am not alone in this process, there are so many other families and parents in the same situation.*
> *(Caregiver interviewee)*

The focus on individualisation to make the programme content more relatable to caregivers' children generally worked well in combination with the relatively small sized groups and the gentle pace of the programme. However, the timeframe of 2.5 hours per session pushed the limits in covering all content and engaging caregivers at the same time. Time pressure was felt by group leaders and many caregivers.

With regard to role-plays, in particular, caregivers' feedback was mixed and varied between seeing value in this practice to feeling uncomfortable with it. From observation of the evaluation team, there appears to be a link between how comfortable caregivers are with role-plays and the degree of established trust relationships within the group.

While group leaders highlighted the usefulness of vignettes to engage the group discussion, different views existed on the part of caregivers regarding the modality of playing vignettes around group discussions. Incredible Years® suggest a stop-start approach for playing vignettes where vignettes are interrupted for group discussions throughout. However, about a third of interviewed caregivers preferred to watch vignettes uninterrupted with a group discussion at the end.

Interviewed group leaders and caregivers in all programmes noted the vignettes were missing non-verbal children, which made it hard to caregivers with non-verbal children on the autism spectrum to relate to the vignettes.

> *With these vignettes I'd perhaps like to see a little more variety of children and some non-verbal children. Almost all children on the vignettes are verbal. … The grandma who was sitting next to me said what a waste of time because that is not like my grandson.*
> *(Group leader interviewee)*

Other suggestions made by caregivers for possible improvements of IYAP include:

- IYA specific resource book.
- New Zealand-specific vignettes.
- Option to bring child along (occasionally).
- Access to database with existing support services and key contacts.
- More time on behavioural management.

While all IYAP programmes experienced absent caregivers over the course of the programme, as indicated in section 3.1.1, attendance appeared more stable in programmes that managed to establish strong trust relationships, both between group leaders and the group, and caregivers among themselves.

Achieving intended outputs and outcomes

IYAP programmes appear to be contributing to intended outputs and (short-term) outcomes – as it refers to the logic model and based on available process evaluation data. The initial analysis of the assessment data was done by the Ministry with the available data at this stage.[19] Without exception, caregivers reported to have learned from IYAP. Learnings included strategies to communicate with their children and manage difficult behaviours but also deeper understanding of their children's challenges and different way of thinking. Caregivers reported IYAP had increased their confidence in being able to support their children. Many caregivers stated the programme had helped them to accept who their children are and felt closer connected to their children.

Caregivers also observed changes in their children. For example, many children improved their language skills since the time caregivers had started attending the IYAP programme. However, some of the changes may be also linked to child's development stages. Therefore, the evaluation team considers care in drawing any causal relationships between the participation of the caregiver in IYAP and behavioural changes in the child.

All aspects of the programme appear relevant towards achieving intended outputs and outcomes. IYAP programmes are structured in a way that enforces gradual learning. Programme content is taught in stages building upon each other. Caregivers who came to the programme to learn about behavioural management specifically (a topic that is taught towards the end of the programme) acknowledged they had to go through all the previous learning stages to comprehend subjects to their full extent.

> *We wanted to start at the top of the pyramid, but we had to build up to it and you can see now this how much we did. We had to do all the previous bits…they were all building and crucial. (Caregiver interviewee)*

New Zealand context and Māori and Pasifika

Te Reo (Māori) language and tikanga (Māori protocols) are being incorporated in the IYA programme delivery. This is fundamental to appropriate service provision in the New Zealand context under the Treaty of Waitangi principles.[20] Interviewed caregivers considered the programme culturally appropriate. The holistic child centred approaches used (such as profiling the child and then documenting observations or changes with using different strategies) were valued.

The evaluation team found the Māori health and well-being model (Figure 5, over page) Whare Tapa Whā (Durie, 2004) consistently being incorporated in IYAP programmes through regular self-care practice (Figure 6, over page) and session discussions in all regions. Caregiver and whānau well-being were a key focus for IYAP sessions as well as the different dimensions of hauora (well-being).

Other Māori concepts could be also found. For example, in Hastings (Hawkes Bay) group leaders described taking what is a strengths-based approach to facilitation and engagement with parents that incorporates tikanga Māori principles, e.g. Tuakana-Teina (mutually supportive and mana-enhancing relationship), karakia, kai, laughter, providing koha (petrol vouchers or money for baby-sitting) so parents can attend the sessions.

[19] Note the current data available are too few to make any claims at this stage.

[20] Waitangi Treaty principles include partnership, reciprocity, autonomy, active protection, options, mutual benefit, equity, equal treatment and redness. For more information see the Waitangi Tribunal website: https://www.waitangitribunal.govt.nz/treaty-of-waitangi/principles-of-the-treaty/

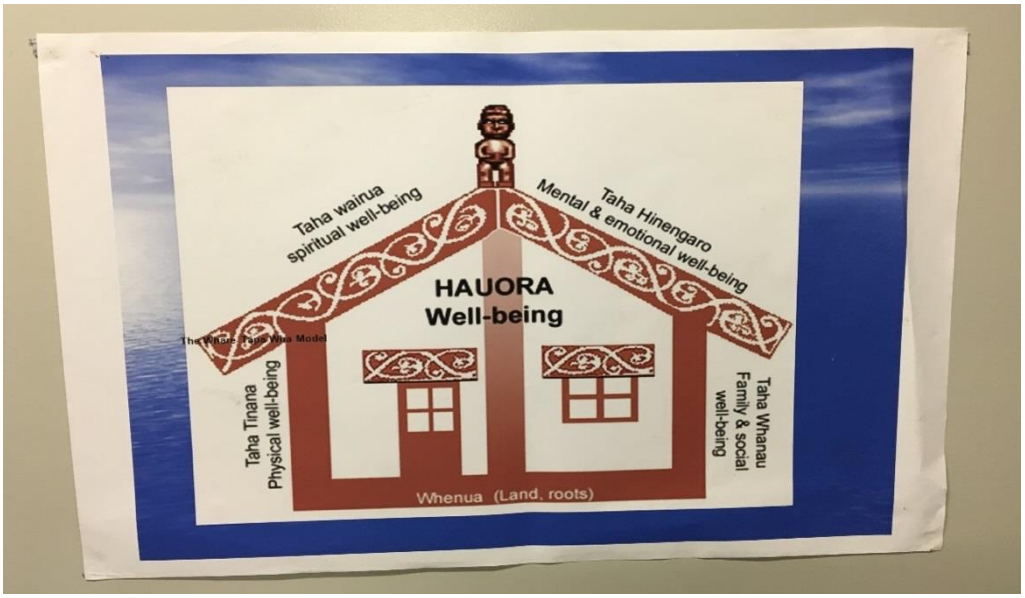

Figure 5: Te whare tapa whã' model on the wall during IYAP sessions.

Figure 6: Example of self-care kete at IYAP session

The Ministry's communication and implementation

Communication between the Ministry and providers has been through managers of Parent Provider organisations, which will be reflected on in the section 3.3. below. Overall, group leaders appreciated the Ministry was supporting IYA programmes. Where subsequent to the tendering process providers could not meet the two accredited group leaders per programme requirement the Ministry supported the programme through co-delivery.

However, the initial implementation of IYAP programmes started off with difficulties for group leaders, in particular. The implementation was widely perceived as rushed. Group leaders reported the communication was unclear at times around measurement tools and the changes in tools. Further, the "amount of paperwork" (i.e. forms) caregivers were confronted with concerned group leaders. The forms also contained too much text for participants and were considered not user-friendly.

3.1.3. Feasibility

The evaluation question for focus area f*easibility* including sustainability was question 10:

10. *How adequate are our inputs and capacity (such as the workforce, the training requirements) in the Ministry of Education and the Incredible Years model to achieve the intended outcomes of the programme, now and in future? What are key considerations (if any) that would affect the longer-term sustainability of the model in New Zealand?*

The evaluation team found that group leaders presented a key factor to the success of the programme. Group leaders required both strong knowledge and soft skills to educate caregivers and response to their individual needs. Therefore, appropriate training and coaching of group leaders is paramount for achieving intended outcomes of the programme.

The consult day with Peter Loft in July 2018 was widely valued by group leaders. It presented group leaders with an opportunity to directly address their questions to the American Incredible Years® team. Many reported that getting confirmation on their tailored approach relevant for the New Zealand context and having questions answered increased their confidence in delivering the programme. The consult day was also an opportunity for group leaders from all regions to meet and exchange their experiences. Such gatherings were highlighted as a way towards consolidation of the way IYAP is delivered on a national level.

> *When we are providing coaching and support it's more the supervision, you know, professional practice level, but the actual cohesiveness of how the programme is built in and what it's done in the different regions really could move with the progress of the programme. (Group leader interviewee)*

3.1.4. Learnings to inform the impact evaluation

Evaluation questions for focus area *Learning to inform the impact evaluation* included questions 11 and 12:

11. *How appropriate are the measures[21] for the different groups in this initiative for the longer-term impact evaluation?*
12. *How well does the demand for services enable a more robust evaluation approach through delayed enrolment or other mechanism (such as maintaining a register of interested participants in other locations)? To what extent could a list of interested participants (maintained as a register by providers) be used as a quasi-control group for the impact evaluation?*

Overall, group leaders were critical of the tools provided to measure impact. Some had trouble understanding the purpose or value of the tools. Group leaders expressed concern about the use of the Parenting Sense of Competence scale as they found it included inappropriate questions that may be harmful on participants.[22]

Regarding the impact evaluation, there is considerable contextual knowledge and experience with providers and group leaders, which could be used to choose appropriate existing measurement tools or design new ones. Some Parent Providers mentioned they have designed their own questionnaires for collecting data for their own records.[23] The *Eyberg* measurement tool (used for the IYP basic programme) was favoured by several group leaders. Other stakeholders mentioned tools, such as the *Young children's participation and environment measures (YC-PEM)* and the *Assessment of preschool children's participation (APCP).* These measures were identified as potentially useful for the impact evaluation as they were tested for validity and

[21] Refer to section 1.5.

[22] The Parenting Sense of Competence scale has been removed in the meantime and is no longer been used in IYAP programmes.

[23] Note the validity and reliability of these data cannot be confirmed without the appropriate process put in place to test it. This would be required for the impact evaluation.

reliability: (a) assessed on children on the autism spectrum among primary aged children (i.e. accuracy) and (b) able to be administered as a "self-assessment" by parents (i.e. feasible). The group leaders and managers requested involvement in the design and use of assessment tools given their professional expertise and experience.

The evaluation team found that profiles of children have been consistently used and maintained over the course of IYAP programmes (see Figure 7). This appears as a potential tool to be considered for the impact evaluation. The holistic approach of the child's profiles supports the hauora (wellbeing) dimensions and strengths-based view for health and autism in the New Zealand context. Maintaining profiles have been a way of documenting changes in the child over the course of the programme and made progress more visual to caregivers.

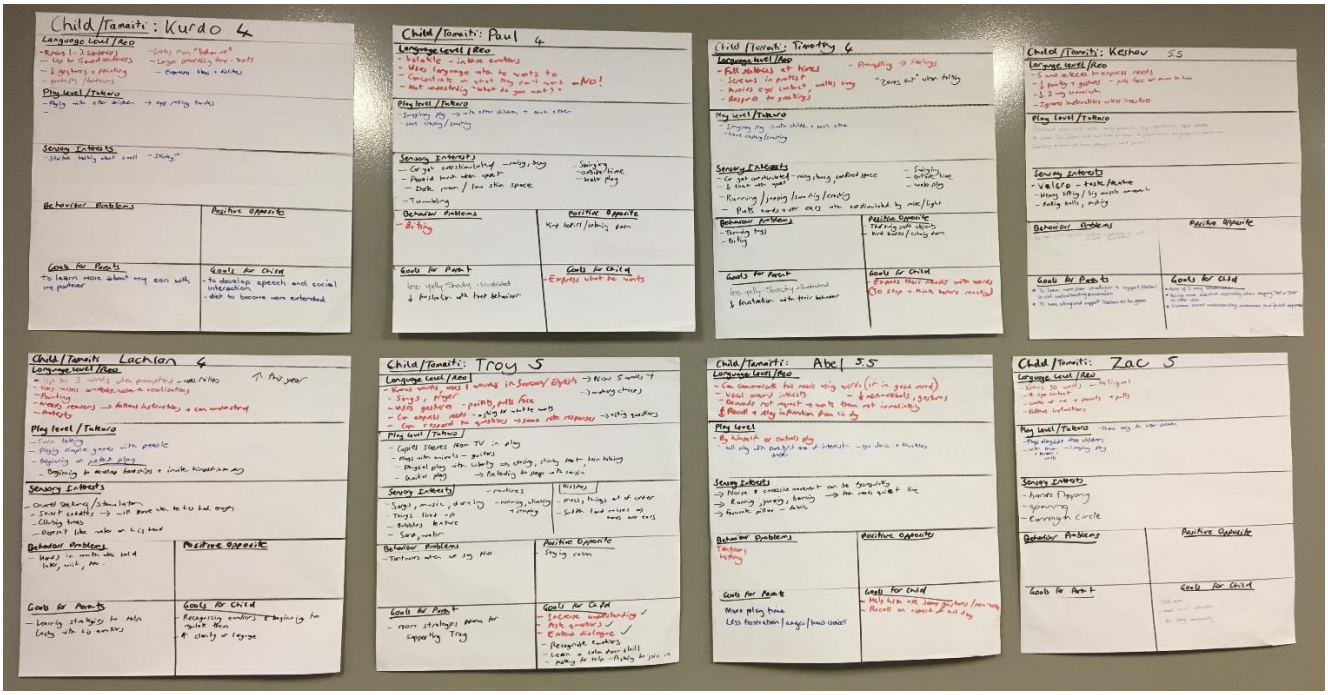

Figure 7: Example of childrens' profiles hanging on the wall during IYAP sessions.

The evaluation team consider that providers need to be more involved with finalising administration and process and impact data to enable a more effective and collaborative process that is manageable and useful.

Based on the data collected through interviews, the evaluation team is unable to sufficiently answer evaluation question 12 (i.e. enabling a more robust evaluation and use list of interested participants as quasi-control group). However, interviewed Health sector stakeholders and evaluation specialists considered the use of families with children on the autism spectrum who are interested in participating in IYAP but on waiting lists could be used as baseline information for the evaluation. A pre-questionnaire was considered an adequate baseline measurement approach to use.

3.2. Incredible Years Autism Teacher programme

IYAT programmes are evaluated against the four focus areas. Findings in this section refer to the perspective of the on the ground programme delivery, represented by group leaders delivering the programme and participants. In the following text, participants are referred to as 'teachers'. The evaluation team conducted interviews with group leaders (in pairs) delivering IYAT programmes in Taranaki and Christchurch and teachers (as group) in Christchurch. The Taranaki programme is being delivered by the only two IYT mentors in New Zealand. They have been trained by the Ministry to deliver IYAT and are contracted to Massey to deliver the programme and to Explore Specialist Services NZ to provide coaching support to IYA group leaders.

3.2.1. Demand, access and reach

As for IYAP programmes in section 3.1., evaluation questions for focus area *Demand, access and reach* included questions 1-4. Each question is addressed in the following in respective order.

Demand for the programme

The programme administrative data for IYAT in Table 5 suggests high demand for the programme, which is supported by the qualitative data. Teacher Providers are required to enrol a minimum of 10 and a maximum of 12 teacher participants.[24] Programmes have been run to their maximum or near maximum participation capacity. However, the evaluation team did not find any existing waiting lists that could provide more insight into the extent of demand for IYAT programmes. Non-existing waiting lists was explained by one IYAT group leader by the lack of an established referral system.

Table 5: IYAT regional administrative data

	Dates		Participation			How many ECEs/Schools			
	Start	End	Enrolled teachers	Attended session 1	Attended final session	ECE	Schools	Drop outs	Participants who received at least one make up session
Taranaki	18-May	15-Jul	12	11	8	7	0	0	8
Christchurch	21-May	26-Jun	12	12	12	8	0	0	0
Hawkes Bay	18-Jun	23-Jul	11	10	10	9	1	1	0
Nelson	5-Jul	20-Sep	10	10	10	10	0	0	0
Bay of Plenty	24-Jul	2-Oct							
Hawkes Bay	30-Jul	3-Sep	11	11	11	11	0	0	0
Taranaki	13-Aug	24-Sep	12	12	12	12	0	0	3
Hawkes Bay	13-Aug	29-Oct							
Christchurch	13-Aug	24-Sep							
Hawkes Bay	1-Oct	5-Nov							
Christchurch	15-Oct	19-Nov							
Bay of Plenty	24-Oct	28-Nov							
Totals			68	66	63	57	1	1	11

[24] According to provider contracts with Massey University, which is in line with Ministry's *Supplementary Guidelines for Incredible Years*.

IYAT presents a valuable professional development opportunity. Interviewed teachers expressed high motivations for enrolling onto IYAT:

> *When I saw that this course was coming up, I was very excited. (Teacher interviewee)*

> *The skills we learning here are really important skills for teachers to have…I see things and want to support them [the children] and so we were looking for help, a connection to help us understanding these children so we can do a better job. (Teacher interviewee)*

Access pathways to the programme

Interviewed group leaders and teachers confirmed that all teachers participating in their IYAT programmes had previously completed the basic IYT programme, therefore, were familiar with the IY series. Pathways used by interviewed teachers to access IYAT included:

- ECE centre manager who approached teacher.
- Own initiative- sent off an expression of interest.
- Word-of-mouth.
- Social media (e.g. Facebook).

One teacher reported to have been approached by a parent of a child the teacher was working with who was attending IYAP. While this was an individual case among interviewed teachers, it shows that interactions between IYAP and IYAT can evolve naturally without intervention of either providers or the Ministry – given, of course, that both IYAP and IYAT programmes are provided in the region.

Reach of teacher programme

Similar to IYAP programmes, Teacher Providers used their own networks for promoting IYAT. All teachers interviewed came from ECE centres and were working with a child on the autism spectrum or recognised as potentially requiring assessment. The teachers enrolled on the Christchurch teacher programme all reported they had previously attended the basic IYT programme, although there are no formal prerequisites to enrol on the IYAT programme. Therefore, teachers in IYAT programmes had good knowledge of the IY basic concepts.

Again, similar to IYAP programmes, group leaders understood the need to expand their reach and reported on intention to approach teachers in the wider region, which they described as a “work-in-progress” endeavour. It was also pointed out that, given IYA programmes had been newly introduced to New Zealand, it usually takes some time to build engagement. Group leaders reported that previous experience with IY programmes showed that engagement increases after three rounds of programme delivery.

Barriers for accessing the programme

The evaluation team did not identify any barriers for teachers accessing the programme. Teachers could be released to participate in IYAT programmes, however, appropriate lead-in time to arrange for relief teachers was emphasised (refer also section 3.2.4.). Interviewed teachers were more concerned about barriers for caregiver accessing IYAP. Assessments of the value using teacher-parent relationships to promote and reach teachers and parents for both programmes differed significantly between interviewed group leaders and teachers. While group leaders saw the interaction between caregivers and teachers as a natural way to promote both IYAT and IYAP, teachers expressed concern about approaching caregivers of children they had identified as being on the autism spectrum. Teachers explained that they often had to be the first person to use the term ‘autism’ in front of caregivers and emphasised their need to be equipped to start this kind of conversation.

3.2.2. IYAT Programme implementation

As for IYAP programmes in section 3.1., evaluation questions for focus area *Programme implementation* included 5-9. Each question is addressed in the following in respective order.

Fidelity of the programme

The evaluation team found that group leaders followed the programme and visited teachers prior to the programme. However, variations were found in terms of session frequency and length in delivering programmes. For example, Christchurch provided weekly sessions, which reportedly worked well for teachers who managed to practice learnings between sessions. Taranaki tailored delivery of the programme to align with teachers' schedules, which resulted in a combination of fortnightly and weekly sessions as well as half- and full-day blocks. While the *Supplementary Guidelines* indicate fortnightly sessions as a standard, these group leaders considered that merging session into a full-day session was reasonable where session topics were closely related. The evaluation team considers this modality requires further examination as to whether having half- or full-day sessions is an appropriate delivery modality option for IYAT programme fidelity.

Compared to IYAP programmes, attendance for IYAT was relatively stable. Only Taranaki teachers experienced some absentees. This was explained by the group leaders due to injuries and other emergency situations, for which they reportedly provided make-up sessions. The evaluation team suggests documenting reasons why teachers (and participants, in general) miss IYA programme sessions in order to track absentees and be able to respond accordingly (As with IYAP programmes, it is not clear to the evaluation team if or how make-up sessions are recorded.)

Programme experience and possible improvements

Overall, participation and delivery appear to be working well for both teachers and group leaders. Up to two teachers are attending from each ECE centre or school. The Ministry provides a contribution towards teacher release so that ECE centres and schools can release teachers to attend IYAT programmes. This way, IYAT programme sessions had been integrated in teachers' normal work schedule without requiring them to invest extra or their own leisure time. Interviewed teachers and group leaders reported reliever teachers had been booked for four hours (for weekly IYAT sessions), allowing teachers extra time for discussions and exchanges with other teachers in the group. In Christchurch, providers provided lunch to encourage such exchanges.

Teachers emphasised the value of IYAT – and the IY series, in general – lay in the practical nature of the programmes. Because they could practice new learned strategies right away with children at their ECE centres and in real situations, their learning development reportedly felt enormous and hugely effective. A key learning for teachers was that children on the autism spectrum needed social engagement.

> *They [the children] are quietly going about their day and it's the awareness that…these children who are not asking for attention and connection need it just as much as [other children]. (Teacher interviewee)*

As mentioned above, teachers interviewed had already been involved with the IYT programmes. Teachers explained that their learnings from that basic programme were an important knowledge foundation going into the more specialised IYAT programme. However, while teachers could find some of the IY tools used again in the IYA setting (e.g. emotion strips – see Figure 8, over page), autism-specific tools and strategies sometimes profoundly differed from those taught in basic IYT programmes. Teachers reported that, for example, "getting into the child's spotlight" was neither a strategy taught in IYT programmes nor one that teachers' would

normally use with other children. Vice versa, strategies teachers learned at IYT programmes were not appropriate for children on the autism spectrum.

Figure 8: Emotion strip in kete (basket) used in IYAT session

Achieving intended outputs and outcomes

Based on the interviews conducted for this process evaluation, IYAT is showing intended outcomes in terms of increased skill set and confidence of teachers working with children on the autism spectrum. Teachers reported the programme had helped building their confidence, knowledge and skills and they felt better equipped working with children on the autism spectrum than before the programme. Resources (i.e. materials and knowledge) received through IYAT have been reportedly shared with peers at teachers' ECE centres, sometimes also with parents of children teachers were working with.

Teachers also reported on observed changes in the children they were working with since they had started participating in IYAT, which they said had been also noted by some parents of these children in their discussion with teachers. For example, some children had started talking or socialising with other children, others had developed some fine motor skills. Excitement in teachers about such achievements (as changes in children were generally perceived) were openly expressed.

> *We have been trying and trying to get him [the child] to socialise and then we are learning this technique of getting in their spotlight and doing a commentary about what they are doing...it's been like being on steroids, which is not what we normally would do with other children…well, our wee guy, he is now actually playing with other children in the last months or so…That was like a real wow! It was amazing! (Teacher interviewee)*

> *It was a life-changing experience for us as teachers to know that we can change his [the child's] life. (Teacher interviewee)*

New Zealand context and Māori and Pasifika

Based on the evaluation team's observation, group leaders have incorporated cultural protocols, including karakia (welcome) and kai (food) as part of the programme sessions. With a holistic and well-being focus, the programmes appear to align with Māori hauora (wellbeing) concepts. This IYA wellbeing focus is a key factor for the tailored IYA programmes aligning with the New Zealand health context. However, the evaluation team noted that the vast majority of teachers were New Zealand European. This is an area that requires further examination (for example, by examining consistency of this finding with IYT programmes where sufficient ethnicity data is available).

The Ministry's communication and implementation

Communication with the Ministry was through Massey University and will be discussed in section 3.3.

3.2.3. Feasibility

As for IYAP programmes in section 3.1., the evaluation question for focus area *Feasibility* referred to question 10.

As mentioned above, the Ministry provides a contribution for teacher release for teachers attending IYAT programmes. This approach appeared to work well for teachers.

A group leader pointed to the usefulness of keeping the structure designed by Dr Webster-Stratton (i.e. accredited group leaders become peer-coachers who become mentors) and suggested regular get-togethers (e.g. every 6 months). This was seen particularly important at the current stage where everybody is still learning. In this context, the consult day was mentioned as critical part of the learning process and beneficial towards group cohesiveness of group leaders, not just on a regional but also on a national level. Group cohesiveness was stressed in terms of knowledge sharing and continuous learning, which was felt as very important given the complexity of the programme. Further, it was argued that it was important to keep tailoring the programme alongside the learning process.

> *We have other programmes here in New Zealand which are funded by the Ministry of Health and I think it is really important that all these programmes at some point are joined up so it is seamless for parents, seamless for families. I think that's got to be a goal. (Group leader interviewee)*

3.2.4. Learnings to inform the impact evaluation

As for IYAP programmes in section 3.1., evaluation questions for focus area *Learning to inform the impact evaluation* included questions 11 and 12.

The relevance of the measurement tools was not clear to teachers. Teachers felt the questions were confusing and repetitive. Further, various teachers noted that the language and type of communication referred to in the tools did not respond to those used at ECE centres. Another teacher suggested the measurement tools should be tailored to the learning development process during the programme.

Group leaders also felt the measurement tools required some more work. Some group leaders noted the 'Positive Behaviour management – Time-out' tool, in particular, was neither autism nor programme sensitive as it is not an appropriate strategy to apply to children on the autism spectrum. This was also noticed by teachers.

3.3. Workforce for IYA Parent and Teacher programmes

In this section, evaluation focus areas *Demand, access and reach, Implementation* and *Feasibility* are addressed from the perspective of the workforce, represented by Massey University (in their capacity of umbrella contractor for all IYAT delivery contracts) and the managers of four Parent Providers and one Teacher Provider. Neither Massey University nor managers of Parent Providers have been involved in the use of assessments in the programme, hence the focus area *Learning to inform the impact evaluation* is not covered in this section.

3.3.1. Demand, access and reach

Providers initially used their own networks to reach out to families and teachers interested in and eligible for the IYAP and IYAT programmes. In multiple cases this worked well with providers meeting sufficient demand to deliver IYAP and IYAT programmes in the first year of cohorts. Where providers could not fall back on existing networks the Ministry provided advice. For example, in Christchurch the Parent Provider was advised to build new partnerships and collaborative relationships. They then systematically identified potential partners who were contact points for families with children on the autism spectrum (e.g. existing service providers, children with diagnoses, adaptive education and intervention centres, etc.) and contacted them to recruit caregivers. The manager reported they intended to maintain this approach as it had worked well for them.

On the part of IYAT programmes, demand is believed to be high and the need to educate teachers how to work with children on the autism spectrum was stressed. IYAT presents an attractive professional development opportunity and is seen as an "easy sell" to teachers. Given the perceived high demand among ECE teachers, the numbers of provided IYAT programmes was considered as insufficient for the demand.

With regard to access and reach, the question was raised whether, from a strategic point of view, the selected locations for IYAP and IYAT delivery had been the most appropriate. Particularly if a priority was to reach Māori and Pasifika families, other regions such as Gisborne or Whangarei could have been considered. Current delivery areas also did not include especially low social economic areas or rural regions.[25]

3.3.2. Workforce implementation

Because of the different contracting modalities for IYAP and IYAT, relationships and communication between the Ministry and Parent Providers differed from those to Teacher Providers.

The evaluation team found the Ministry and Parent Providers managed to build respectful relationships and were collaborating well. Despite inconveniences regarding the changes to the suite of measurement tools being used for the evaluation (mentioned in section 1.5. and in 3.1.4.) and uncertainties around how far to market the programme, communication from the Ministry was generally perceived positively by Parent Providers and the Ministry has been responsive to providers' needs.

> *I think they [Ministry programme team] have worked really hard and did the best that they've been able to and been quite responsive. Whenever we had a worry, they did their best to follow up on that. (Parent Provider manager interviewee)*

For all providers except Te Whānau Kotahi, IYAP and IYAT had been delivered for the first time. The programme was considered to be at the initial implementation stage. Providers reflected on learning from delivering the programmes to the first cohort and considered improvement for future programmes.

[25] Note none of these regions had providers responding to the open tender for IYAP programmes or have been approached by Massey University.

They have had to get familiar with it [the programme] and know how it would work on the ground with the parents. So, I think each programme will become better and better because they will be more comfortable with the concepts and the way you have to work and the parents they are working with and so forth. I think, it will become much smoother as they progress to deliver each programme. (Parent Provider manager interviewee)

Parent Providers have been mindful of the challenges caregivers face. Most providers have made efforts to accommodate caregivers' special needs and make it easier for them to attend the programme (e.g. using Ministry disbursements funding for petrol vouchers and childcare and carrying out make-up sessions, home visits and follow-ups) as explained in section 3.1. Some Parent Providers offered further services on their own initiative, including two full extra sessions to allow more time going through the programme's content or providing caregivers with autism information material they could hand out to people when needed.

Overall, the evaluation team observed that the more flexible providers were to respond to caregivers' needs that higher the attendance in the programme. However, the time commitment of the programme combined with the constraints of families remains a challenge.

With the parents, though – and time will tell, I guess – the lengths and number of sessions: how that is actually going to go for parents that we are talking about? [Families] that have already a lot of pressure and a lot of competing demands and a lot of professionals involved in their lives…wondering whether there is a sustainability issue…We had families who found it difficult to sustain for the whole time. (Parent Provider manager interviewee)

The delayed roll out of IYAT programmes caused challenges in aligning IYAP and IYAT programmes, which affected the recruitment of teachers and the ability to comply with formal protocols.

The Ministry's guidelines for IYA provided that priority was to be given to:

1. Kaiako (teachers) working with a child whose caregiver was participating in IYAP, then
2. Kaiako (teachers) from early learning services who are working with a child on the autism spectrum.[26]

It was reported that Teacher Providers recruited solely according to the second priority criteria. Also, in some cases, where the IYAT programme started before the IYAP in the same in region, the procedure outlined in the *Supplementary Guidelines* to seek consent from caregivers allowing Teacher Provider to contact their child's early learning service or school could not be applied.

Overall, the implementation was perceived as rushed. For the alignment of IYAP and IYAT, in particular, the timing was crucial to be able to link up programmes with regard to receiving and sharing information of referrals and planning accordingly. For the first cohort of IYA programmes interviewed, this was not achieved.

The Implementation Review Day in August 2018 provided an opportunity for providers of both programmes to meet, exchange and discuss possibilities to address challenges. Interactions between providers as well as group leaders delivering either IYAP or IYAT was generally perceived as beneficial.

I think this [the implementation review day] was a really good initiative because I think that networking between providers is a great learning opportunity about what's worked well and what hasn't worked well. (Parent Provider manager interviewee)

[26] The Ministry of Education, Supplementary Guidelines for Incredible Years, p. 12

At the Implementation Review Day providers also discussed with the Ministry the sustainability of providing make-ups for sessions participants had missed. IYA providers found three make-up sessions was sustainable for them to provide with the funding available.

3.3.3. Feasibility

Regarding the sustainability of IYA programmes, the evaluation team found IYA programmes had both strengths and constraints. Interviewed Provider managers assessed the contract funding as realistic[27] and saw benefits for them in terms of the established professional development pathways and accreditations.

However, a lack of available group leaders to deliver IYAP and IYAT programmes have been signalled as a constraint in various regions. Two IYAP programmes (Christchurch and Bay of Plenty) have been co-delivered by the provider and the Ministry in order to meet the requirement of two accredited group leaders per programme, because providers alone could not meet the requirement. In this context, a critical issue seems to be the capacity of trainings for accreditation of group leaders. For example, Christchurch reported they had difficulties to get training spaces for potential new group leaders. In view of possible expansions of the IYAP programme and requirement of IYA accredited group leaders, the need for enough training places for new group leaders to ensure sufficient capabilities for offering more IYAP programmes was seen as critical.

A possible partnership between the Ministry and providers in the governance of the programme was suggested. This would allow combining knowledge from all angles (i.e. service delivery on the ground, contracting, project management, etc.) and key documents could be developed, such as Terms of Reference and standards. Value was seen in relationship building and collaboration, which may also allow the creation and support of professional networks.

[27] Note only mangers of Parent Providers had been interviewed.

3.4. Ministry of Education role

The evaluation team conducted interviews with both co-leaders of the IYA programme at the Ministry and a Ministry evaluation staff member involved in the programme. Views of stakeholders the evaluation team interviewed are incorporated in this section representing a strategic and national view.

3.4.1. Demand, access and reach

While responsibility to market IYA programmes and recruit participants is with the providers, the Ministry had a role in the overall communication and targeting strategy. Here, the Ministry had been faced with several challenges in measuring demand, making the programme accessible, and reaching focus groups. However, it also proved itself as being adaptive and responsive.

For example, given the focus of IYA on children aged between two and five, there are challenges in identifying children on the autism spectrum in this age group. There is no systematic screening for autism in New Zealand, therefore children at the age of two often have not been diagnosed. This makes measuring the potential demand for IYA programmes difficult. The Ministry responded to this situation by removing the eligibility criteria of a diagnosed child for IYA programmes in New Zealand, which has been positively acknowledged by both programme providers and participants. However, uncertainty about demand levels (in statistical terms) and patterns (demographic and geographic) remain a challenge. The evaluation team suggests a more formal approach asking providers to substantiate waiting lists. Currently, providers choose how to manage waiting lists.

In addition to the late diagnosis issue, identifying children within the IYA target population is challenged by the need for these children to be exposed to contact points linked to IYA programmes (such as ECE centres), which may not always be the case. The lack of exposure to contact points is likely to be found with children from families with lower socioeconomic status, which creates a potential gap for IYA programmes. Further, families themselves may also not recognise or misperceive their child's behaviour – characteristic of the autism spectrum – and do not seek for help, which also makes it difficult for these children to be identified.

3.4.2. Programme implementation

The Ministry took on the coordination for IYA programme in New Zealand. In this capacity, the Ministry managed contracts for IYA programmes delivery, provided advice to providers where needed and organised events, such as the consult day for all group leaders and the implementation review day for all providers. Overall, the evaluation team found the Ministry performed well on these tasks, which is evident in the feedback discussed in the previous sections.

The delayed roll out of the Teacher programme has impacted on the links between the parent and teacher programmes in the regions. However, the evaluation findings showed there were links, for example, in the Christchurch region between IYAP and IYAT programmes. This has resulted in a shared knowledge and understanding around a child of relevant strategies. Further, one of the teachers in an IYAT group discussion reported they were made aware of the teacher programme by a parent attending the parent programme.

The Ministry outlined in the Implementation Review Day held in August 2018 with providers (see Appendix H) and in the 2019 planning that the links between the two programmes will be strengthened with increased forward setting of dates for 2019 programmes. This forward planning is part of the programme consolidation activities undertaken by the Ministry to enhance programme outcomes and impacts.

The Ministry is underway with these consolidation processes in place in response to feedback from providers on review days and their internal awareness of the three-month minimum lead in time required to enrol parents and teachers on the IYA programmes. A clear understanding about the required length of lead-in time was not established for the first cohort of IYA Teacher and Parent programmes and this has been part of the learning for the Ministry and providers.

Increased lead in time will assist providers to undertake the appropriate pre-programme screening and support arrangements, particularly for parents. This support is reported as essential to support high levels of programme attendance and programme fidelity, which are recognised as adding the most value from both IYA Parent and Teacher programmes.

3.4.3. Feasibility

The Ministry plays a role as funder of IYA programmes. IY programmes have clearly defined professional development requirements and accreditation processes for group leaders. These requirements and accreditation processes have been causing constraints during the initial IYA implementation. Accreditation in the basic IY programme is a requirement for IYA group leaders. While there are many IYP and IYT group leaders in New Zealand only a few are accredited as accreditation is costly. Another constraint is the low number of IY mentors available in New Zealand to provide coaching to support the workforce. The workforce implications are key considerations in the feasibility of this programme in New Zealand. The Ministry is working to overcome these constraints with implementation and workforce planning for 2019.

3.4.4. Learnings to inform the impact evaluation

The evaluation team found that communication with providers and group leaders, in particular, around the impact measurements could be improved. The Ministry has noted a more collaborative approach is preferred but was not possible for the first cohort due to the rushed initial implementation. A more systematic and collaborative approach is now being used by the Ministry programme and evaluation personnel incorporating a qualified clinical psychologist for specialist advice and inputs from this process evaluation. Stakeholders request a steering group is used to provide oversight and support on measuring progressing and impacts. This group needs to include a user perspective from on the ground representatives (such as providers).

The roles in the data collection and ownership of the data was not clear to the evaluation team. The Ministry acknowledges that the initial implementation of these tools and the measurement approach was variable – as they would expect whenever embedding any new aspect into an emerging business process. In terms of the data collection the evaluation team consider the current paper-based system and manual data entry into spreadsheets is not ideal as is resulted in incomplete data and is causing contractual issues for providers and the Ministry. This system was adopted from the basic IYP and IYT programmes and initial implementation of IYA programmes did not allow for the development of a better system. Spreadsheets are also used as triggering payment from the Ministry to providers and for managing teacher release contributions for IYAT participants.

However, with some stakeholders requesting and the evaluation team consider by providing a digital platform for IYA with a database for providers to enter directly in their waiting lists, attendance data, and output, outcome and impact data may improve transparency, segmentation data of participants, accuracy and timeliness on IYA programmes.

3.5. Retrospective Counterfactual – IYA programmes

The retrospective counterfactual technique is a recognised technique in evaluation.[28] In this context, the following questions are question is posed*: What would have happened without the IYA Teacher and Parent IYA programmes for participants?*

From the interviews and observation, the evaluation team found that the starting point for IYAT programmes was low in terms of autism specific knowledge levels. All teachers (N=14) reported very low confidence and had little to no prior knowledge on autism or of any relevant teaching strategies. Two teachers reported how they had struggled to engage an 18-months old child (they identified as on the autism spectrum) in class activities. However, after three sessions of attending the IYAT programme and using more explicit engagement activities the child started engaging not just with the teachers but also with other children. This is only one of many similar examples reported on by teachers, indicating that without IYAT programmes being offered there was likely to be no expansion of knowledge or improved practice in educational environments for children on the autism spectrum. Knowledge and resources gained though IYAT programmes were also being sought by other colleagues within early childhood settings. The IYAT programme is filling a recognised gap in educational training and practice for teaching children on the autism spectrum.

For caregivers, there were reported programmes such as Autism Plus, which is assisting parents increase knowledge about autism. However, caregivers considered the available courses did not cover practical strategies for social engagement and wellbeing of caregivers and their families. A positive aspect of IYAP was that programmes provided caregivers with a support group, which appears to continue after programme completion (e.g. through regular play dates or social networks such as Facebook). Caregivers reported they felt isolated and were lacking support from outside the family before coming on the IYAP programme. There are opportunities here for the Ministry to support wider communities of practice and follow on support to maintain networks and provide further links.

[28] Gertler, P., Martinez, S., Premand, P., Rawlings, L., & Vermeersch, C. (2011). *Impact Evaluation in Practice*. The World Bank

4. Evaluation Conclusions

The initial programme intent for IYA (see section 1.4.) was adjusted during the initial programme implementation. Adjustments had to be made in response to identified issues and stakeholder feedback as discussed in the findings of the present report (section 3.). Stakeholders unanimously reported perceiving the initial programme implementation was rushed. In the course of this process evaluation and through stakeholder engagement the original design of the IYA programme logic model was updated. The updated model is presented at the end of this section (section 4.5.).

Based on the updated model, the evaluation team concludes that, overall, the IYA programme is being implemented successfully for IYAP/IYAT programmes dimensions while dealing with workforce constraints. Stakeholders involved in the initial implementation (i.e. the Ministry, providers and group leaders) have worked consistently to get the initial implementation phase well underway. Reports from IYA programme participants (caregivers and teachers) on changes with strategies and confidence, and children on the autism spectrum indicate the programme is and will positively impact further on the lives of children on the autism spectrum. This is through more educated and skilled key people around them using consistent and relevant strategies. These observed changes are in line with findings of international studies outlined in the literature review. However, there are constraints that potentially affect the sustainability of the programmes and consolidation is required.

4.1. Demand, access, and reach

The following conclusions are made:

- **There is not enough information available to assess the real demand for IYA programmes.** Statistical data on children on the autism spectrum in New Zealand appears not to be not available. Information on the demand are based on stakeholders' experiences. From the first round of IYA programmes, differences between IYAP and IYAT became apparent. There had been challenges for some Parent Providers to fill their IYAP programme while others had enough families to choose from. Struggles of Parent Providers seem to be due to promotion and outreach issues and do not necessarily reflect on lack of demand. For IYAT, there seem to be consensus among stakeholders that there is high demand for the programme among teachers. There also do not seem to be alternatives to IYAT in New Zealand.
- **IYAT programmes are a professional development opportunity for ECE teachers**, which could be linked to the Professional Learning Development strategies in each region and educational organisations. There is an opportunity to have more IYAT programmes led in regional New Zealand. This would assist addressing the recognised knowledge and skills gap for educators and benefitting children on the autism spectrum more widely.
- **Access appears to be through existing networks rather than systematic channels**. There seems to be a knowledge gap in terms of awareness about the IYA programmes. Proactive families who are integrated in providers' networks seem to be more advantaged in accessing the programmes. While there is no consistent ethnicity data available, it appears there is an access gap for Pasifika families, in particular. There are some links to Health networks as some providers already have links established through their profession. These and other links can be extended and strengthened to support more inclusion and equity, i.e. Pasifika and iwi networks.
- **IYA is reaching families with children on the autism spectrum and teachers working with children on the autism spectrum**. All participants of IYA programmes were dealing with children on the autism spectrum. However, whether the programme is reaching the "right children" is a question that cannot be answered by the evaluation team. It is not clear whether there is a definition for what children are considered the "right" children. An explicit strategy statement on who exactly the target group is would help providers marketing the programme and selecting families to IYAP programmes.

4.2. Programme implementation and fidelity of the programme

The Ministry has been adaptive in its approach for the initial implementation of the IYA programmes in the New Zealand context. Initial stakeholder and provider discussions were undertaken prior to and during the implementation in 2018. Regular feedback and learning were sought from providers at the consult days, site visits and regular discussions to support implementation. The evaluation team considers this adaptive approach and the responsiveness by the Ministry has contributed to the increased appropriateness and programme fidelity of IYA programmes in the diverse regional and cultural settings in New Zealand context. This has been a key lesson learned. Further, the evaluation team also found having an evaluation alongside the implementation process is good practice and allows for responding to emerging issues and stakeholder feedback in a timely manner. The Ministry IYA programme manager reported to find this practice useful during implementation and delivery.

Conclusions from the programme implementation (incl. programme fidelity) are:

- **IYA programmes are still developing** and the evaluation team considers a programme maturity level based on the Portfolio, Programme and Project Management Maturity Model (P3M3, of the UK Office of Government Commerce OGC) of somewhere between 2 (repeatable process) and 3 (defined process).
- **There is strong evidence that IYA programmes increase caregivers and teachers' confidence and skills.**
- **Fidelity of the programmes was evident.** Group leaders followed the programme. The consult day is vital for group leaders to have questions answered and get confirmation on their approach, which they do not receive otherwise.
- **More interaction between IYAP and IYAT is needed and opportunities for group leaders to meet, share knowledge and experiences, and develop best practice collaboration.** Similar to the consult day, further gatherings between group leaders were suggested to consolidate approaches in IYA programme delivery and for tailoring of programmes in the New Zealand context.
- **Challenges in the first cohort for IYAP.** There was higher and more stable attendance in IYAT programmes whereas attendance in IYAP programmes was more sporadic with a number of families dropping out of the programme. While flexibility and responsiveness to caregivers needs seem contributing factors to the success and fidelity of the programme, the key factor appears to be the degree to which a group is able to bond. The closer the bond between group leaders and participants, and participants with each other, the higher the attendance rate and the lower the drop-out rate. Group leaders play a key role here.
- **There is more pressure on caregivers to attend IYAP.** IYAT is integrated in teachers work schedule and supported by ECE centres and schools. For caregivers, on the other hand, participation in IYAP means an additional time commitment. Challenges for families with children on the autism spectrum are enormous, which affects their ability to commit to a 14-week programme. A key variable seems to be resources available, which impacts on better resourced families who are more likely able to commit to the time required by the programme. There is a risk of missing out families with lower socioeconomic status and hence particularly vulnerable children, which requires regional monitoring and manageable support.
- **Varying pre-existing knowledge levels and expectations of caregivers in IYAP programmes.** IYAP group leaders found groups of caregivers with consistently high knowledge levels or consistently low knowledge levels or mixed knowledge levels. Each scenario presented different challenges for group leaders. Well informed groups came with high expectations and specific interests to the programme, which group leaders had to balance against the programme's content and sequence without demotivating caregivers. Groups without any previous knowledge on IY or ASD required group leaders to spend time on building a basic knowledge base before getting into the actual IYAP content. A group

with mixed experiences challenged group leaders in finding the right pace that was not too fast for less informed caregivers and not too slow for more informed ones.

- **Building on from knowledge gained in basic IY programmes.** Many caregivers and teachers had attended the basic IYP and IYT programmes and were familiar with general IY concepts. Both caregivers and teachers reportedly found it useful learning basic concepts first and building specialised knowledge from there.
- **Alignment of IYAP and IYAT programme should still be a goal**. The value in providing both IYAP and IYAT programmes in parallel was seen by parent participant, teacher participant and providers alike. Having two entry points into the programme (i.e. through parents and then referring teachers, and teachers who then pass on details about the IYA programmes to parents) supports the IYA programme intent.
- **Consistency in using strategies is important.** The importance of having everybody who is regularity interacting with the child on the autism spectrum "on the same page" (i.e. using same strategies and language) was realised and stressed by both caregivers and teachers as well as group leaders. Otherwise, frustrations arise to lose momentum with strategies having limited effect on the child.
- **There were reported changes in children's behaviour.** Both caregivers and teachers noted observable changes in children while they participated in IYA programmes and used strategies learned there. These changes may have occurred as a result of the programme. However, some of the changes may be also linked to child's development stages. Therefore, the evaluation team consider care in drawing any causal relationships between the participation of the caregiver in IYAP and behavioural changes in the child. This can be looked into further over the impact evaluation part of the IYA evaluation.
- **There is potential for extended (but not measured) impact of IYAP** given that some families have more than one child on the autism spectrum (including older children who are outside IYA age-range). If caregivers are more engaged and empowered to manage challenging situations with their children, all their children benefit.
- **National coordination of IYAP and IYAT is still required while providers are building their networks.** Building networks – both on regional and national level – is important for sharing knowledge and building an IYA community, which is beneficial for both teachers and parents – and makes it easier for families, in particular, to move around in New Zealand with linked services and networks.

4.3. Feasibility

There are constraints over training IY and IYA group leaders and being accredited. The pipeline of both needs to be considered as IY experience is a prerequisite for IYA group leadership.

- **The fragile workforce is a sustainability risk.** A key lesson learned was the importance of workforce capacity planning to ensure sufficient coverage and availability of trained group leaders across the regions. The recruitment and training of group leaders and mentors group leaders is vital for the sustainability of IYA programmes in New Zealand. Group leaders play a crucial role for the success of IYA programmes, and they require both considerable understanding and knowledge of the programme's content as well as the soft skills to foster group bonding. In some regions, there appears to be no back-up if any of the current IYA group leaders falls out. Lack of workforce was one of the reasons why IYAP and IYAT coverage in all regions could not be established in the first cohort.
- **There are constraints with regard to expanding workforce.** Because there are currently no accredited IYA trainers in New Zealand, all trainings and consultations have to be done by accredited IYA trainers from overseas. Scheduling more training and consultation days depends on trainers' availability, which is limited. There are also significant cost implications with this approach.

4.4. Learnings to inform the impact evaluation

The following conclusions are made:

- **Selection of assessments had to be adjusted.** Three measurement tools have been either withdrawn or replaced during implementation because they were not considered ethical based on provider feedback. Selecting appropriate assessments requires autism-specific knowledge and psychological expertise. The need for technical advice on IYA appropriate assessments has been acknowledged by the Ministry.
- **There is considerable contextual knowledge and expertise with providers and group leaders.** It was predominately group leaders who provided feedback on assessments that were not appropriate to use in an IYA context, to which the Ministry responded accordingly.
- **Lack of understanding of the purpose or value of assessments among group leaders.** It is part of group leaders' responsibility to ensure IYA participants are completing evaluation forms and forms are returned to the Ministry. As such, group leaders play a key role in the data collection. However, many group leaders reported to not understand the use of the measurement tools, which may affect the thoroughness in the data collection. A more collaborative approach where group leaders are consulted and/or included in the selection of assessments may improve both the data collection and quality of data collected.
- **Collection of administrative data:** During the initial implementation, data was collected in paper form and then manually entered into excel spreadsheet. This process was adapted from the basic IY programme as most providers were familiar with it. Due to the rushed implementation there was also no time to develop an alternative system. However, this process affected quality and time of data entry. Providers and the Ministry both reported that an electronic system would enhance the data collection. In addition, using a cloud-based system may improve accountability of administrative data and follow up processes for impact measurement.
- **Incomplete administrative data.** The evaluation team found the administrative data on socio-demographic profiles, locations and ethnicity of families with children on the autism spectrum was either not available or incomplete for analysis.

4.5. Updated IYA programme model and assumptions

Based on the process evaluation findings, the IYA programme model was updated (see Figure 9, over page). The updated model now includes two entry pathways into IYA programmes – through teachers and parents.

The following key assumptions underpinning the updated model were also noted.

Incredible Years Autism – Parents programme:

- Sufficient/enough parents/child who can commit to 14-weeks programme.
- Trained group leaders (have had IYA experience).
- Mentor/coach per group leader (2 sessions).
- Make up sessions outside scheduled time (3 max).
- Links in networks cover region to support inclusion equity.

Incredible Years Autism – Teachers programme:

- Enough trained group leaders.
- Sufficient teachers keen (6 sessions).
- Links are active between IYAP and IYAT providers in each region (transparency).
- Teachers identify children/approach ministry of education regional.
- Sufficient coordination between regions and providers (national).

Prerequisites and requirements – includes prior knowledge and experience for parents and teachers before entering programmes.

- Child 2-5 years on spectrum.
- 1-2 caregivers/parents per child.
- Support can be provided (travel, child care).
- Sufficient number in courses.
- Can attend 11/14 sessions at location (retention).
- Three make ups to follow up (completion).

Incredible Years Autism Model and Theories of Change

Updated September 2018 (under development)

Key: Green - focus for process evaluation

MINISTRY OF EDUCATION
TE TĀHUHU O TE MĀTAURANGA

The Incredible Years® Parents, teachers, and children training series

Theories of Change	Inputs	Outputs	Short term Outcomes	Longer term	Impacts
Incredible Years Autism Parents Programme	• Parents enrolled (ethnicity, region) • Children (age, status, multiple children) • Trained IYAP group leaders (two per programme) • Links with providers and networks (health, education) utilised	• Programme session completed (14 sessions of 2 1/2hr) • Group leaders undertake tailored facilitation with parents • Group leaders receive mentoring/coaching • Parents group provide support network	• Parents learn strategies • Parent practice strategies • Parents share strategies with other whanau and community members • Parents discuss strategies and support for children with teachers and other professionals	• Improved understanding of autism and how to manage environments • Improved parent mental health (confidence, well being) • Increased engagement between parents and children • Increased parental knowledge and skills in supporting children and their environments	• Improved social interaction, engagement and participation of child (with peers, home, outside, school) • Improved parents and teacher practices to support children and whanau • Improved behaviour, emotional regulation and communication in children with autism
Incredible Years Autism Teachers Programme	• Trained IYAT Group leaders • Teachers with children with autism identified • Teachers enrolled	• Teacher sessions facilitated • Group leaders tailor sessions relevant to range of profiles of children • Teachers understand strategies through IYAT programme	• Teachers learn strategies • Teachers increase their confidence and skills engaging and teaching children with autism • Teachers practice strategies • Teachers share strategies with parents, whanau and community members • Parents discuss strategies and support for children with teachers and other professionals	• Increased engagement between teacher and child • Increased inclusion and participation of child in class environment • Increased communication between school and home to support child • Other educators in school settings learn and apply IYAT strategies from teachers collaborating	• Expanded community of practice between professionals on inclusion and supporting children on spectrum and with language delay
Workforce Ministry of Education (National and regional) Providers	• Group leaders (IYAT and IYAP) and mentors trained • Mentors and coaching receive oversight and support	• Expanded pool of Group leaders on IYAP and IYAT available • Mentoring and coaching undertaken for all Group leaders in New Zealand	• IY and IYA programmes in initial regions consolidated • Improved enrolment and completion numbers (IYA) • Increased links between IYAT and IYAP programmes with multiple entry points • IYAP and IYAT programmes expanded to other regions	• Group leaders are supported to increase their qualifications with IY and IYA • Increased sharing of good practice and learning between Group leaders on both IYAP and IYAT • Increased number of children with both parents and teachers having increased knowledge and application of strategies • Improved environments for children on ASD spectrum and language delay	• Sustained outcomes (social, behavioural, emotional) for parents and children • Sustained outcomes for teachers and the educational settings
	• The Ministry provides coordination (nationally and regionally) • Communication and information on IYAP and IYAT is provided programmes to education and health networks • Providers support group leaders and provide overview	• Increased linking of networks (health, education) to identify high priority children and teachers • Providers and government health education and health services actively collaborate to enrol parents and teachers • Expanded enrolments and pipeline • Flexible support is provided to parents and teachers to attend programmes	• Increased use of key stakeholders in evolving measurement approach and tools. • Measurement approach and tools improved and streamlined • Improved data collection undertaken • Enhanced coordination within regions and with national Ministry	• Expanded interaction with participants from providers/ Ministry of Education to monitor outcomes • Expand learning in homes, whānau, educational and community settings from use of communities of practice	• Sustainable IYAT and IYAP programmes meeting the needs parents, teachers of children with autism • Increased inclusion and participation of children with Autism contributed to by the Ministry of Education and providers

Figure 9:Updated Incredible Years Autism Programme model

5. Recommendations

The following recommendations for consideration are documented by the evaluation team.

5.1. Demand, access and reach

1. Consider for regional Ministry offices to take a greater role in bringing together stakeholders from both Education and Health in support of a cross-sector approach with the aim to systematically identify and record identified children on the autism spectrum (including those children eligible for IYA) and their families.
2. Advise providers to utilise more inclusive systematic approach for reaching families and teachers to ensure equity and inclusion.

5.2. Programme implementation and fidelity

3. Expand IYAT programmes to provide increased teacher professional development opportunities and aligning with IYAP programmes in regions.
4. Consider examining further whether having half- or full-day sessions is an appropriate delivery modality option for IYAT programme fidelity.
5. Link teacher professional development to professional learning development (PLD) spiral action research focus to embed and expand learning within education settings.
6. Keep national oversight with Ministry coordinating IYA programmes to allow regions more time to establish networks and consider transitioning coordination to regions from late 2019.
7. Continue collaborating with providers (including IYA group leaders) and consider they have a more active role in the governance of IYA (e.g. through integrating them in the development of common IYA terms of reference and representatives on the Steering Group). (This may also support Recommendation 7. in view of the transitioning to coordination within regions.)
8. Consider the usefulness of having caregivers to complete basic IYP programme before enrolling onto IYAP to ensure participants have similar knowledge levels or, alternatively, the feasibility of providing a crash course on IY basic concepts prior to IYA programme start for participants without IY experiences.
9. Consider further tailoring of IYA programmes to New Zealand context, including New Zealand vignettes – while increasing vignettes with non-verbal children – and development of IYA specific resource book. (However, developing an IYA specific resource book raises copyright issues that would need to be addressed with the American programme developer.)
10. Providers need to continue building networks, including among themselves and regional offices and health services.

5.3. Feasibility

11. Consider how to ensure sufficient group leaders are trained in all regions, and are supported to become accredited IYA group leaders, peer coaches and mentors. (Workforce sustainability and value for money are two areas to be looked at in the course of the impact evaluation.)

5.4. Impact evaluation

12. Consider streamlining data collection for 2019; consolidating administrative (including socio-demographic information), waiting lists, reporting and impact data (ideally) in digital form in support of an improved and systematic database for IYA.

13. Consider including user representatives (e.g. provider) to the Programme Steering Group overseeing and supporting the identification and confirmation of impact measuring approach and tools in order to make considered decision of what is useful and feasible.
14. Ensure purpose of assessments is clearly communicated to group leaders so they know what to consider and can answer questions when collecting data.

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Appendix A: Assessment Tools

Pre-enrolment questionnaire

This form should be completed by individuals registering an interest in the programme, and will be used by the Ministry of Education for reporting statistics for the IY programme and assessing demand for IYAT/IYAP service. Any analysis will be about groups rather than any one individual, and your answers will be aggregated and kept anonymous.

1. Today's date: / / *(dd/mm/yyyy)*

2. What is the main reason the participant is accessing the programme?__

To access support for myself or family \ I have to \ There is nothing else available to me

Other:_____

3. How did the participant hear about the programme? (please circle):

Ministry of Education Early Intervention team \ Health-care professional \ ASD Coordinator \ CDS \ Kindergarten

Other:_____

4. City currently residing in: _____

5. Ethnicity (please circle all that apply):

European/Pākehā \ Māori \ Pasifika \ MELAA \ Asian \ Other

6. Relationship to the child (please circle):

Parent | Relative | Teacher | Other

7. Date of planned enrolment (if known): _____

Parents or relatives (Questions 8-10)

8. Has your child been diagnosed with autism?

Yes | No

9. If "No" (Question 8): Has your child going through the autism screening process now?

Yes | No

10. How old is your child? ___ *years old*

Teachers (Questions 11-12)

11. Have you had any other professional development to support children with autism?

Yes | No

12. Have you been invited to the IYAT programme to support a specific child?

Yes | No

Page Break

Privacy statement

We are collecting information for the purposes of reporting statistics for the Incredible Years Autism programme and assessing demand for IYAT/IYAP service as part of the formal evaluation.

Any analysis will be about groups of individuals rather than any one individual and your answers will remain anonymous. We will publish the findings of our evaluation, but the published findings will not identify any individual who participated in the evaluation process.

We will not disclose any personal information collected to third parties unless we are required to do so by law.

The collection, storage and use of personal information will be in accordance with the Privacy Act 1993. Under that Act, you have the right to access, and request correction, of any personal information that we hold about you or your child.

QUESTIONS FOR IYP INTERVIEWS

How did you hear about the course?

How old are your children? What is the age of the child you want specific support for?

Is this child in your full-time care? (If not, how often do you have him/her with you?)

The challenges and successes you are having?

This course is going to be on Mondays from 10.00am. – 12.30pm. Will this time suit you?

This course is an adult learning zone, have you got some plans/ideas for your children's childcare on a Monday morning?

Yes ☐ **No** ☐

(If applicable ask the relevant childcare questions.)

A requirement of this course is to attend all 14 sessions. What might make it difficult for you to participate and how can we support you to overcome these barriers?

Do you have your partner's support to attend the course? How well do you work as a team in your parenting?

How comfortable are you in groups? What will help you to feel comfortable? *(Small group)*

There will be reading and writing within the course: How comfortable do you feel about that? What help would you need?

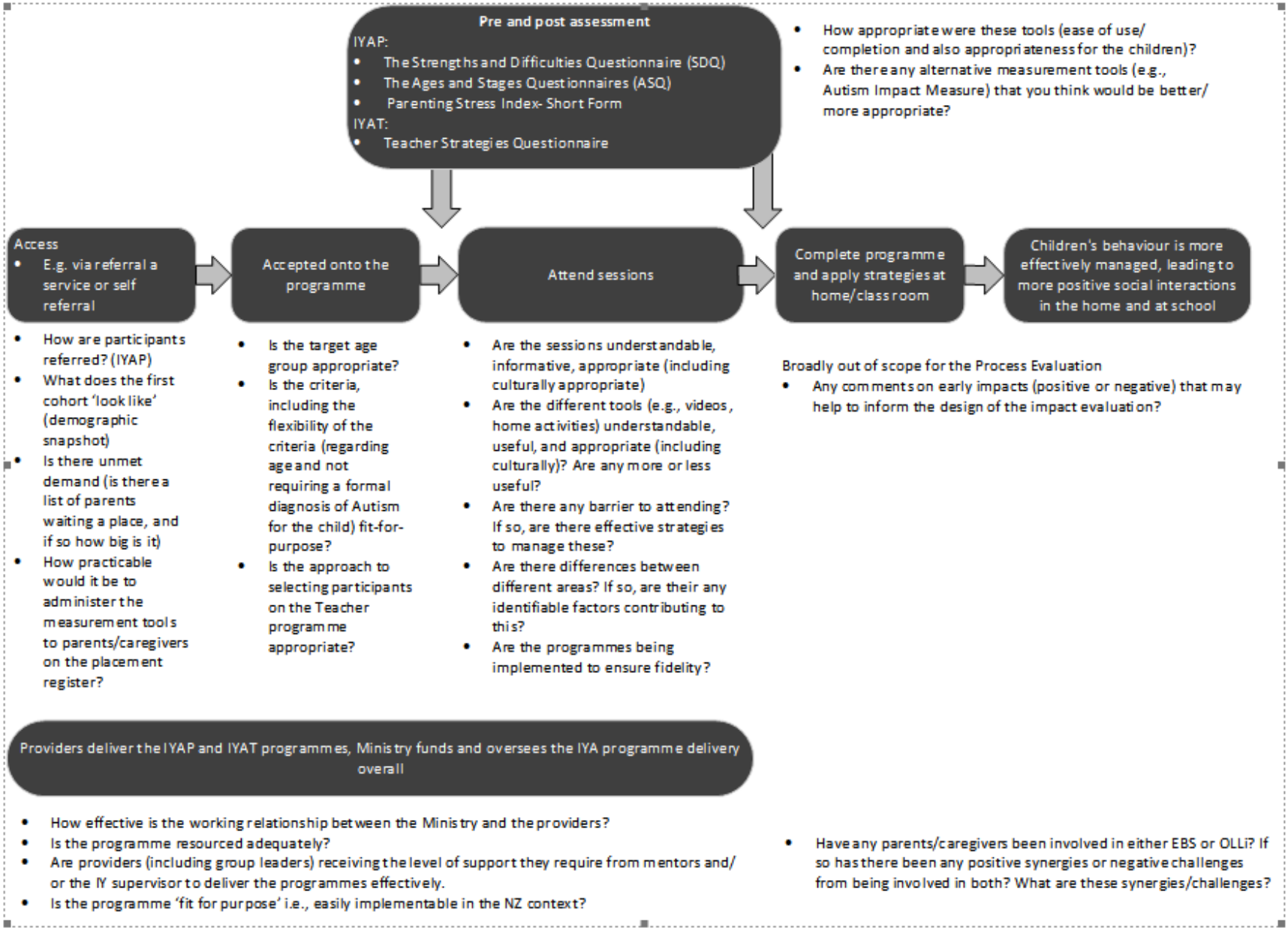
Would you require help with transport: **Yes/No**

We provide morning tea, is there any food you cannot eat?

Do you have any allergies we need to be aware of?

We aim to be respectful and inclusive of everyone, are there any cultural needs we need to be aware of for you to feel comfortable in a group setting?

Do you have any questions?


Pre and post assessment
IYAP:
The Strengths and Difficulties Questionnaire (SDQ)
The Ages and Stages Questionnaires (ASQ)
Parenting Stress Index- Short Form
IYAT:
Teacher Strategies Questionnaire
How appropriate were these tools (ease of use/ completion and also appropriateness for the children)?
Are there any alternative measurement tools (e.g., Autism Impact Measure) that you think would be better/ more appropriate?
Access
E.g. via referral a service or self referral
Accepted onto the programme
Attend sessions
Complete programme and apply strategies at home/classroom
Children's behaviour is more effectively managed, leading to more positive social interactions in the home and at school
How are participants referred? (IYAP)
What does the first cohort 'look like' (demographic snapshot)
Is there unmet demand (is there a list of parents waiting a place, and if so how big is it)
How practicable would it be to administer the measurement tools to parents/caregivers on the placement register?
Is the target age group appropriate?
Is the criteria, including the flexibility of the criteria (regarding age and not requiring a formal diagnosis of Autism for the child) fit-for-purpose?
Is the approach to selecting participants on the Teacher programme appropriate?
Are the sessions understandable, informative, appropriate (including culturally appropriate)
Are the different tools (e.g., videos, home activities) understandable, useful, and appropriate (including culturally)? Are any more or less useful?
Are there any barrier to attending? If so, are there effective strategies to manage these?
Are there differences between different areas? If so, are their any identifiable factors contributing to this?
Are the programmes being implemented to ensure fidelity?
Broadly out of scope for the Process Evaluation
Any comments on early impacts (positive or negative) that may help to inform the design of the impact evaluation?
Providers deliver the IYAP and IYAT programmes, Ministry funds and oversees the IYA programme delivery overall
How effective is the working relationship between the Ministry and the providers?
Is the programme resourced adequately?
Are providers (including group leaders) receiving the level of support they require from mentors and/ or the IY supervisor to deliver the programmes effectively.
Is the programme 'fit for purpose' i.e., easily implementable in the NZ context?
Have any parents/caregivers been involved in either EBS or OLLi? If so has there been any positive synergies or negative challenges from being involved in both? What are these synergies/challenges?

Instrument Title:	Autism Parenting Stress Index (APSI)
Instrument Author:	Silva, L. M. T., & Schalock, M.
Cite instrument as:	Silva, L. M. T., & Schalock, M. . (2012) . Autism Parenting Stress Index (APSI) . Measurement Instrument Database for the Social Science. Retrieved from www.midss.ie

Date: _____ Name of child: _____ Person completing checklist:_____

Autism Parenting Stress Index

	Stress Ratings				
Please rate the following aspects of your child's health according to how much stress it causes you and/or your family by placing an X in the box that best describes your situation.	**Not stressful**	**Sometimes creates stress**	**Often creates stress**	**Very stressful on a daily basis**	**So stressful sometimes we feel we can't cope**
Your child's social development	0	1	2	3	5
Your child's ability to communicate	0	1	2	3	5
Tantrums/meltdowns	0	1	2	3	5
Aggressive behavior (siblings, peers)	0	1	2	3	5
Self-injurious behavior	0	1	2	3	5
Difficulty making transitions from one activity to another	0	1	2	3	5
Sleep problems	0	1	2	3	5
Your child's diet	0	1	2	3	5
Bowel problems (diarrhea, constipation)	0	1	2	3	5
Potty training	0	1	2	3	5
Not feeling close to your child	0	1	2	3	5
Concern for the future of your child being accepted by others	0	1	2	3	5
Concern for the future of your child living independently	0	1	2	3	5
	Subtotal				
				Total	

Parenting Sense of Competence Scale

(Gibaud-Wallston & Wandersman, 1978)

Please rate the extent to which you agree or disagree with each of the following statements.

Strongly Disagree	Somewhat Disagree	Disagree	Agree	Somewhat Agree	Strongly Agree
1	2	3	4	5	6

1. The problems of taking care of a child are easy to solve once you know how your actions affect your child, an understanding I have acquired. 1 2 3 4 5 6
2. Even though being a parent could be rewarding, I am frustrated now while my child is at his / her present age. 1 2 3 4 5 6
3. I go to bed the same way I wake up in the morning, feeling I have not accomplished a whole lot. 1 2 3 4 5 6
4. I do not know why it is, but sometimes when I'm supposed to be in control, I feel more like the one being manipulated. 1 2 3 4 5 6
5. My mother was better prepared to be a good mother than I am. 1 2 3 4 5 6
6. I would make a fine model for a new mother to follow in order to learn what she would need to know in order to be a good parent. 1 2 3 4 5 6
7. Being a parent is manageable, and any problems are easily solved. 1 2 3 4 5 6
8. A difficult problem in being a parent is not knowing whether you're doing a good job or a bad one. 1 2 3 4 5 6
9. Sometimes I feel like I'm not getting anything done. 1 2 3 4 5
10. I meet by own personal expectations for expertise in caring for my child. 1 2 3 4 5 6
11. If anyone can find the answer to what is troubling my child, I am the one. 1 2 3 4 5 6
12. My talents and interests are in other areas, not being a parent. 1 2 3 4 5 6
13. Considering how long I've been a mother, I feel thoroughly familiar with this role. 1 2 3 4 5 6
14. If being a mother of a child were only more interesting, I would be motivated to do a better job as a parent. 1 2 3 4 5 6
15. I honestly believe I have all the skills necessary to be a good mother to my child. 1 2 3 4 5 6
16. Being a parent makes me tense and anxious. 1 2 3 4 5 6
17. Being a good mother is a reward in itself. 1 2 3 4 5 6

Parent Sense of Competency Scale (PSOC)

Scoring Instructions

The Parenting Sense of Competency Scale (PSOC) was developed by Gibaud-Wallston as part of her PhD dissertation and presented at the American Psychological Association by Gibaud-Wallston and Wandersman in 1978. The PSOC is a 17 item scale, with 2 subscales. Each item is rated on a 6 point Likert scale anchored by 1 = "Strongly Disagree" and 6 = "Strongly Agree". Nine (9) items (#s 2, 3, 4, 5, 8, 9, 12, 14, and 16) on the PSOC are reverse coded.

Nine items on the PSOC are reverse coded, this is important for accurate scoring. Reverse coded means that a high score on the individual item is not indicative of having a sense of competency; essentially, the item is worded negatively.

Scoring Instructions:

To aid scoring, the score / number for each item can be written in the in the right hand margin of the questionnaire once completed.

For items 1, 6, 7, 10, 11, 13, 15, and 17 simply write the number the participant indicated as their choice.

Reverse coding: For items 2, 3, 4, 5, 8, 9, 12, 14, and 16 substitute the following numbers and write in right hand margin for totaling:

Answer	Score
6	1
5	2
4	3
3	4
2	5
1	6

Total all numbers you have written in the right hand margin; this is participants PSOC score.

A higher score indicates a higher parenting sense of competency. There are no average scores or 'cut-off's' for this tool.

Teacher self-efficacy and practice scales

Within this document is a collection of measures that will likely be relevant to measuring change over time. The collection should be completed at the beginning and at the end of the IYAT programme. You only have to include your name once, on the first instrument, as long as you complete this as a pack.

The Incredible Years®
Teacher and Child Care Provider
Self-Reflection Inventory

Emotion Coaching & self-Regulation

Date: _____ Name: _____

Teachers learn extensively from self-reflection regarding their classroom management and the teaching strategies they are using that are working or not working. From these reflections teachers determine personal goals for making changes in their approaches to bring about the most positive learning climate they can. Use this Inventory to think about your strengths and limitations and determine your goals.

1 – Never 3 – Occasionally 5 - Consistently

Social Coaching	
1. I use emotion coaching language with all the children when I interact with them.	**1 2 3 4 5**
2. When I coach a child's uncomfortable emotions (e.g., anger, frustration, fears) I qualify the negative emotion with recognition of the positive coping or calming behavior the child is using (e.g., continues to try, keeps hands to self, works hard).	**1 2 3 4 5**
3. I give more attention to and name more positive emotions in children than uncomfortable emotions.	**1 2 3 4 5**
4. I model my own positive emotions for how I feel during the day, including how I calm down when frustrated.	**1 2 3 4 5**
5. I provide physical affection to help children calm down and self-regulate.	**1 2 3 4 5**
6. I teach preschool children self-regulation techniques such as breathing, counting, positive visualization methods and positive self-talk.	**1 2 3 4 5**
7. I teach preschool children the calm down thermometer and help them practice this when they are angry, sad, fearful or lonely.	**1 2 3 4 5**
8. I use puppets with children to model emotion language, help children understand the perspective of another and to set up practices of emotion sharing.	**1 2 3 4 5**
9. I teach children Tiny Turtle's anger management steps.	**1 2 3 4 5**

10. I read books to children in interactive ways to promote modeling and sharing of different feelings.	**1 2 3 4 5**
11. For children with developmental or language delays I use visual pictures to enhance their ability to tell someone how they are feeling.	**1 2 3 4 5**
12. I use visual feeling prompts to encourage communication of different feelings.	**1 2 3 4 5**
13. I identify "positive opposite" emotions to the negative emotions to pay attention to (e.g., for angry child I focus on times when s/he is calm, patient).	**1 2 3 4 5**
14. I praise children for sharing their feelings with other children or with me.	**1 2 3 4 5**
15. I work with parents so they know how to use emotion coaching at home with their children to enhance their emotional vocabulary.	**1 2 3 4 5**
16. I work with parents to teach them how to use emotional self-regulation strategies at home with their children. (E.g., breathing, counting, use of Calm Down Thermometer.)	**1 2 3 4 5**

The Incredible Years®
Teacher and Child Care Provider Self-Reflection Inventory

Positive Behavior Management (Part One)

Date: _____ Teacher Name: _____

Teachers learn extensively from self-reflection regarding their classroom management and the teaching strategies they are using that are working or not working. From these reflections teachers determine personal goals for making changes in their approaches to bring about the most positive learning climate they can. Use this Inventory to think about your strengths and limitations and determine your goals.

1 – Never 3 – Occasionally 5 - Consistently

Setting Limits & Rules	
1. Rules in my classroom are stated positively and clearly and are posted on the wall. I review and practice them as needed.	**1 2 3 4 5**
2. I use nonverbal cues and signals to communicate rules as well as words (e.g., pictures of rules such as raise quiet hands, quiet voice, five on the floor, ears open).	**1 2 3 4 5**
3. I have taught children the "show me five" signal and use it.	**1 2 3 4 5**
4. I state requests or give directions to children respectively using brief descriptions of positive behaviors desired (e.g., "please keep your hands to your own body").	**1 2 3 4 5**
5. I use "when-then" or "first-then" commands.	**1 2 3 4 5**
6. I give children choices and redirections when possible.	**1 2 3 4 5**
7. I avoid negative commands, corrections, demands, and yelling at children. Instead, I use "do" and "start" positive commands.	**1 2 3 4 5**
8. I get children's attention before giving instructions (e.g., eye contact).	**1 2 3 4 5**
9. I redirect disengaged children by calling out their name with a question, standing next to them, making up interesting games, and nonverbal signals.	**1 2 3 4 5**
10. I give frequent attention, praise and social/emotional coaching to children who are engaged and compliant following my directions.	**1 2 3 4 5**
11. I communicate with parents about classroom rules and help parents know how they can support similar rules at home. (E.g., walking feet, inside voice, listening ears, hands to self, etc.)	**1 2 3 4 5**

Differential Attention, Ignoring and Redirecting	
1. I give more attention, coaching and praise to positive behaviors than to inappropriate child behaviors.	**1 2 3 4 5**
2. I have identified negative behaviors in children I want to decrease and the "positive opposite" of each negative behavior that I will praise, reward and coach.	**1 2 3 4 5**
3. I have identified those behaviors I can ignore while keeping the children safe.	**1 2 3 4 5**
4. I have worked hard teaching children in circle time to ignore their peers when they are laughed at, poked or made fun of.	**1 2 3 4 5**
5. My ignoring is strategically planned and is done by avoiding eye contact, verbal comments, and physical touch and by keeping a neutral affect.	**1 2 3 4 5**
6. I use proximal praise strategically (e.g., praise nearby child for behavior I want to encourage) while ignoring the child who is inappropriate.	**1 2 3 4 5**
7. I use positive self-talk as an approach to staying calm when children misbehave. (write example)	**1 2 3 4 5**
8. I start with using the least intrusive discipline strategy when children misbehave. I review my hierarchy of discipline.	**1 2 3 4 5**
9. When a child is behaving appropriately again and calmed down after losing control, I immediately return my attention and encouragement to the child.	**1 2 3 4 5**
10. I have developed behavior plans that include identifying those inappropriate behaviors to ignore and the positive opposite behaviors to praise and reward.	**1 2 3 4 5**
11. I help children learn how to self-regulate through specific techniques (e.g., deep breathing, positive self-talk, positive imagery, anger or relaxation thermometer, Tiny Turtle puppet).	**1 2 3 4 5**
12. I use "positive forecasting" statements to predict a child's success in earning his prize.	**1 2 3 4 5**
13. I work hard to redirect children to other activities when they are frustrated.	**1 2 3 4 5**

14. I have shared the classroom or home child care discipline hierarchy with the parents of the children.	1 2 3 4 5
15. I work with parents so they know behaviors to ignore and those to praise or reward.	1 2 3 4 5
16. I call parents to share successes their children are having learning new behaviors.	1 2 3 4 5
17. I teach parents some of the self-regulation strategies I am using with their children so they can us them at home. (E.g., Tiny Turtle's secret, Calm Down Thermometer, breathing strategies)	1 2 3 4 5
Future Goals Regarding Ignoring and Redirecting Strategies	

The Incredible Years® Teacher and Child Care Provider Self-Reflection Inventory

Positive Behavior Management (Part Two – Preschool)

Date:_____ Teacher Name: _____

Teachers learn extensively from self-reflection regarding their classroom management and the teaching strategies they are using that are working or not working. From these reflections teachers determine personal goals for making changes in their approaches to bring about the most positive learning climate they can. Use this Inventory to think about your strengths and limitations and determine your goals.

1 – Not Helpful 3 – Neutral 5 – Very Helpful

Time Out to Calm Down and Other Consequences	
1. I have taught children what Time Out is used for and we have practiced how to go to Time Out to calm down.	**1 2 3 4 5**
2. I only use Time Out for aggressive or destructive behavior.	**1 2 3 4 5**
3. When I use Time Out I am calm, clear, patient, give very little attention to child in Time Out and set a timer until 2 minutes of calm is achieved.	**1 2 3 4 5**
4. When the child is calm and Time Out is over, I immediately re-engage them with another activity.	**1 2 3 4 5**
5. I assist other children to learn how to ignore a child in Time Out and to give him or her privacy to calm down.	**1 2 3 4 5**
6. I have identified a safe place for Time Out to calm down that is away from other children and relatively boring.	**1 2 3 4 5**
7. I help children to practice the words they will use to help themselves calm down in Time Out. (e.g., "I can do it, I can calm down")	**1 2 3 4 5**
8. I use emotion coaching to focus on times when children are staying calm, trying again, and being patient even though it is frustrating.	**1 2 3 4 5**
9. After Time Out is over I re-engage the child by coaching and giving praise and attention for positive behavior. I do not remind the child of why the child was in Time Out or force an apology.	**1 2 3 4 5**
10. I understand that the most effective consequences are immediate, quick, and followed with a new learning trial as soon as possible to help children be successful.	**1 2 3 4 5**

11. I am firm, respectful and control my negative emotions when engaged in a discipline strategy.	**1 2 3 4 5**
12. I have explained the hierarchy of discipline plan to parents of children in my setting.	**1 2 3 4 5**
13. I have developed behavior plans, which include behaviors to coach, praise and reward and those to ignore or use a consequence. These are reviewed regularly by staff and parents.	**1 2 3 4 5**
14. I have a few logical consequences that I use appropriately. (describe here)	**1 2 3 4 5**
15. I send home only positive notes and if I want to discuss a behavior issue I set up an appointment time to discuss in person with the parent.	**1 2 3 4 5**
16. I use the Teacher-to-Parent Communication Home Activities letter to help parents understand how they can help their children learn some self-calming strategies.	**1 2 3 4 5**
Future Goals Regarding My Discipline Strategies	

Teachers' Sense of Efficacy Scale[1] (short form)

	Teacher Beliefs	How much can you do?								
	Directions: This questionnaire is designed to help us gain a better understanding of the kinds of things that create difficulties for teachers in their school activities. Please indicate your opinion about each of the statements below. Your answers are confidential.	Nothing		Very Little		Some Influence		Quite A Bit		A Great Deal
1.	How much can you do to control disruptive behavior in the classroom?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2.	How much can you do to motivate students who show low interest in school work?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
3.	How much can you do to get students to believe they can do well in school work?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
4.	How much can you do to help your students value learning?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
5.	To what extent can you craft good questions for your students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
6.	How much can you do to get children to follow classroom rules?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
7.	How much can you do to calm a student who is disruptive or noisy?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
8.	How well can you establish a classroom management system with each group of students?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
9.	How much can you use a variety of assessment strategies?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
10.	To what extent can you provide an alternative explanation or example when students are confused?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
11.	How much can you assist families in helping their children do well in school?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
12.	How well can you implement alternative strategies in your classroom?	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

Appendix B: Information Sheet and Informed Consent

Information Sheet – Incredible Years Autism Process Evaluation

This information sheet provides details about the purpose and scope of the evaluation, and important information about how your feedback and comments provided to the evaluator/evaluation team will be gathered and used, if you agree to participate in the evaluation.

What is the background and purpose of the Evaluation?

The Incredible Years Autism programme

Incredible Years Autism (IYA) is one of three Ministry social investment initiatives that are focused on delivering early, targeted support for children aged 0-8. Part of the new learning support approach, they deliver support to more children, at younger ages than we have been able to in the past.

As a result of these initiatives, we expect to see children with improved overall learning, social competence and wellbeing. We also expect to see Kaiako with not only improved capability, but also greater confidence in their skills. Parents, caregivers and whānau will also feel more supported and confident

Incredible Years Autism Parent is a 2.5-hour, 14 session programme for parents and caregivers delivered weekly. The Teacher programme is a separate 2.5-hour, six session programme for Kaiako usually delivered fortnightly.

Children on the autism spectrum are more likely than their peers to have ongoing behaviour issues and their parents are more likely to experience high levels of stress and mental health issues.

There is strong evidence to suggest that early intervention has the greatest potential to improve future outcomes for children on the autism spectrum and their families.

By supporting the skills and confidence of the key adults in the lives of children on the autism spectrum, these programmes aim to promote children's emotional regulation, positive social interactions, and communication skills.

Evaluating the IYA programme

The overall evaluation approach for the Incredible Years Autism programme comprises a process evaluation (which this information sheet relates too) to provide insights into the implementation of the programmes (Incredible Years Autism Parents and Incredible Years Autism Teacher), and an impact evaluation to determine if the programmes are achieving the intended outcomes.

The purpose of this process evaluation is to provide insights into the implementation of the IYAP and IYAT programmes, with a view to these insights informing both the impact evaluation, but also any further refinements to the programme.

The evaluation has four key focus areas (evaluation objectives). Each of these focus areas/objectives will be examined by seeking answers to a number of evaluation questions, detailed over page.

Focus areas	Evaluation questions
Demand, access and reach	1. What is the demand for services, and who is accessing the programme (e.g., socio-demographic profile, location, ethnicity etc.)? 2. How are people accessing services differently, and is this access pathway working effectively? 3. How well is the programme in reaching the right children (i.e., do those who need the programme access it and do those who access the programme need it)? 4. Is the programme equitable in reaching Māori and Pasifika children? 5. What, if any, are the barriers to parents and teachers accessing the programmes?
Programme implementation	6. Is the programme being implemented as intended and in a way that maintains its fidelity? 7. What aspects of the programme are working well/not well (for example, participation and delivery, communications between relevant health/education stakeholders, such as DHBs, local ASD coordinator and/or sector groups)? 8. What aspects of the programme could be improved – for parents and for teachers? 9. Does the programme appear to work better in some areas than others? Why? 10. Are all of the aspects of the programme required to achieve the intended outputs and outcomes, or are some aspects more fundamental than others? 11. What changes (if any) are being made to the programme to ensure delivery is culturally appropriate for Māori and Pasifika, and why? 12. How well are the Ministry's processes around communication and implementation of the programme supporting best-practice delivery of the programme?
Feasibility	13. How adequate are our inputs and capacity (such as the workforce, the training requirements) in the Ministry of Education and the Incredible Years model to achieve the intended outcomes of the programme, now and in future? What are key considerations (if any) that would affect the longer-term sustainability of the model in New Zealand?
Learning to inform the impact study	14. How appropriate are the measures for the different groups in this initiative for the longer-term impact evaluation? 15. How well does the demand for services enable a more robust evaluation approach through delayed enrolment or other mechanism (such as maintaining a register of interested participants in other locations)? To what extent could a list of interested participants (maintained as a register by providers) be used as a quasi-control group for the impact evaluation?

Your involvement

You have been identified as someone who is either actively involved in either the Incredible Years Autism Parent or Teacher programme, or, is a key stakeholder.

The evaluation team would like to arrange an interview with you, preferably face-to-face where possible, or otherwise over the phone.

The interview will seek to cover in broad terms the areas outlined in the evaluative questions above. Depending on your depth of knowledge and experience, the interview may spend more or less time in particular areas. Please treat these questions as a guide to support your thinking, and as a general frame for the interview. We also invite you to review the intervention logic that was developed as part of the design of the programme, and, and the participant journey map, which may also help to prompt your thinking.

The interview/group discussion will last approximately 1 hour.

What will happen to the information I provide?

Information you provide in interviews will be kept confidential and no respondents will be individually identified in reporting. Where the information may be identifiable, this will be checked with the participants before the information is used in reports.

Interviews may be digitally recorded, and notes taken to aid recall. This information will be kept and used only by the evaluation team. We will not be providing verbatim transcriptions of the interviews themselves.

The information collected for this evaluation will be held in a secure data management system in New Zealand that is only accessed by the evaluation team.

The raw information obtained through interviews will only be used for this evaluation.

Will I know the outcome of the evaluation?

Ministry of Education will disseminate the evaluation findings following the submission of the final evaluation report.

Who can I contact?

If you have any questions, concerns, further contributions regarding the interview or evaluation please feel free to contact:

Dr Kara Scally-Irvine
Evaluation Lead
EvalStars
kara@evalstars.com
+ 64 4 476 7391
+ 64 (21) 878 550

Akari Maiyamoto/Julia Tindall
IYA Programme Team leads
Ministry of Education
Akari.Miyamoto@education.govt.nz or
Julia.Tindall@education.govt.nz
+64 4 463 7065

Incredible Years Autism Process Evaluation
Interview Consent Form

Please read the statements below and circle '**YES'** or '**NO'**. If submitting electronically please delete, underline, or strikethrough accordingly.

1. I have read and understood the Information Sheet and have had the details of the process evaluation explained to me if/where required. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time. **YES / NO**

2. I understand that my participation is voluntary, that I may decline to answer any or all of the questions and that I may withdraw from participating at any stage. **YES / NO**

3. I agree to the interview being digitally voice recorded. **YES / NO**

Signature: _____ Date: _____

Name: _____

Email: _____

Appendix C: Information Sheet Evaluation Team

Introducing the Process Evaluation –July 2018

As part of the Ministry of Education's implementation of the Incredible Years Autism programme, we will be undertaking both a '**process**' and an '**impact'** evaluation to see how it's going and what difference is being made.

EvalStars has been contracted to carry out the **process** evaluation which will be conducted over the next few months. During this time, you may meet or be contacted by some or all of the three key team members from EvalStars that will be working on the project.

They may contact you via email, or ask you questions in person or over the phone about your experience or impression of how the project is going. Someone from the team will also be visiting your site. During these visits, they hope to conduct interviews with stakeholders such as yourselves, and also hold a group discussion with the parents and/or teachers that have taken part in the IYA programme (who have agreed to be involved in the evaluation).

Kate Averill is Director and a Senior Evaluator at EvalStars. She will be completing most of the fieldwork visits and overseeing the evaluation overall. Kate is highly experienced in research, monitoring, and evaluation in New Zealand and internationally. Kate has experience in education as a teacher, manager, and facilitator of organisational self-assessment.

Shaun Akroyd is contracted to EvalStars as a Senior Evaluator. He will be working with Kara, including joining some of the fieldwork visits. Shaun is passionate about education and health, particularly for Māori.

What are we asking of you?

As mentioned above, the team will be conducting visits to all locations where the IYA programme has run as part of the first cohort. We hope to meet with a range of stakeholders (including with you). They will also be contacting you and requesting support on a few logistical and practical matters.

They may ask you about thoughts on where, when, and how a group discussion with parents and/or teachers would work well for your groups. In addition, we would be grateful for any other insight you can provide into your groups, or any advice you may have to help the evaluation process run smoothly for you and your groups.

As a provider of the IYA programme, you know your IYA groups best. The team therefore thanks you in advance and appreciates your input to ensure we can get the best possible engagement from parents and/or teachers to help us with the evaluation. If you have any questions please feel free to contact either Kate, or Julia.

Kate Averill

Evaluation Lead

EvalStars

Julia Tindall

IYA Programme Work Lead

Ministry of Education

kate@evalstars.com

+ 64 4 476 7391 + 64 (27) 6853253

Julia.Tindall@education.govt.nz

+64 4 463 7065

Appendix D: Methodology

Information and data collection methods included:

Document review and literature scan

Document review of relevant background documents provided by the Ministry of Education, and online literature scan.

The evaluation plan included the review of a small number of reference documents.

- The Incredible Years Autism Evaluation Plan
- Supplementary Guidelines for Incredible Years
- Incredible Years Pilot Study Evaluation Report (MSD, 2013)
- Incredible Years follow-up study (MSD 2014)

A second document scan was completed as part of the evaluation. This focused on reviewing any additional background documents developed by the Ministry for the programme (such as the original Treasury Funding Application), and also a review of previous studies and evaluations referenced in the Evaluation Plan.

A targeted online literature review was also undertaken, looking to find any additional academic publications (to those already listed in the evaluation plan) examining the Incredible Years Autism programme specifically, or that examined the adaptation of the Incredible Years programme for children with autism spectrum disorders or developmental delays[29].This literature review was used to support the interpretation of the findings, and look to see if there are any comment themes emerging in the literature regarding the efficacy of the IYA programme in different contexts.

Analysis of programme data

A review and analysis of programme administrative data was completed, where consent process permitted the use of this as part of the process evaluation (see assumptions regarding access to programme data).

Group discussions

Up to two group discussions (one for each programme) will be held in each location with all participants (teachers/kaiako for the IYAT and parents/caregivers for the IYAP)30 framed around the four focus areas and guided by the evaluation questions.

Semi-structure stakeholder interviews

Semi-structured interviews framed around the four focus areas and guided by the evaluation questions were undertaken with a range of stakeholders listed below. These interviews were undertaken face-to-face wherever possible. Otherwise they were completed via phone or Skype.

- Providers (manager/administrator of the programme) for the IYAP and IYAT
- Group leaders who have delivered a programme in the first cohort of the IYAP and IYAT, including Ministry group leaders

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[29] e.g. McIntyre, L., (2008) Adapting Webster-Stratton's Incredible Years Parent Training for Children with Developmental Delay: Findings from a Treatment Group Only Study. *Journal of Intellectual Disability Research*. 52, issue 10, pp 1176-1192*;* Roberts, D and Pickering, N., (2010) Parenting training programme for autism spectrum disorders: an evaluation. *Community Practitioner*, vol. 83, no. 10, pp27+)

[30] Feedback from the Ministry of Education programme team suggests that some parent of the children are themselves on the Autism spectrum. For this reason, the parents/caregivers will be provided with a choice of their preferred feedback method when they are initially invited to participate in the evaluation; either in a group setting, or one-on-one.

- Participants (teachers/Kaiako for the IYAT and parents/caregivers for the IYAP) who indicate this is their preferred method of feedback. Where there is more than one parent/caregiver for a child indicating a preference for this method, then semi-structured interviews were undertaken
- Ministry of Health (Child Development Services and ASD Coordinators)
- National Autism sector group (e.g. Autism New Zealand)
- Other relevant programme stakeholders (e.g. Ministry of Education learning support managers, PB4L regional managers, Raukura/Chief Advisor Te Ao Māori and/or Group Manager Te Reo Māori for Early Learning and Student Achievement) were included where available
- An overview of how these information collection methods are expected to inform the evaluation questions is presented in Table 1 (over page). A tick ✓ denotes an information source that expected to provide primary information to answer the question. A tick in brackets (✓) denotes a supporting information source.

Analysis

Data analysis (quantitative and qualitative) was undertaken concurrently during the fieldwork to support the iterative data collection process (fieldwork occurred over several weeks, timed around the conclusion of each programme identifying emergent themes and enabling effective sense-making of the emergent findings). This was supported by debriefing and collaborative analysis sessions held with the Ministry's project team and relevant representative from the Evidence, Data, Knowledge (EDK) on completion of field visits. A refined thematic coding framework (for qualitative data) based on evaluation questions emerged following the early field visits. This allowed for efficient processing of data in subsequent field visits, to track convergent and divergent findings.

The analysis stage focused on ensuring all evaluation questions are answered allowing for overall assessments of the programme against the evaluation objectives. All data streams (primary and secondary, qualitative and quantitative) will be analysed by the evaluator(s) to identify substantiated findings against the four focus areas. Triangulation of data will provide robust evidence of what is working well, what isn't (and for whom), and what can be improved.

An updated programme model was developed for use by the impact evaluation, updating any relevant findings regarding change to the programme to fit the New Zealand context.

Ethical considerations

The IY programme had a robust consent process, requiring all teachers/kaiako and parents/caregivers to give consent to key administrative data to be collected, and on participation in the evaluation (see the supplementary guidelines for full details[31]). However, the consent giving process for participants outlined in the supplementary guidelines pertains only to the collection and use of the data collected by the evaluation tools for the impact evaluation.

Additional consent forms were developed and approved for use by the process evaluation team for the additional data collection (via face-to-face and group interviews).

The Evaluator(s) will be members of a relevant professional organisation (such as the Aotearoa New Zealand Evaluation Association, or the Australian Evaluation Society) and meet their professional guidelines and standards for ethical conduct.

[31] This includes details on matters such as when data needs to be collected, using which tools/measures, and how the data needs to be provided to the Ministry.

Evaluation Focus Areas (Objectives)	Evaluation Questions	Data sources				
		Document and literature review	Programme data review	Interviews with providers	Interviews /group discussion with participants	Other stakeholder interviews
Demand, access and reach	1. What is the demand for services, and who is accessing the programme (e.g., socio-demographic profile, location, ethnicity etc.)?	(✓)	✓	(✓)	(✓)	(✓)
	2. How are people accessing services differently, and is this access pathway working effectively?	(✓)	(✓)	✓	✓	✓
	3. How well is the programme in reaching the right children (i.e., do those who need the programme access it and do those who access the programme need it)? a) Is the programme equitable in reaching Māori and Pasifika children?		(✓)	✓	✓	✓
	4. What, if any, are the barriers to parents and teachers accessing the programmes?			✓	✓	✓
Programme implementation	5. Is the programme being implemented as intended and in a way that maintains its fidelity?		(✓)	✓	✓	✓
	6. What aspects of the programme are working well/not well (for example, participation and delivery, communications between relevant health/education stakeholders, such as DHBs, local ASD coordinator and/or sector groups)? a) What aspects of the programme could be improved – for parents and for teachers? b) Does the programme appear to work better in some areas than others? Why?		(✓)	✓	✓	✓
	7. Are all of the aspects of the programme required to achieve the intended outputs and outcomes, or are some aspects more fundamental than others?	(✓)		✓	✓	(✓)
	8. What changes (if any) are being made to the programme to ensure delivery is culturally appropriate for Māori and Pasifika, and why?	(✓)		✓	✓	(✓)
	9. How well are the Ministry's processes around communication and implementation of the programme supporting best-practice delivery of the programme?			✓	✓	✓
Feasibility	10. How adequate are our inputs and capacity (such as the workforce, the training requirements) in the Ministry of Education and the Incredible Years model to achieve the intended outcomes of the programme, now and in future? What are key considerations (if any) that would affect the longer-term sustainability of the model in New Zealand?	(✓)		✓	(✓)	✓
Learnings to inform the impact evaluation	11. How appropriate are the measures for the different groups in this initiative for the longer-term impact evaluation?	(✓)	(✓)	✓	(✓)	✓
	12. How well does the demand for services enable a more robust evaluation approach through delayed enrolment or other mechanism (such as maintaining a register of interested participants in other locations)? To what extent could a list of interested participants (maintained as a register by providers) be used as a quasi-control group for the impact evaluation?	(✓)	(✓)	(✓)		✓

Appendix E: Literature Review

Author (by year)	Participants	Method	Findings	Barriers	Assistance to participate
McIntyre (2008) **Intervention:** **Incredible Years Parent Training**	Parents of 25 children (2-5 years) with Autism or development delays.	• Developed and used a slightly modified IYP training for children with developmental delays (IYPT-DD). • Observed child and parent behavior pre- and post-intervention. • Administered pre- and post- questionnaires	• Results suggest preliminary evidence of efficacy in reducing negative parent and child behaviour and increasing parental perceptions of child positive impact. • Parents rated sessions as helpful. • Parent reported stress did not decrease.		• Evening sessions • Free childcare & dinner provided. • Locations selected based on accessibility for majority of participants. • If transportation presented a hardship to any participant, complimentary bus tokens were provided or taxis arranged. • All assessments (with the exception of the initial phone screen) were conducted in the family's home at a convenient time for the family.
Roberts & Pickering (2010) **Intervention:** **Incredible Years Basic Programme**	8 parents of 7 children with ASD – all boys. 3 children had ASD and anxiety, 1 ASD and ADHD, 2 presented with significant anxiety symptoms and social communication difficulties (a diagnosis had not yet been reached), and 1 had ADHD.	• Four formal measures were used pre- and post-test.	• General health questionnaire showed improvements for parents – except one who had other stressful events. • Parents reported positive changes to child behavior. • Parents feedback was positive, strong emphasis on feeling less isolated.		• The venue was a community building in the local area and appeared to suit the group's needs really well. It provided a relaxed atmosphere, away from the clinic, with good parking facilities and it was central for the families who attended. This may have contributed to the good up-take for the group.
Dababnah & Parish (2016a) **Intervention:** **Incredible Years (original) tailored to parents of children with autism.**	17 parents of preschool children with autism. Split into two groups. 14 completed the programme (one moved away, two were dissatisfied). All 17 completed some parts of the research e.g. exit interviews. Only one parent from each family was allowed to attend the programme.	• Data were collected at baseline, posttest, and on a weekly basis. • Three types of quantitative and qualitative measures were collected. Quantitative data included a pretest/posttest parent stress survey and a weekly acceptability questionnaire. • A comprehensive acceptability survey was administered. • Qualitative one-on-one interviews after program completion.	• Parent stress decreased significantly after program completion. • Participants reportedly enjoyed the play-based approach of the program, as well as opportunities for social support and peer learning. • Nearly all of the parents who completed the program felt it improved their relationship with their children.	• Two parents were dissatisfied with the program. Reasons for dissatisfaction included disruption in children's nighttime schedules, distance to class, need for more one-on-one support, and inability to bring partner to group. • Parents highlighted several barriers to their success in the program, including difficulty applying some program content (e.g., time-out for noncompliance) to children with sensory or self-regulation challenges. • The two parents that withdrew were significant on child baseline age only. • The foundation of the program, child-directed play, was not straightforward for some children. • Parents reported it was sometimes difficult to engage with their children during play, or their children's play was rigid or stereotypical. • Incentives (e.g., stickers) were not motivating for some children, and many did not respond to time-out strategies.	
Dababnah & Parish (2016b) **Intervention:** **The Incredible Years (original) tailored to parents of children with autism.**	17 parents of preschool children with autism. Split into two groups. 14 completed the programme (one moved away, two were dissatisfied). All 17 completed some parts of the research e.g. exit interviews. Only one parent from each family was allowed to attend the programme.	Focus on qualitative measure of fidelity	• Parents benefited most from child emotion regulation, strategies, play-based child behavior skills, parent stress management, social support, and visual resources. More work needed to address parent self-care, partner relationships, and the diverse behavioral and communication challenges of children across the autism spectrum.	• Disruption to children's nighttime routines was cited as the reason one parent declined to join and by another who withdrew.)	• 8/14 parents regularly or occasionally used the childcare supports - All participants who used childcare reported they would not have been able to attend without it. • Parent access and retention could potentially be increased by providing in-home childcare vouchers and a range of times and locations in which to offer the program.
Hutchings, Pearson-Blunt, Pasteur, Healy, & Williams (2016) **Intervention:** **Incredible Years Autism**	Parents of children aged between 2 - 5 with or awaiting autism diagnosis. Nine parents enrolled for the course, eight mothers and one father who attended the sessions with his partner. Nine children were represented, seven individual children and one pair of twins. Eight of the nine parents completed the programme and one parent (the parent of twins) withdrew after attending three sessions.	• Brief evaluation at the end of each session • Fuller evaluation at the end of the programme. • Plus semi-structured interview • Plus four standardized questionnaires.	• Parents rated the programme highly. • All eight parents who completed the programme found it helpful. • Most helpful were discussions about the homework activities, learning how to ignore unwanted behaviour and meeting other parents. • All parents reported that it had an impact on their parenting as it helped them to see things from their child's point of view.	• 3/8 parents felt the two hour sessions needed to be longer to fit all of the content in. • Course location was a barrier for parents – several travelled considerable distances. • One parent described how the cost of creche, buses, and time made it hard to attend.	
Zamora, Harley, & Hudson (2016) **Intervention:** **Incredible Years (original) tailored to parents of children with autism – and for the cultural group.**	Seven families consented and participated in a modified Incredible Years® parent training intervention. All parents were monolingual Spanish speakers. The mean age of the seven children was 7 years, 10 months. All seven children were clinically diagnosed by a mental health provider as being on the autism spectrum with a co-occurring mental health diagnosis, ie Disruptive Behaviour Disorder Not Otherwise pecified (NOS) and Oppositional Defiant Disorder.	• The parent Incredible Years Programme Satisfaction Questionnaire, Basic Parent Programme was completed by each parent at the end of the parent training intervention. • An exit interview was conducted with each individual family by one of the co-facilitators at the end of the parent training intervention to gather qualitative information and facilitate treatment planning.	• Overall, parents reported that they felt "greatly satisfied" to "satisfied" with the curriculum, as well as the delivery and implementation of the modifications, which likely links to the outcome that participation of the families was high. • Parents reported that they felt they learned a lot from the group. They especially enjoyed the exercises, activities, and role plays used to help reinforce the competencies learned.		• Free childcare and a light snack were provided at each session. The intervention location was accessible to all families by car, bus or train. • One novel element which was included was the introduction of the children into role play sessions. These practice interactions took place for 20 minutes at the end of each group session and were designed to enhance and reinforce the concepts learned as part of the parent curriculum. • The programme was tailored to the individual and cultural needs of the group.

Williams, Hastings, Charles, Evans, Hutchings (2017)	• This article describes the protocol for pilot randomized controlled trial of IY - Autism. • The trial will provide the first rigorous evidence for the effectiveness of IYA for parents of children with autism spectrum disorder, including initial cost-effectiveness.
McIntyre (2008)	• 21 families received Incredible Years Parent (regular); 12 had autism diagnosis. • Families of a child with autism did not respond differently to the experimental treatment than did families with a child who had other developmental disabilities. • There was a trend approaching significance in baseline assessments of parent–child interactions in the autism group versus the developmental disabilities group. That is, 57.5% of intervals contained an inappropriate/negative behavior in the autism group, whereas only 44.5% of intervals contained an inappropriate/negative behavior in the developmental disabilities group. • There were no differences between the autism and developmental disabilities groups in terms of their behavior problems as reported on the CBCL
Webster-Stratton & Reid (2008)	• Provides general guidelines for how to work with children with autism directly (using the IY Dinosaur programme)

Appendix F: IYAP programme 2018 – regional data

	Dates		Participant numbers					Number of participants each scheduled session																Drop outs			Percentage completion (includes make ups) - excludes non starters					
	Start	End	Enrolled Caregivers	Attended session 1	Attended final session	Estimated children families at	Note	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Participants who received at least one make up session	#	Note	%	less than 10%	11-20%	21- 40%	41- 60%	71-80%	81- 100%
Bay of Plenty	27-Mar	26-Jun	12	11	9	8		11	11	10	8	10	9	9	8	7	9	10	10	9	9	N/A	N/A	9	2*	7	17%	2	0	0	0	1	9
Bay of Plenty	28-Mar	27-Jun	12	7	2	5*	1	7	7	7	4	6	5	6	7	5	6	7	7	2	N/A	N/A	N/A	3	4*	8	33%	0	0	0	0	2	5
Hawkes Bay	6-Apr	10-Aug	12	9	4	9*	2	9	8	8	6	8	3	6	4	6	4	5	3	3	N/A	N/A	N/A	3	5*	9	42%	2	3	6	0	0	1
Invercargill	2-May	15-Aug	7	7	4	7*	3	7	5	5	4	4	4	4	4	2	2	4	2	4	N/A	N/A	N/A	2	3		43%	1	1	1	0	1	3
Wellington	17-May	13-Sep	11	9	11	8		9	11	11	10	10	7	8	7	8	10	5	8	8	9	11	11	6	0		0%	0	0	0	0	0	11
Nelson	28-May	24-Sep	8	7	8	6		7	7	8	6	6	7	8	8	8	4	8	7	8	8	N/A	N/A	5	0		0%	0	0	0	0	1	7
Hawkes Bay	18-Jun	1-Oct	8	7		7		7	6	6	5	5	7	4																			
Christchurch	19-Jun	28-Sep	8	5	5	6*	4	6	5	4	6	3	4	5	4	5	5	4	5	5	N/A	N/A	N/A	1	3		38%	1	1	0	0	1	4
Auckland	7-Aug	6-Nov	9	6		6*	5	6	6	6	5	4																					
Auckland	8-Aug	6-Nov	11	11		10		11	11	10	11	11	11																				
Auckland	9-Aug	22-Nov	11	11		9*	6	11	9	7	7	8	8	5	9																		
Bay of Plenty	2-Aug	13-Nov	11	9		9		9	9	8	8	7	8	7													0%						
Bay of Plenty	3-Aug	14-Nov	8	8		7		8	8	8		7	6	7																			
Wellington	15-Aug	21-Nov	9	5		7		5	9	8																							
Wellington	24-Aug	7-Dec	6	5		5		5	5	5																							
Totals			143	117	43	109		118	117	111	88	89	79	69	51	41	40	43	42	39	26			29	17			6	5	7	0	6	40

Notes:

1. But four participants enrolled did not start so the three children are excluded from this total.
2. Note that 4 families/children dropped out. Includes 1 family where both paretns dropped out after session 1; and one parent who attended session 2 only. So reach is only 5
3. But I parent/family dropped out after sessoin one and another 2 dropped out at session 2 and 3 so reach is really 4.
4. 7 families enrolled but one droppped but one never started
5. 1 didn't start and one dropped out after session 1; another attended 1 and 3 and dropped out.
6. 10 families but 1 family dropped out after first session
7. both from same family
8. Did not actually start. Represents 3 children/families
9. Represents 4 families/4 children

Appendix G: IYAT programme 2018 – regional data

	Dates		Participation			How many ECEs/ Schools			Number of participants for each scheduled session							
	Start	End	Enrolled teachers	Attended session 1	Attended final session	ECE	Schools	Drop outs	1	2	3	4	5	6	Participants who received at least one make up session	100% Attendance
Taranaki	18-May	15-Jul	12	11	8	7	0	0	11	10	8	8	7	8	8	12
Christchurch	21-May	26-Jun	12	12	12	8	0	0	12	12	12	12	12	12	0	12
Hawkes Bay	18-Jun	23-Jul	11	10	10	9	1	1	10	11	10	10	10	10	0	9
Nelson	5-Jul	20-Sep	10	10	10	10	0	0	10	10	10	10	10	10	0	10
Bay of Plenty	24-Jul	2-Oct														
Hawkes Bay	30-Jul	3-Sep	11	11	11	11	0	0	11	11	11	11	11	11	0	11
Taranaki	13-Aug	24-Sep	12	12	12	12	0	0	12	12	12	10	11	12	3	12
Hawkes Bay	13-Aug	29-Oct														
Christchurch	13-Aug	24-Sep														
Hawkes Bay	1-Oct	5-Nov														
Christchurch	15-Oct	19-Nov														
Bay of Plenty	24-Oct	28-Nov														
Totals			68	66	63	57	1	1	66	66	63	61	61	63	11	66

Appendix H: Implementation Review Day

Incredible Years Autism Implementation Review Day | Summary — 27 August 2018

Participation and Retention: key themes and summary

External pressures – health, finance, children's needs

There is often a demand for evening courses but that presents challenges in getting carers for young children and there are often attachment issues that make it difficult.

Money is an issue but group leaders make use of disbursements for petrol vouchers, and paid childcare.

There are particular regional issues – for example, Hawkes Bay's high number of seasonal workers impacts on participants' attendance.

The client base experiences more stress and exhaustion than our other families – theyoften have a number of professionals involved in their lives, and more issues to deal with. It doesn't take much to throw them off track.

Reaching and engaging families

Parents are not recognising their child may be on the autism spectrum but teachers are. However, teachers (who have not participated in the IYAT course) are not confident to have a conversation with parents about their child when they think the child may be on the autism spectrum.

Parents are not necessarily dropping out but attendance is sometimes sporadic.

Group support is highly valued as parents of children in the younger age range are likely to have started to move away from other parenting support such as ante natal groups.

The IY Parent programme is successful and has been built up through word of mouth – The same reputation is not there for IYA yet but it will build.

Group leaders need more time upfront to build relationships with parents.

The paperwork is onerous and is made harder by literacy and language issues.

Access and criteria

There is a mixed experience around medical diagnosis.

Some providers' participants are mainly drawn from children with a diagnosis of autism.

Where there is no diagnosis, the parents are more likely to be going through a grieving process as they acknowledge what is happening. The programme needs to give those parents space to grieve.

In some areas, there are significant waiting lists for getting a diagnosis.

In some areas, some clinical psychologists are not keen to refer non diagnosed children to the programme as they think it may affect the diagnosis later.

For the IYA Teacher programme there is a real benefit in prioritising participants who have completed the IY Teacher programme previousl.

Challenges and learnings: key themes and summary

Participants brainstormed answers and ideas around five questions based on the discussion on participation and retention.

- (T) How might we improve transition for parents whose children are starting school? **[Transitions]**
- (R) How might we improve retention and regular attendance? What supports can we provide? **[Retention]**
- (A) How might we improve links between the IYAP and IYAT programmes? **[Alignment]**
- (C) How might we adjust the criteria for both programmes to increase participation? **[Criteria]**
- (M) How might we ensure pre and post measures are appropriate for our families? **[Measures]**

Integration with other services, process and approaches

- (R) Offer IYA as part of a suite of services and not a standalone programme.
- (R) Sign post parents as to what support or groups are available and how IYA fits in with them.
- (A) Support local/regional planning between IYP and IYT providers.
- (A) Identify teacher or school and have meetings to ensure successful transitions.
- (A) Encourage and empower regional offices to champion the IYAP/T relationship.
- (T) Extend The parent programme to include the role of IYP programme lead acting as advocates for parents when transitioning to primary school.
- (T) Include Special Education Needs Coordinator, Resource Teacher Learning Behaviour and Teacher Aides to support transition.
- (C) Upper age limit should be increased to 7-8 to align diagnosis timeframe.
- (C) For IYTA we might consider working with the home based ECE sector as registered visiting teachers can and do work intensely with children, educators, teacher and parents.
- (C) Rather than widen the acceptance criteria we need to use pathways more effectively.

Stepping into our families' world – their perspective, needs and challenges

- (R) Ensure there is enough lead in time before the programme starts so that parents have enough time to arrange their lives.
- (R) Keep supporting parents with fuel vouchers, paid child care and offer catch ups when needed.
- (R) Note that these families are not mainstream families. We need to acknowledge we are working in a disability space.
- (R) In the initial interview seek to understand the support relationships that are in place (or need to be in place).
- (R) Have parents from the previous programme address the group.
- (R) Need to build relationships with parents before programme starts.
- (R) Offer four home visits each programme.
- (T) Help parents choose schools that will be supportive.
- (M) Celebrate successes/milestones achieved.
- (M) Forms are time-consuming – have a separate home visit to fill in forms after the initial relationship building session.

Education, publicity, promotion and buy-in

- (R) Hold briefing sessions with parents/groups prior to enrolment.
- (R) Identify all agencies and stakeholders in regions that work with our families – eg Autism NZ, GPs, paediatricians.
- (R) Find linkages with other community groups in the areas where out families live – give presentations to them.
- (A) Educate schools and teachers about IYA – help them be champions for IYA even if they cannot be trained.
- (A) Encourage and empower regional offices to champion the IYAP/T relationship.
- (A) Run seminars for teachers explaining the programmes.
- (A) 'Sell' IYA to Principals so they support it.
- (T) Educate schools about IYA.
- (C) For IYAT, we need to consolidate and build slowly.

INCREDIBLE YEARS AUTISM – PARENT AND TEACHER TRAINING PROGRAMMES

EVALUATION REPORT

Associate Professor Laurie McLay, Dr Cara Swit, Professor Neville Blampied, Dr Anne-Marie McIlroy, and Dr Dean Sutherland

UNIVERSITY OF CANTERBURY | MARCH 2021

Correspondence regarding this report should be addressed to:

A/Prof. Laurie McLay

School of Health Science, University of Canterbury

Private Bag, 4800

Christchurch 8140

Email: laurie.mclay@canterbury.ac.nz

Phone: (03) 369 3522

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EXECUTIVE SUMMARY

The Incredible Years Autism programmes are part of a series of interconnected evidence-based parent and teacher training programmes developed by child psychologist and researcher, Dr Carolyn Webster-Stratton. The Incredible Years Autism – Parent (IYA-P) and Incredible Years Autism – Teacher (IYA-T) training programmes were developed specifically to target parents and teachers of 2-5 year old children on the autism spectrum. Internationally, IY programmes have been shown to be effective across cultural and ethnic groups and those of different socioeconomic status (Allen, 2011), In Aotearoa New Zealand, IY programmes have been delivered by iwi-based providers and Māori NGOs. Participation in the IYA programmes is funded from the 2017 Budget as part of a Social Wellbeing initiative which focuses on supporting child wellbeing, engagement in education, and improving child behaviour. Access to the programmes is currently available in eight regions in Aotearoa New Zealand.

A typical IYA-P programme involves 14 sessions and an IYA-T programme involves six sessions. Sessions are delivered face-to-face by two trained and accredited facilitators. Caregiver and teacher participants are those who look after or teach a child who is on the autism spectrum or who demonstrates characteristics of autism. The majority of children receiving support through the IYA programme attend an early learning service.

A focus of IYA programmes is equipping participants with the knowledge, skills and attitudes to support children's social interactions, emotional regulation, communication and school readiness skills. The goals of the programme are achieved through the use of a range of learning-based activities. These include the use of group discussions, reflections on vignettes, role play and homework activities.

The approaches and theoretical underpinnings of the IYA-P/T programmes are sourced from child development, attachment and social learning theories. For example, it is well known that children on the autism spectrum are likely to present with communication and behaviour challenges, and social learning theory suggests that children's behaviour and development is heavily influenced by the adults they spend time and interact with. Therefore, supporting adults to develop new skills and strategies to interact and communicate can, in turn, support change and development in a child on the autism spectrum. On completion of an IYA-P/T programme, parent and teacher participants are typically better equipped to provide a supportive and enabling environment – at home, early learning services or schools and the wider community. A more comprehensive overview of the IYA programmes is provided in Appendix A.

Evaluation questions

The overarching aim of this evaluation was to assess the effectiveness and impact of the IYA-P/T programmes. This was evaluated by examining the extent to which the IYA programmes contributed to:

1) increased engagement, emotional regulation and communication skills of young children demonstrating behaviours associated with autism (child outcomes);

2) increased wellbeing and coping skills of caregivers enabling them to better support their child (caregiver outcomes);

3) increased teacher capability to help children demonstrating behaviours associated with autism (teacher outcomes); and

4) longer term and unintended benefits for those involved and the wider communities (additional benefits).

Where sufficient data was available, this evaluation also aimed to explore how different participants (e.g., differing by demographic characteristics, region of programme delivery) and their children benefited from the programme.

This evaluation report presents data obtained from Cohort 1 and Cohort 2 evaluations. IYA-T Cohort 2 data, also includes pre- and post-participation data obtained from Cohort 3 participants. An analysis of the Cohort 3 IYA-T data deemed it was appropriate to integrate this data within the Cohort 2 evaluation (henceforth, collectively referred to as Cohort 2).

The evaluation team drew upon qualitative and quantitative data to make an overall judgement about the effectiveness of the IYA programme in achieving expected child, parent, and teacher outcomes. These judgements were made in accordance with the programme specific evaluation rubric provided in the evaluation framework, which describes the criteria for classifying outcomes as 'excellent', 'very good', 'adequate', or 'poor'. This rubric is presented in Appendix B. It should be noted that according to the theory of change proposed in the Ministry of Education Evaluation Framework, it was first expected that IYA participants would acquire skills, strategies, and behaviours that they would apply around the child. This would then result in secondary improvement in child outcomes. As such, we may expect to observe larger effects for proximal (parent and teacher) outcomes and smaller effects for more distal (child) outcomes.

Data collection and analysis

For the purpose of this evaluation, a combination of quantitative and qualitative methods were used that aligned with the evaluation questions and programme theory. Quantitative data was collected using a combination of caregiver- and teacher-reported assessment measures, administered during the pre-, post-, and/or ex-post training phases. In addition, several interviews were undertaken with parent and teacher participants during the ex-post training phase. Pre- and post-training assessments were administered via the IYA providers using the IYA app. Ex-post assessments were administered through the evaluation team, via telephone or Zoom. Qualitative data was analysed in accordance with inductive qualitative content analysis procedures.

Cohort 1, assessment data was collected from 60, 50, and 20 caregivers during the pre-, post-, and ex-post phases, respectively, and a total of 95, 70, and 47 teachers provided assessment data during the pre-, post-, and ex-post phases, respectively. A total of 14 parent and 27 teacher interviews were undertaken. This represents a survey attrition rate of 67% and an interview attrition rate of 77% from pre- to ex-post phases, for consenting caregiver participants. For consenting teacher participants, this represents survey and interview attrition rates of 51% and 72% respectively, from pre- to ex-post phases.

For Cohort 2, assessment data was collected from 61, 42, and 21 caregivers and 96, 75, and 26 teachers during the pre-, post- and ex-post phases, respectively. A total of 12 caregiver and 21 teacher interviews were undertaken. This represents a survey attrition rate of 66% and an interview attrition rate of 80% from pre- to ex-post phases, for consenting caregiver participants. For consenting teacher participants, this represents survey and interview attrition rates of 73% and 78% respectively, from pre- to ex-post phases.

A summary of the outcomes of this evaluation for Cohort 1 and 2, and a synthesis of these collective findings is provided below, and described in greater detail in the main body of this report. Attrition rates in the sample were high, especially at the ex-post phase, limiting the generality of conclusions drawn. For both quantitative and qualitative measures taken only at the ex-post point, only conclusions about the current state of the participants and their children are possible. It is not possible to draw causal conclusions about the contribution of participation to the state of affairs noted at the ex-post point because of the lack of pre-data.

Child outcomes (evaluation question 1)

Evaluation question 1 examined the extent to which participation in the IYA programme contributed to increased engagement, emotional regulation and communication skills of young children demonstrating behaviours associated with autism. The primary outcome of interest was child engagement, though additional measures were selected by the evaluation team to assess emotional regulation and communication skills, as secondary outcomes. Based on the Young Children's Participation & Environment Measure (YC-PEM; Khetani, Graham, Davies, Law, & Simeonsson, 2015) there was some improvement reported in the frequency of children's participation in the home environment for Cohort 1, and a reduction in the percentage of activities where change was desired by caregivers across cohorts. This change was most evident between pre- and ex-post training phases suggesting a delayed effect of training, while also providing evidence of the beneficial long-term effects of training. For the remaining two relevant YC-PEM variables (percentage of activities that the child participates in and the average involvement of the child in home activities), outcomes were trending (to a small extent) in a positive direction; however, the Effect Sizes (ES) were negligible and the practical magnitude of the change was often relatively small, suggesting little change in these outcomes in response to training.

Selected items on the Participant Program Satisfaction Questionnaire: Autism Spectrum and Language Delays Programme (PSQ-P) and Incredible Years Participant Satisfaction Questionnaire – Helping Preschool Children with Autism Program (PSQ-T) were also used by the evaluation team to measure secondary child outcomes (i.e., emotional regulation and communication skills). Both parents and teachers consistently reported that children's self-regulation and imagination and social and emotional skills had 'improved' or 'greatly improved' post-participation in the IYA programme.

During interviews, caregivers commonly reported increased engagement with others, increased participation in the learning environment, and improvements in their child's social and emotional regulation, communication and understanding. Some caregivers also reported that their child was more enthusiastic about attending their early childhood service, and teachers and other children were including the child in a greater number of activities such as structured games and birthday parties. Other caregivers indicated that their child had always been enthusiastic about attending the centre and there was no change in the child's attendance or inclusion. Several caregivers said that the IYA programme exceeded their expectations and their child has shown significant progress since the IYA strategies have been implemented.

Based on quantitative data, it is the judgement of the IYA evaluation team that the impact of participation in the IYA programme on child outcomes is 'adequate'. However, based on qualitative data the impact of participation in the IYA programme is considered to be 'very good' (while remembering that attrition meant that only a minority of participants supplied interview data).

Caregiver outcomes (evaluation question 2)

The second evaluation question examined the extent to which participation in the IYA programme increased the wellbeing and coping skills of caregivers, enabling them to better support their child. Based on the Autism Parenting Stress Index (APSI; Silva & Schalock, 2012) data, caregivers experienced reduced stress levels post-training, with an effect size indicating a borderline large and medium effect for Cohort 1 and Cohort 2, respectively. This reduction in stress was still evident at follow-up for both cohorts. The effect size was smaller (Cohort 1, -.5; Cohort 2, -.45) at this time point but still indicated a medium effect overall, particularly for those who entered the programme with high stress scores to begin with.

The Depression, Anxiety, and Stress Scale (DASS-21; Lovibond & Lovibond, 1995) was administered for Cohort 1 only. For this cohort, DASS-21 scores were within the normal range during the ex-post training phase. Interestingly, there was a significant correlation between APSI and DASS-21 scores, suggesting that these measures have good convergent validity as measures of stress. Therefore, the DASS-21 was not administered for Cohort 2.

On the PSQ-P, caregivers rated themselves as generally 'optimistic' about their progress toward the use of strategies that they were taught during the IYA programme and their goal achievement, suggesting that caregivers felt confident in the use of skills that they had acquired during the programme. Qualitative data analysis also revealed caregiver-reported improvement in their wellbeing and increased feelings of confidence and competence in their use of strategies.

Based on this data, the impact of programme participation on caregiver wellbeing and coping skills is considered to be 'very good' (but noting the caveat stated above re attrition).

Teacher outcomes (evaluation question 3)

The third objective of this evaluation was to determine the impact of participation in the IYA-T programme on the wellbeing and coping skills of teachers, enabling them to better support their child. Based on Incredible Years Teacher Strategies Questionnaire for Children with Autism (IYTSQ) pre-, post-, and ex-post data, teachers' confidence and frequency of use of strategies improved across pre-post- and ex-post training phases. This finding is similarly reflected in PSQ-T (post-) data, which suggests that teachers felt 'optimistic' or 'very optimistic' about their future use of social and emotional coaching strategies.

Teacher interview data was also overwhelmingly positive, with key themes indicating that teachers felt more confident in their knowledge of Autism and in their ability to apply strategies to support children on the autism spectrum in their educational contexts. Many teachers described the IYA-T programme as the most useful professional development they have attended. A small number of teachers (Cohort 1, $n = 4$; Cohort 2, $n = 1$) felt that their participation in the IYA programme had a limited impact, as strategies that they learnt were ineffective when applied to a child on the autism spectrum or they felt they were already using strategies that had been taught.

Based on the available quantitative and qualitative data, the impact of the IYA-T programme on teacher outcomes was determined to be in the range of 'very good' to 'excellent'.

Longer term and unintended benefits (evaluation question 4)

The final evaluation question was designed to assess any long-term and unintended benefits of programme participation. The long-term impact of participation in the IYA programme on children's health and wellbeing was assessed using the Pediatric Quality of Life Inventory – Generic Core *Scales*™ (PedsQL; (Varni, 1998) ex-post data. Unfortunately, insufficient ex-post data and limited data variance meant that it was not possible to draw conclusions about the impact of programme attendance rates on wellbeing outcomes, even when data was pooled across cohorts.

The responses of the minority of caregivers who participated in interviews reported several unintended benefits of programme participation. These included increased communication and collaboration between home and the centre. Caregivers felt this was the result of increased confidence to initiate conversations with their child's teacher. Several caregivers and teachers also reported sharing their learning with their immediate and extended family/whānau and colleagues, thus providing indirect benefit to those around the child. Many caregivers also reported personal benefits, including improvements in their own emotional regulation, the acquisition of new knowledge about autism, the opportunity to share and problem solve collaboratively, a positive effect on their relationship with their child and their partner, and the development of social supports and relationships with other caregivers completing the programme.

Teachers consistently reported an increased ability to support ALL learners, and the ability to share their learning with their colleagues and caregivers. A majority of teachers who were interviewed in Cohort 2 ($n = 20$) said they were still experiencing the benefits of the IYA-T programme, six months on. Overall, those interviewed described having positive and worthwhile experiences in relation to the children with whom they interacted at home and/or school.

A summary of evaluation outcomes is presented in Table 1.

Limitations of this evaluation

While the evaluation outcomes are largely positive, they should be interpreted and generalised cautiously in view of the limitations inherent within the structure of the evaluation design and resulting data. There are noteworthy limitations arising from sample attrition, a small ex-post sample size, and the lack of pre- data for many measures. Data analysis was also limited by the lack of data variance and the relatively small number of participants in the evaluation. This meant it was not possible to analyse the interaction between attendance rates, ethnicity, training region, and child, caregiver, and teacher outcomes, since appropriate analyses require both substantial variance and sample sizes.

This issue is further compounded by the fact that some of the ex-post measures were not administered during the pre-training phase. Additional ex-post measures were added to the data collection process because they were deemed relevant to answering the key evaluation questions. However, this limited the possible approaches to data analysis and prevented any conclusions that participating in training directly resulted in the outcomes measured, since such conclusions can only be based on pre-post, time-series data. It is important to note that, as acknowledged in the evaluation framework, there were limitations to what could feasibly and ethically be administered within the context of the programme.

Finally, a number of measures did not have normative data or criteria for classifications (e.g., the IYPSQ, PSQ, YC-PEM, APSI, and IYTSQ), including sound psychometric evidence for their validity in measuring key constructs, limiting the interpretability of the findings. This is a particular issue for interpretation in Aotearoa New Zealand with its ethnically distinctive and diverse community. These standardised measures were selected as they were designed specifically for the evaluation of IYA programmes and thus, there is a strong rationale for the selection of these tools, however, these limitations do have implication for data analysis, interpretation of findings, and any policy recommendations that may be made based on the findings. These limitations and subsequent recommendations are described more fully in the main body of this report.

Table 1. Summary of evaluation outcomes and overall judgement for Cohort 1 and 2 participants[1].

Evaluation outcomes	Cohort 1 outcomes	Cohort 1 judgement	Cohort 2 outcomes	Cohort 2 judgement	Overall judgement
Child outcomes (quantitative data)	• Increased participation in home environment • Reduction in percentage of activities where change desired ***Positive trend but minimal change in:*** • percentage of activities that the child participates in • average involvement in home activities	**Adequate**	• Reduction in percentage of activities where change desired ***Positive trend but minimal change in:*** • percentage of activities that the child participates in • increased participation in home environment • average involvement in home activities	**Adequate**	**Adequate (approaching 'very good)**
Child outcomes (qualitative data)	• Increased engagement, participation learning, social and emotional regulation, communication and understanding. • Increased enthusiasm for attending early childhood service • Increased inclusion	**Very good**	• Increased engagement, participation learning, social and emotional regulation, communication and understanding. • Increased enthusiasm for attending early childhood service	**Very good**	

[1] The overall judgement is subject to overarching considerations regarding study limitations such as psychometric validity of measures and sample attrition, especially at the ex-post time point

			• Increased inclusion		
Caregiver outcomes (quantitative data)	• No change or a reduction (majority) in parental stress	**Very good**	• No change or a reduction (majority) in parental stress	**Very good**	**Very good**
Caregiver outcomes (qualitative data)	• Improvement in wellbeing • Increased feelings of parenting confidence and competence • Improved relationships between home and centre	**Very good**	• Improvement in wellbeing • Increased feelings of parenting confidence and competence • Improved relationships between parental social relationships		
Teacher outcomes (quantitative data)	• Increased confidence in use of strategies • Increase in frequency of use of strategies	**Very good**	• Increased confidence in use of strategies • Increase in frequency of use of strategies	**Very good to excellent**	**Very good to excellent**
Teacher outcomes (qualitative data)	• Increased confidence in knowledge of ASD • Increased ability to apply strategies to support children in educational contexts • Some reported limited impact	**Very good to excellent**	• Increased confidence in knowledge of ASD • Increased ability to apply strategies to support children in educational contexts		

INCREDIBLE YEARS AUTISM EVALUATION PROCEDURES AND OUTCOMES

The evaluation team

This IYA evaluation was undertaken by a multi-disciplinary team of academic staff and research assistants at the University of Canterbury (UC). This included Associate Professor Laurie McLay (principal investigator; PI), Dr Cara Swit, Professor Neville Blampied, Dr Anne-Marie McIlroy, and Dr Dean Sutherland.

Consent and recruitment

All participants in the IYA-P/T programme who were approached by the evaluation team had previously consented to being involved in the ex-post evaluation. The evaluation team obtained additional consent within the teacher and caregiver surveys that were administered, to collect ex-post data. This included consent to the audio recording of interviews. A copy of the consent form provided to participants is included in Appendix C. The procedure for participant recruitment is described in detail in Appendix D.

Caregiver participation across evaluation phases

A total of 60 caregivers consented to being involved in the evaluation and provided pre-participation data for Cohort 1, and 61 consented and provided such data for Cohort 2. A total of 92 caregivers provided post-participation data (Cohort 1, 83% of pre-participation respondents; Cohort 2, 69% of pre-participation respondents), and 41 (Cohort 1, 33% of pre-participation respondents; Cohort 2, 34% of pre-participation respondents) provided ex-post participation data. As reflected in Table 2, for each cohort, the majority of caregiver survey respondents across phases were those who completed all sessions. This distribution of respondents is similarly reflected in the number of interview participants whereby 13/14 and 7/12 interviewees completed all study sessions for Cohorts 1 and 2, respectively. For Cohort 2, those who did not complete all sessions, completed 11 sessions. The majority of survey respondents and interviewees across phases and cohorts, were of NZ European ethnicity. For Cohort 1, over half of respondents were from the Wellington or the Bay of Plenty region. For Cohort 2, data was only provided from participants in the Wellington, Bay of Plenty, and Auckland regions.

Teacher participation across evaluation phases

A total of 95 teachers consented to being involved in the evaluation and provided pre-participation data for Cohort 1, and 96 consented and provided such data for Cohort 2. As reflected in Table 3, the majority of teacher survey respondents across cohorts, were those who completed 5-6/6 sessions. The majority of the remaining teacher respondents completed 3-4 programme sessions. This is similarly reflected across interview respondents, where 63% (*n* = 17/27) and 100% (*n* = 22/22) interviewees completed all study sessions for Cohort 1 and 2, respectively. The majority of teacher respondents across cohorts identified as New Zealand European ethnicity. Cohort 1 IYA-T participants were predominantly from Wellington, Canterbury, Taranaki, and Nelson. Cohort 2 IYA-T participants largely resided in Bay of Plenty, Canterbury, and Hawke's Bay.

Table 2. The number of caregiver respondents at pre-, post-, and ex-post training phases, according to participation rates, ethnicity, and region.

	Pre-participation responses (N)		Post-participation responses (N)		Ex-post participation responses (N)		Interviews (ex-post only; N)		Survey Attrition rate pre- to ex-post	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
Participation in IYA-P (14 sessions)										
12-14 sessions	40	30	39	27	16	14	13	7	60%	53%
9-11 sessions	10	15	9	12	2	6	1	5	80%	60%
5-8 sessions	5	7	2	3	2	1	0	0	60%	86%
1- 4 sessions	3	6	0	0	0	0	0	0	100%	100%
No attendance but completed pre-questionnaires	2	3	0	0	0	0	0	0	100%	100%
Ethnicity										
NZ European	25	32	22	26	8	13	6	9	68%	59%
Māori	15	17	13	10	4	4	2	1	73%	76%
Pacific Peoples	5	2	5	0	3	0	1	0	40%	100%
Asian	4	7	2	5	1	3	0	2	75%	57%
Middle Eastern, Latin American/African	1	2	1	1	0	0	0	0	100%	100%
Other/no option selected	10	0	7	0	4	1	5	0	60%	100%
Region										
Bay of Plenty	16	25	16	21	7	9	5	5	56%	64%
Nelson	7	0	4	0	1	0	1	0	86%	
Wellington	15	20	13	15	4	8	2	6	73%	60%
Canterbury	7	0	5	0	2	0	2	0	71%	
Hawke's Bay	9	0	7	0	4	0	3	0	56%	
Otago/Southland	5	0	4	0	1	0	1	0	80%	
Auckland	1	16	1	6	1	4	0	1	0%	75%
Total	**60**	**61**	**50**	**42**	**20**	**21**	**14**	**12**	**67%**	**66%**

Table 3. The number of Cohort 1 and 2 teacher respondents at pre-, post-, and ex-post training phases, according to participation rates, ethnicity, and region.

	Pre-participation responses		Post-participation responses		Ex-post responses		Interviews (ex-post only)		Survey Attrition rate (pre- to ex-post)	
	Cohort 1	**Cohort 2**	**Cohort 1**	**Cohort 2**	**Cohort 1**	**Cohort 2**	**Cohort 1**	**Cohort 2**	**Cohort 1**	**Cohort 2**
Participation in IYA-T programme (six sessions)										
5-6 sessions	70	88	50	74	32	26	17	22	54%	70%
3-4 sessions	20	8	16	1	12	0	8	0	40%	100%
1-2 sessions	4	0	4	0	3	0	2	0	25%	0
No attendance but completed pre-questionnaires	1	0	0	0	0	0	0	0	100%	0
Ethnicity										
NZ European	81	76	60	59	42	21	24	20	48%	72%
Māori	4	11	3	7	1	3	1	2	75%	73%
Pacific Peoples	1		1		1		1	0	0%	
Asian	1	2	1	2	0	0	0	0	100%	100%
Middle Eastern, Latin American/African	1		1		0		0	0	100%	
Other or no selection	7	7	4	7	3	2	1	0	57%	71%
Region										
Bay of Plenty	9	16	7	4	4	2	2	4	56%	87%
Nelson/Marlborough/ West Coast	14	5	11	4	9	1	6	2	36%	80%
Wellington	24	8	12	8	11	2	4	2	54%	75%
Canterbury	23	45	20	43	10	13	6	9	57%	71%
Hawke's Bay	6	14	3	8	4	4	2	2	33%	71%
Taranaki/Manawatu/ Whanganui	19	8	17	8	10	4	7	3	47%	50%
Total N	**95**	**96**	**70**	**75**	**47**	**26**	**27**	**22**	**51%**	**73%**

Quantitative outcome measures

To assess child, caregiver, and teacher outcomes, along with any long-term benefit of programme participation (evaluation questions 1-4), several measures were administered. This included re-administration of each of the questionnaires that were completed pre- and post-participation (excluding programme satisfaction questionnaires). Many of these measures (IYTSQ, IYPSQ, PSQ-P, PSQ-T) were designed specifically for the IY or IYA programmes, by the programme developer, Dr Carolyn Webster-Stratton meaning that they reflected programme content. However, there is limited public information in the peer-reviewed research literature on the psychometric properties of these measures. This precludes full understanding of their reliability and validity and sensitivity to change. A summary of the assessments administered at each phase is provided in Table 4. Further information about each measure and methods of data analysis, is provided in Appendices E and F.

Table 4. A summary of the assessments administered during the pre-, post- and ex-post evaluation phases, as completed by participants in the IYA-P and IYA-T programmes.

	Pre-participation	Post-participation	Ex-post participation
IYA-P measures	YC-PEM	YC-PEM	YC-PEM
	APSI	APSI	APSI
		PSQ-P	*DASS-21
			SDQ-P
			PedsQL
			IYPSQ
IYA-T measures	IYTSQ	IYTSQ	IYTSQ
		PSQ-P	SDQ-T
			PedsQL

** The DASS-21 was not administered for IYA-P Cohort 2 participants due to the strong correlation with APSI data demonstrated during the Cohort 1 evaluation.*

Qualitative measures and data analysis procedures

A set of interview questions for teachers and caregivers was designed to align with the IYA programme theory and evaluation questions. Following the Cohort 1 evaluation, the decision was made to modify some parent and teacher interview questions to ensure that that evaluation outcomes unable to be assessed by quantitative data alone, were adequately captured. A summary of interview procedures is provided in Appendix G. A copy of the interview questions for IYA-P and IYA-T Cohort 1 and 2 participants is provided in Appendices H-K.

Fourteen (13 mothers and one father) and 12 (eight mothers, four fathers) caregivers participated in an interview for Cohort 1 and 2, respectively, all with a child on the autism spectrum or who was going through the diagnostic process. This represents 23% and 12% of consenting pre-participation respondents for Cohort 1 and 2, respectively. The majority of respondents across cohorts were NZ European-Pākeha. For Cohort 1, 5/14 respondents were from the Bay of Plenty region, with the remaining respondents distributed across all regions except Auckland where there were no respondents. For Cohort 2, all but one respondent was from the Bay of Plenty or Wellington region.

Twenty-seven and 21 teachers participated in the interview for Cohort 1 and 2, respectively, and all were working with a child who had a diagnosis of autism or was suspected of being on the autism spectrum. This represents 28% and 22% of consenting pre-participation respondents for Cohort 1 and 2, respectively. All teachers were female, and 89% (n = 24) and 95% (n = 20) identified as NZ European-Pākeha for Cohort 1 and 2, respectively. The remaining participants identified as Māori, Pacific Peoples, Asian, or other. Generally speaking this reflects the demographic characteristics of teachers in early childhood education. Teacher respondents were relatively evenly distributed across regions.

The number of participants recruited from different ethnicities was considered insufficient to allow for meaningful comparisons in their qualitative comments to be made. However, where a relevant cultural perspective was shared during the interview, this response has been conveyed in the report. It was

also our intention to interview a selection of partial and non-completers of the IYA programme; however, the majority of respondents represented those who had completed the programme. All interviewees also completed the online assessments. For further information, see Tables 2 and 3.

EVALUATION OUTCOMES

A summary of the research measures and questions aligned with each of the evaluation questions is provided in Appendix L. The evaluation outcomes are presented in relation to each of the evaluation questions. In this evaluation, key variables were measured at three-time points – pre-, post-, and ex-post – and change was primarily assessed by reference to the baseline (pre) measure by comparing post-, and ex-post scores relative to pre-scores. The durability of any change detected by the pre-post comparison could subsequently be assessed by a post- to ex-post comparison.

Our interpretation of the findings across child, parent, and teacher outcomes is somewhat tempered by the lack of key psychometric data for some measures, thus constraining our confidence that the measures assess domains that map directly onto the stated evaluation outcomes. The limited amount of post- and ex-post data, heterogeneity of participants who consented to providing data, and participant attrition also limits the utility and generalisability of the data, and the strength of the conclusions that are able to be drawn. The limitations of the quantitative data are not able to be directly mitigated by the qualitative data that was collected.

To what extent did the IYA programme contribute toward increased engagement, emotional regulation and communication skills of young children demonstrating behaviours associated with autism? (Question 1)

This question addresses two components of the IYA theory. The first component proposes that parent participation in the IYA programme and the subsequent implementation of strategies that have been learnt would promote and enhance children's participation, engagement, interaction and inclusion, emotional regulation, and communication skills. The second theoretical component addressed within this question is that teacher participation and implementation of newly acquired tools and strategies would increase the participation, engagement, social interaction, inclusion, emotional regulation and communication skills of children on the autism spectrum, in the educational setting.

According to the theory of change proposed in the Ministry of Education Evaluation Framework, it was expected that teacher and parent participants would acquire skills, strategies, and behaviours that they would apply around the child. This would then result in secondary improvement in child outcomes. As such, it was expected that we may observe larger effects for proximal (parent and teacher) outcomes and smaller effects for more distal (child) outcomes. It is also important to note that engagement is considered a primary child outcome, as measured by the YC-PEM. Children's social interaction, emotional regulation, and communication skills, as assessed by the evaluation team, are considered secondary child outcomes.

Based on a comparison of the quantitative data across cohorts, the effect of participation in the IYA programme on child outcomes is considered to be 'adequate' but approaching 'very good' when qualitative data is considered (although this must be tempered bysample attrition across time-points and questions concerning the representativeness of those interviewed).

The YC-PEM suggests some positive effects of programme participation on children's engagement and participation in the home environment, although for some domains of measurement, the ESs were negligible. PSQ-P and PSQ-T data also suggests that caregivers and teachers perceived their children's self-regulation and emotional skills to have improved after participation in the programme. In the absence of a control group, and given the limited number of questionnaire items pertaining to these specific outcomes, it is possible that this reflects a halo effect resulting from participation, rather than a direct effect of learning and experiences occurring during participation in the programme.

Teacher and caregiver interview responses suggest that programme participation had a positive effect on children's engagement and participation in the home and centre environment, particularly in terms of social interactions and confidence to participate in regular activities. More specifically, teacher and caregiver interview responses indicated that children now have some language to communicate their emotions and feelings. This, in turn, allows caregivers to guide the child through strategies (e.g., 'thermometer') to regulate their emotions. Qualitative data also suggests that some children's communication (verbal and non-verbal) was perceived to have improved post-participation.

A component of the evaluation was to evaluate the role of programme attendance on outcomes achieved. The limited variability in data due to overall high attendance across the two cohorts meant that it was not possible to conduct this analysis. Furthermore, as the SDQ, as selected by the evaluation team, was only administered during the ex-post phase, it is not possible to assess whether caregiver and teacher SDQ ratings changed as a result of programme participation. Additional, unintended programme benefits are discussed in relation to evaluation question four.

Child engagement (quantitative data)

Children's participation and engagement (YC-PEM)

The short- and long-term impact of the IYA programme on children's participation and engagement was measured by assessing change in post- and ex-post scores relative to pre-scores for items on the YC-PEM. This included the *percentage of home activities the child participates in*, the *frequency of children's participation at home*, the *average involvement of the child in home activities*, and the *percentage of activities where caregivers would like to see a change* in their child's participation. These outcomes are presented below in Tables 5 to 8.

Regarding the percentage of home activities the child participates in, improvement is reflected as an increase in mean percentages across phases. As seen in Table 5, there is little change in the mean pre-, post-, and ex-post ratings of the percentage of change in children's participation in home activities for Cohort 1 and Cohort 2. The mean change is no more than 6% from pre- to post-training. Change remains stable at the ex-post phase for Cohort 2, though there is a relapse back to pre-training levels at the ex-post evaluation phase for Cohort 1. Furthermore, there is no systematic change in the standard deviations (and hence in variability) nor in minimum and maximum scores across phases and cohorts, indicating that the data is stable. Negligible Cohen's *d* ES values (i.e., values in the range 0 - .3) confirm what is conventionally regarded as a small ES (≤.3) across phases for both cohorts indicating minimal change as a result of training.

Table 5. Mean, median, standard deviation and minimum and maximum scores for caregiver-reported YC-PEM pre-, post-, and ex-post ratings of the percentage of change in child participation in home activities.

YC-PEM Percentage of activities child participates in						
	Cohort 1			Cohort 2		
	Pre	Post	Ex-post	Pre	Post	Ex-post
N	60	50	18	43	42	20
Missing	0	10	42	0	1	23
Mean	81.3	87.1	80	86.7	90.0	91.1
Median	85.7	85.7	85.7	92.9	92.9	92.9
Standard deviation	17.7	15.8	18.5	13.7	10.5	11.6
Minimum	28.6	28.6	30.8	57.1	64.3	57.1
Maximum	100	100	100	100	100	100
Cohort 1 - pre-post = .27 [.067, .48]			*pre-expost = ~0*			
Cohort 2 – pre-post = .28 [.040, .51]			*pre-expost = .30 [-0.1, .7]*			*[=95% Confidence interval]*

Table 6 presents pre-, post-, and ex-post training data on caregiver-reported YC-PEM ratings of the frequency of children's participation in the home. Improvement is represented as an increase in mean

frequency scores over the three-time points. During pre-training, the mean rating is just on one scale rating point higher than the mid-point of the scale for Cohort 1. This increased to a mean of 5, 0.5 of a scale rating higher than the pre-training mean. In ES terms, this was a very small improvement in participation (~ one-third of an SD unit). The change in rating from post-training to ex-post was larger, taking the follow-up mean rating to 2.0 scale units above the scale mid-point, yielding an ES conventionally regarded as large (i.e., >.8).

Table 6. Mean, median, standard deviation and minimum and maximum scores for caregiver-reported YC-PEM pre-, post-, and ex-post ratings of the frequency of the child's participation at home.

Frequency of participation at home. Rating scale = 0 - 7						
	Cohort 1			Cohort 2		
	Pre	Post	Ex-post	Pre	Post	Ex-post
N	60	50	19	43	42	19
Missing	0	10	41	0	1	24
Mean	4.66	5.03	5.59	5.62	5.53	5.74
Median	4.79	5.29	5.71	5.57	5.62	5.75
Standard deviation	1.13	1.15	0.629	0.600	0.593	0.818
Minimum	1.64	1.57	4	3.57	3.90	3.50
Maximum	6.79	6.71	6.43	6.75	6.43	7.00
Cohort 1 - Cohen's d	*pre- post = .27 [.07, .48]*		*pre-expost = 1.3 [.53, 2]*			
Cohort 2 - Cohen's d	*pre- post = -.18 [-.48, .25]*		*pre-expost = .33 [-.3, .9]*			
[=95% Confidence interval]						

Lakens (2013) stresses that ES measures such as Cohen's *d* must be interpreted in terms of what the magnitude of the change indicates with regard to the specific units of measurement. So while it is positive that the pre-training rating is on the positive side of the mid-point of the scale and that the increments indicate improvement, the practical magnitude of the change is relatively small, and the behaviours being rated are still, on average, occurring less than once/day (based on the rating categories of the YC-PEM). A further point to note is that the assumptions underlying Cohen's d_{av} (the ES used for pre-post analyses) require that the standard deviations of the measure are essentially the same at the two-time points. For the pre- and post- measures this assumption holds; for the follow-up measure it does not. In such cases, it might be recommended that Glass' delta (Δ) be calculated as a more conservative ES estimate. For this data, this Glass' Δ = 0.8, still conventionally large, but considerably smaller than the corresponding Cohen's $d_{av.}$ Thus, while these results are encouraging, in that they indicate a positive effect of participating in training, caution should be exercised in interpreting the results, not least because the improvement in frequency ratings evident at follow-up is based on data from only the 19/60 caregivers who completed the follow-up assessment and this might well be positively biased.

For Cohort 2, the pre-training mean is two scale rating points higher than the mid-point of the scale indicating a higher frequency of participation in the home during pre-training, when compared to Cohort 1. There is no evidence of any change from pre- to post-training for this variable, though there is a small effect of training from pre- to ex-post on this variable (*d* = .33).

Table 7 reports pre-, post-, and ex-post training data on caregiver-reported YC-PEM ratings of the average involvement of the child in home activities. On a 1-5 rating scale, the mid-point is 3. For Cohort 1, the pre-training average is below this point, suggesting relatively low involvement in home activities before training. On average, there is a small increase in ratings to an average of 3, and this does not change at follow-up. The ES for the training is in the small to medium range, but the 95% CI indicates that it is likely to be > 0, even given a worst-case scenario for the effect of training. However, given that the improvement in the average rating is ~ one-third of a rating unit, this change must be regarded as very small and as having few implications for judging the benefits of training either way.

For Cohort 2, the pre-training average is slightly above the midpoint, suggesting slightly higher involvement in the home pre-training, compared to Cohort 1. There is negligible change in this measure over assessment periods for Cohort 2.

Table 7 Mean, median, standard deviation and minimum and maximum scores for caregiver-reported YC-PEM pre-, post-, and ex-post ratings of the average involvement of the child in home activities.

Average involvement in home activities. Rating scale 1-5						
	Cohort 1			Cohort 2		
	Pre	Post	Ex-post	Pre	Post	Ex-post
N	60	50	19	43	42	19
Missing	0	10	41	0	1	24
Mean	2.66	3.02	3.09	3.12	3.27	3.44
Median	2.71	3	3.43	3.07	3.25	3.36
Standard deviation	0.741	0.8	0.997	0.681	0.716	0.807
Minimum	0.93	1.14	1.29	1.64	1.71	2.29
Maximum	4.43	4.64	5	4.36	4.57	5.00
Cohort 1 - Cohen's d pre-post = .4 [.2, .6]			*pre-ex-post no change*			
Cohort 2 – Cohen's d pre-post = .2 [-.04, .5]			*pre-ex-post .3 [-0.3, .9] [=95% Confidence interval]*			

Table 8 reports pre-, post-, and ex-post training data on caregiver-reported YC-PEM ratings of the percentage of activities where caregivers desire a change in their child's participation. A positive outcome in this instance is reflected as a decrease in the percentage. For Cohort 1, at pre-participation, change was desired for 76.2% of target activities, and this ranged from just below one third to 100%. This changed very little from the pre- to post-training phases. There was a very slight reduction in the desired change percentage from pre- to post-training of ~4%, and the associated ES was small and not statistically significantly different from zero. However, at follow-up, comparison with the pre-measure yields a 13% reduction and a medium ES.

For Cohort 2, at pre-participation, change was desired for 71.8% of activities, slightly lower than the Cohort 1 average. There is a 9% reduction in this measure from pre- to post-training, and the associated ES (*d* = -.32), is conventionally regarded as small. There was an 8% reduction across pre- to ex-post phases. This suggests a modest positive long-term beneficial effect of training on caregivers' perceptions of the percentage of activities where they would like to see change. This conclusion is tempered by the fact that the follow-up data were reported by 19/60 and 19/43 caregivers for Cohorts 1 and 2, respectively. The possibility that this change reflects a change in parents' expectations should also be considered.

Table 8. Mean, median, standard deviation and minimum and maximum caregiver-reported YC-PEM pre-, post-, and ex-post ratings of the percentage of activities where change is desired by caregivers.

Percent of target activities for which changed is desired. Σ items scored "yes"/#items x 100						
	Cohort 1			Cohort 2		
	Pre	Post	Ex-post	Pre	Post	Ex-post
N	60	50	19	43	42	19
Missing	0	10	42	0	1	24
Mean	76.2	71.9	63.5	71.8	62.8	63.9
Median	75	78.6	64.3	85.7	71.4	71.4
Standard deviation	18.5	22.1	22	25.4	31.1	31.6
Minimum	28.6	28.6	28.6	14.3	0.00	0.00
Maximum	100	100	100	100	100	100
Cohort 1 - Cohen's d pre-post = -.26 [-.6, .08]			*Pre-ex-post = -.5 [-.98, -.005]*			
Cohort 2 – Cohen's d pre-post = -.32 [-.6, -.-4]			*pre-ex-post = -.36 [-.7, .02]*			
[=95% Confidence interval]						

Secondary child outcomes: social, emotional, and self-regulation skills (PSQ-P and PSQ-T data)

Caregiver and teacher responses to items on the PSQ-P (items 1-3) and PSQ-T (items 4-6) that specifically related to child outcomes were examined. These items are assessed immediately upon completion of the IYA programme, within this overall training satisfaction questionnaire, and ask caregivers and teachers to rate change in relation to children's social and emotional, self-regulation, and imaginary play skills immediately post-participation in the programme. For example, caregivers are asked to rate their response to the following statement: "*My child's social and emotional skills are",* according to a seven-point scale (1 = considerably worse; 7 = greatly improved). Data for this measure was anonymous, as it was not collected for programme evaluation purposes. This meant it was not possible to conduct correlational analyses, nor could it be used to assess change. Instead, descriptive data (i.e., mean, median, standard deviation and range) and frequency distributions are presented. It should also be noted that the psychometric properties of this measure have not been reported in the literature.

As indicated in Table 9, mean post-participation caregiver ratings of the level of improvement in self-regulation and imaginary play and social and emotional skills reflect the general caregiver perceptions, replicated across cohorts, that their child's skills in these areas 'improved' post-participation.

Table 9. Mean, median, standard deviation, range of ratings provided, and minimum and maximum possible scores for caregiver-reported PSQ-P child outcomes post-participation.

	Self-regulation and imaginary play		**Social and emotional skills**	
	Cohort 1	**Cohort 2**	**Cohort 1**	**Cohort 2**
N	50	42	50	42
Mean	6.06	6.10	6.34	6.31
Median	6	6	6	6
SD	0.98	1.04	0.67	0.65
Range	4-7	1-7	4-7	5-7
Minimum	1	1	1	1
Maximum	7	7	7	7

This finding is similarly reflected in the Figures 1a and 1b, whereby the majority of respondents rated their children as having 'improved' or 'greatly improved' in areas of social and emotional skills, across cohorts. While still skewed toward the upper end of the scale, self-regulation ratings were slightly more variable, whereby a greater number of participants indicated that self-regulation skills were 'the same' or 'slightly improved' post-training. Importantly, no participants rated their children as having experienced deterioration in skills across these three dimensions.

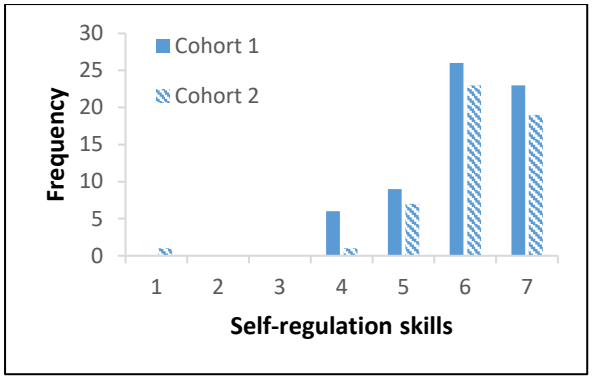

Figure 1a. The frequency of PSQ-P post-participation ratings of change in self-regulation and imaginary play skills.

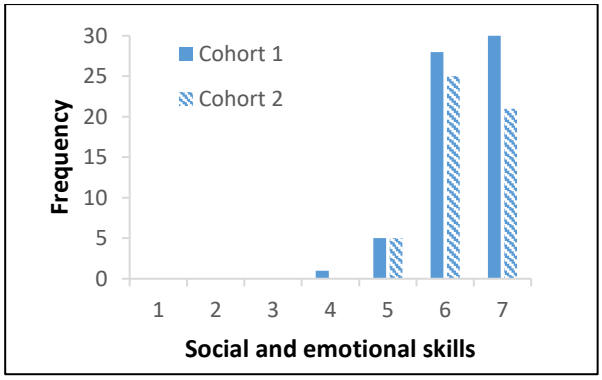

Figure 1b. The frequency of PSQ-P post-participation ratings of change in social and emotional skills.

Table 10 provides mean post-participation teacher ratings of the level of improvement in PSQ-T scores across dimensions. This shows teacher ratings of self-regulation and imaginary play and social and emotional skills were 6.3 (*SD* = 0.6) and 6.12 (*SD* = 0.77), respectively, for Cohort 1, and 6.3 (*SD* = 0.58) and 6.20 (*SD* = 0.73) for Cohort 2, respectively. Findings were remarkably similar across cohorts, in each instance indicating that the majority of teachers rated children's skills in these areas as being 'improved' (6) post-training. A range of 4-7 and 5-7 also reflects that no teachers reported a deterioration in skills across cohorts.

Table 10. Mean, median, standard deviation, range of ratings provided, and minimum and maximum possible scores for caregiver-reported PSQ-T child outcomes post-participation.

	Self-regulation and imaginary play		**Social and emotional skills**	
	Cohort 1	**Cohort 2**	**Cohort 1**	**Cohort 2**
N	70	75	70	75
Mean	6.30	6.30	6.12	6.20
Median	6	6	6	6
SD	0.6	0.58	0.77	0.73
Range	5-7	5-7	4-7	4-7
Minimum	1	1	1	1
Maximum	7	7	7	7

This finding is similarly reflected in the Figures 2a and 2b, wherein teacher ratings are predominantly aligned to the upper end of the scale across all dimensions, for each cohort. As depicted below, the majority of teachers rated children's self-regulation and social and emotional skills as either 'slightly improved' (5), 'improved' (6) or 'greatly improved' (7). In a small number of instances, the response was neutral (4).

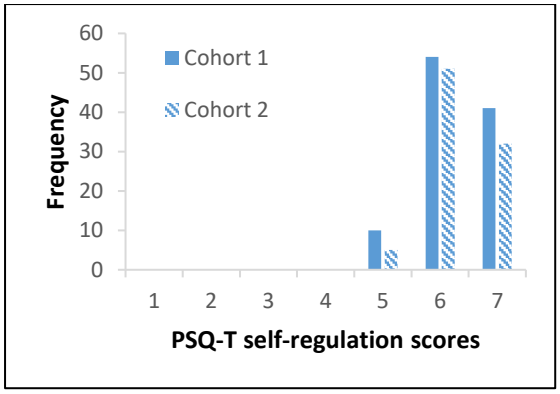

Figure 2a. The frequency of PSQ-T post-participation ratings of change in self-regulation and imaginary play skills

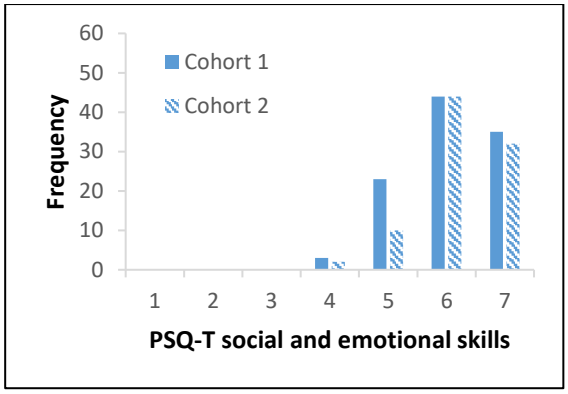

Figure 2b. The frequency of PSQ-T post-participation ratings of change in social and emotional skills

Emotional regulation and behaviour (caregiver-reported SDQ data)

SDQ data was collected ex-post primarily as a snap-shot measure of children's interaction, engagement, and emotional problems. However, data on the additional SDQ subscales, while not directly targeted within the IYA programme, has been reported as it has important implications for children's participation and inclusion in both the home as well as educational contexts (e.g., prosocial behaviour, peer problems).

Table 11 presents caregiver-reported ex-post subscale and total scores for the SDQ. Based on SDQ scoring classifications and conventions for children in this age range, Cohorts 1 and 2 differed in classification of hyperactivity and conduct problem scores. In both instances, Cohort 1 participants were in the normal range and Cohort 2 participants were within the borderline range for hyperactivity and conduct problem scores, respectively. Conversely, Cohort 1 participants scored in the borderline range and Cohort 2 in the normal range for prosocial behaviour. Total scores were in the abnormal range for Cohort 1 and the borderline range for Cohort 2. For both Cohorts, emotional problems were in the normal range and peer problems were in the abnormal range.

Table 11. Mean, median, standard deviation and minimum and maximum caregiver-reported ex-post data for the Strengths and Difficulties Questionnaire

	Emotional		Conduct		Hyperactivity		Peer		Prosocial		Total	
Cohort	1	2	1	2	1	2	1	2	1	2	1	2
N	20	26	20	26	20	26	20	26	20	26	20	26
Mean	3.35	2.65	3.5	4.00	3.95	5.60	6.55	4.30	5.15	4.70	19.1	16.6
Median	2.5	2.50	3	4.00	3	5.00	7	4.50	5.5	5.00	19.5	17.0
SD	2.92	1.81	2.14	2.18	1.93	3.05	2.58	1.69	2.41	2.30	6.04	6.05
Range	0-10	0-6	1-8	0-8	2-9	2-10	1-10	1-7	0-8	0-9	9-32	6-28

Figures 3a to 3f display the frequency distribution of the caregiver-reported ex-post SDQ subscale and total scores. As indicated, caregiver-reported total SDQ scores during ex-post training are somewhat normally distributed with the majority of participant's total scores within the abnormal range for both cohorts. Emotional problems, conduct problems, peer problems, and prosocial behaviour scores are similarly distributed across cohorts. The majority of scores were within the normal or borderline range for emotional problems; the borderline to clinical range for conduct problems and

prosocial behaviour; and predominantly in the clinical range for peer problems. By contrast, Cohort 1 hyperactivity scores were relatively evenly distributed across ranges, while Cohort 2 scores were distributed toward the higher end of the scale, predominantly in the clinical range.

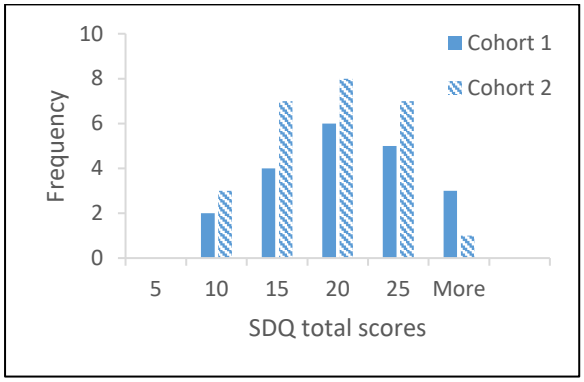

Figure 3a. Caregiver-reported SDQ total scores, ex-post.

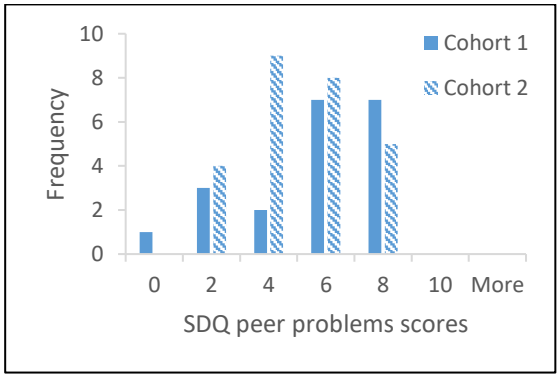

Figure 3d. Caregiver-reported SDQ peer problems scores, ex-post

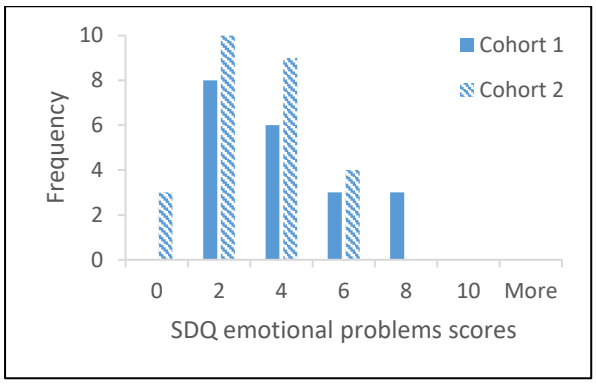

Figure 3b. Caregiver-reported SDQ emotional problems scores, ex-post.

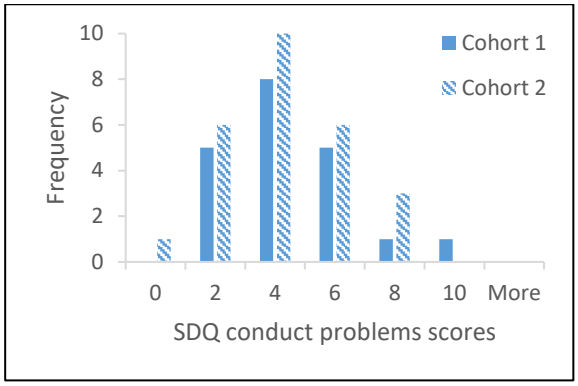

Figure 3e. Caregiver-reported SDQ conduct problems scores, ex-post.

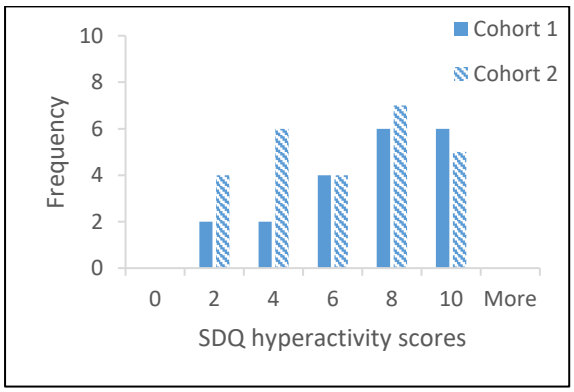

Figure 3c. Caregiver-reported SDQ hyperactivity scores, ex-post.

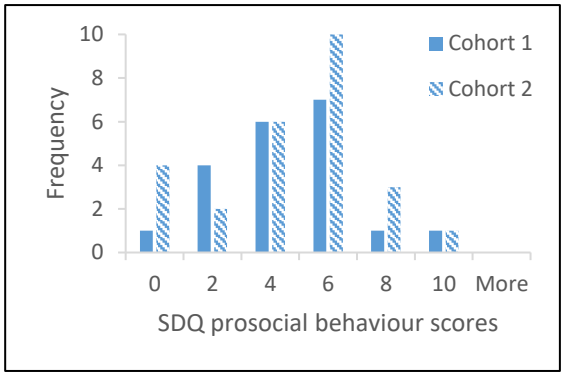

Figure 3f. Caregiver-reported SDQ pro-social behaviour scores, ex-post.

Emotional regulation and behaviour (teacher-reported SDQ data)

Table 12 presents teacher reported ex-post responses to the SDQ. This shows that for both cohorts mean emotional scores are in the normal range, mean peer problems and prosocial behaviour scores are in the abnormal range,and total scores are in the borderline range for both cohorts. Cohorts 1 and 2 differed slightly for mean conduct and hyperactivity scores, in each case Cohort 1 scores falling in the normal range and Cohort 2 scores in the borderline range.

Table 12. Mean, median, standard deviation and minimum and maximum teacher-reported ex-post data for the Strengths and Difficulties Questionnaire

	Emotional		Conduct		Hyperactivity		Peer		Prosocial		Total	
Cohort	1	2	1	2	1	2	1	2	1	2	1	2
N	46	37	46	37	46	37	46	37	46	37	46	37
Mean	2.54	1.78	3.33	2.93	5.93	6.41	4.96	4.00	3.28	3.26	16.7	15
Median	2	1	3	3	6	7	5	4	3	3	16	15
SD	1.88	1.69	2.37	2.48	2.63	2.93	1.7	1.88	2.26	2.55	5.91	5.67
Range	0-8	0-7	0-9	0-9	1-10	1-10	1-8	0-7	0-9	0-9	7-30	5-26

Frequency distributions for teacher-reported ratings on the SDQ are reported in Figures 4a to 4f. As indicated, the distribution of scores is remarkably similar across both cohorts. Emotional and prosocial behaviour scores are distributed toward the lower end of the scale and the majority of ratings are within the normal range at the ex-post time point, and the conduct problem scores most commonly fall in the normal to low-end of the abnormal range. The exception is hyperactivity problem scores wherein for Cohort 1, scores are reasonably evenly distributed across ratings indicating high variability in the levels of this problem behaviour, though for Cohort 2, scores mostly fall within the borderline to abnormal range. Peer problems scores show a relatively normal distribution, with the majority of participants scoring in the abnormal range. This measure was not administered pre- or post-training and it is not possible to determine whether SDQ scores changed as a result of training.

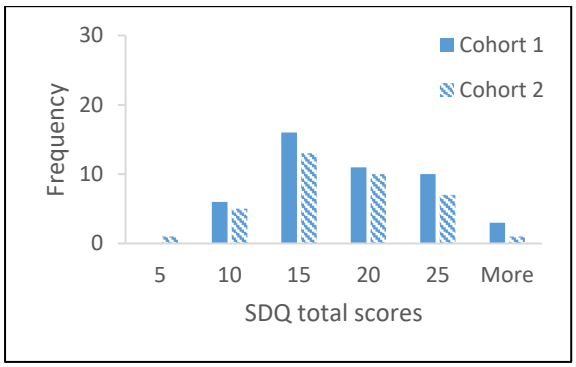

Figure 4a. Teacher-reported SDQ total problems scores, ex-post.

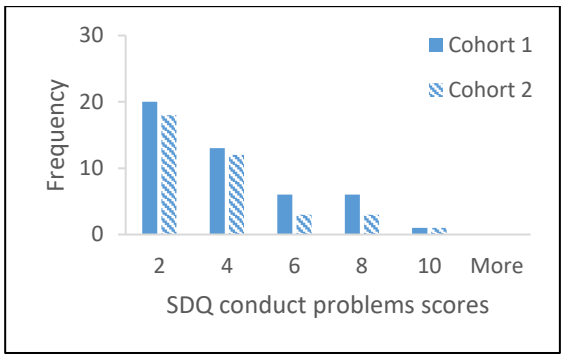

Figure 4b. Teacher-reported SDQ conduct problems scores, ex-post

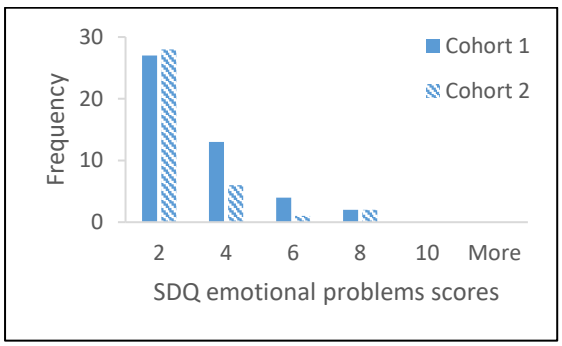

Figure 4c. Teacher-reported SDQ emotional problems scores, ex-post.

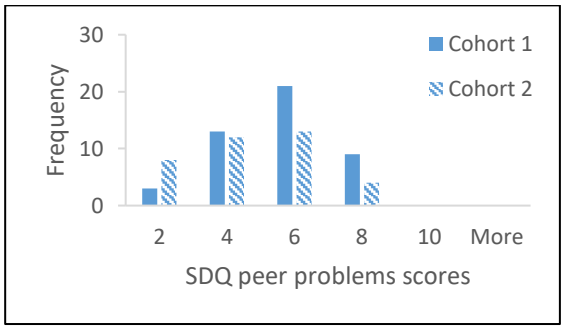

Figure 4d. Teacher-reported SDQ peer problems scores, ex-post.

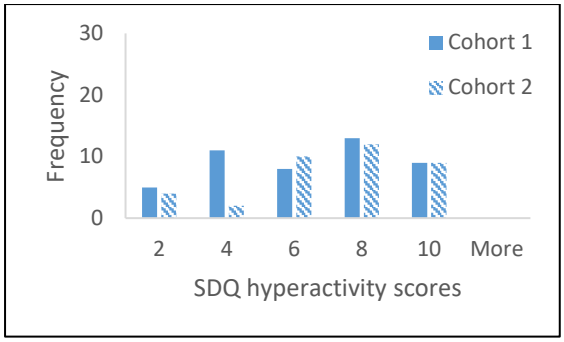

Figure 4e. Teacher-reported SDQ hyperactivity problems scores, ex-post.

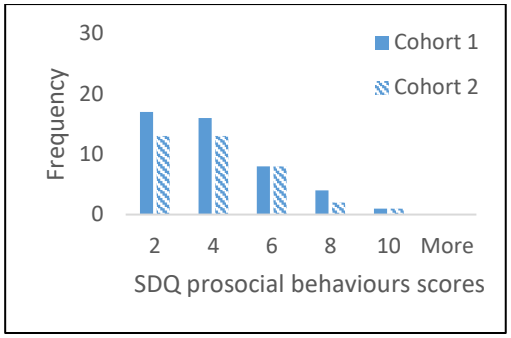

Figure 4f. Teacher-reported SDQ prosocial behaviour scores, ex-post

Child outcomes: engagement, emotional regulation and communication (qualitative data)

The following section describes the interview responses from caregivers and teachers of Cohort 1 and 2 regarding the impact of the IYA programme on the engagement, emotional regulation, communication skills, and wellbeing of children. The specific questions focused on the changes caregivers and teachers have noticed in the child(ren) since completing the IYA programme and whether caregivers and teachers learnt any new strategies as a result of their participation in the IYA programme. This section also describes whether caregiver and teacher participation in the IYA programme has contributed toward any change in children's participation, inclusion and attendance. The key themes are summarised under each of the four outcome areas.

The impact of IYA on children's engagement with caregivers, teachers, and other children

> *"He never used to join the mat times but now he is the first one to join everything" (Cohort 1: P56D).*

The majority of caregivers (Cohort 1: *n* = 10; Cohort 2: *n* = 8) and teachers (Cohort 1: *n* = 24; Cohort 2: *n* = 19) who were interviewed reported that participation in the IYA programme improved the child's engagement with them and others. Teachers from both cohorts described increased interaction with others as the most notable outcome of using the IYA strategies. They described an improvement in some children's eye-contact, leading to an increase in their communication and engagement with teachers and peers.

> *"When we're talking to [*him*], [he]is actually looking up and looking at us, not looking to the side or looking at the floor, or looking anywhere but at the person with [him]. [He is] actually engaging and is doing it to the other children as well" (Cohort 1: T114C).*

> *"Communicates well with his sister and sometimes he will even read him a book. They cuddle really nicely and they have a nice relationship now. Playing games with us, throwing ball and that sort of stuff". (Cohort 2: P34B)*

> *"She is interacting with other children a lot more. She still has quite a small peer group, but she's definitely making eye contact, she is engaging communication, she's using children's names which she didn't do at the beginning". (Cohort 1: T94F)*

An increase in interaction with others also brought about greater social skills and new friendships between the child with ASD and their peers. Budding friendships and positive peer interactions were reported by teachers and caregivers from both cohorts and was considered a positive outcome of the IYA programme.

> *"One of the big things is that he actually made a friend at school. That is something that is really really hard and he had a play date and he talks about it like "this is my friend!" so that was a very big diffrence". (Cohort 2: P75W)*

"He has since developed another wee friendship on the side of that. He's definitely interested in other children and being friends with them". (Cohort 2: T55C)

Several caregivers (Cohort 1: *n* = 5; Cohort 2: *n* = 4) and teachers (Cohort 1: *n* = 9; Cohort 2: *n* = 7) described increases in their child's participation and engagement in small and large group activities. They also described that children were more curious and interested in participating in a range of activities whereas prior to the IYA strategies being implemented (e.g. child's spotlight, following children's interests), children had narrow interests and spent the majority of their time engaged in repetitive behaviours. One parent from cohort 2 described her son's recent interest in music, stating:

"He has just recently actively participate in action songs like open shut them. Previously, he would listen passively and you weren't even sure if he was registering it. He will now participate with hand actions. Not as well as other child of the same age but it is a huge achievement for him". (Cohort 2: P16T)

"He used to come in and be quite particular about lining up farm animals or lining up the trains. We now see him move into the family area, see him building huts and covering himself with material." (Cohort 1: T79H)

Several teachers from both cohorts also shared examples of children's engagement and participation in new activities. One teacher described the progress a child had made exploring the early childhood environment. Before the teacher implemented IYA strategies, the child was reported to often stand in one spot, refusing to engage with teachers and peers and to participate in activities. Since implementing IYA strategies to promote the child's engagement and inclusion, the child now moves freely around the room and outdoor space, exploring his environment and engaging in a range of activities. Some teachers described the changes in the type of play they observed in the child, going from solitary to parallel play. One teacher described a child who was starting to engage with larger groups of children and showing interest in playing alongside them. Prior to the teacher participating in the IYA programme, the child preferred to play independently and would become overwhelmed by larger play groups.

"…he would engage my hand to stop spinning the wheel. Still no eye contact but he'd push my hand down. It was very exciting because had never done that before". (Cohort 2: T58C)

Some caregivers spoke about the improvements in their child's involvement and engagement in day-to-day activities at home and the early childhood centre or school. They reported that their child was attending the early childhood centre or school for longer days. They also said they have noticed an increase in their child's confidence to participate and they were excited to see their child engaged and included in the same activities as their peers.

"Basically before all he was doing was getting into mischief. Now he will participate like having dinner at the table with us. He gets dressed everyday whereas before I had to do it." (Cohort 2: P34B)

Not all caregivers (Cohort 1: *n* = 2; Cohort 2: *n* = 2) and teachers (Cohort 1: *n* = 3; Cohort 2: *n*= 4) saw a significant increase in their child's participation and engagement since the IYA programme. However, the majority indicated some progress in eye-contact, non-verbal gestures (e.g., taking the adults hand), and engaged interest in a variety of activities since caregivers and teachers have started implementing the IYA strategies. These caregivers and teachers indicated that the child's progress was likely the result of an accumulation of several interventions and programmes (e.g., speech therapy, behaviour workshops provided by the MoE), not solely the IYA programme.

The impact of IYA on children's emotional regulation

The impact of IYA strategies in improving children's emotional regulation was described by most of the caregivers (Cohort 1: *n* = 9; Cohort 2: *n* = 5) and teachers (Cohort 1: *n* = 19; Cohort 2: *n* = 15) interviewed. Caregivers and teachers from both cohorts described IYA strategies such as emotional coaching strategies to help the child understand how they are feeling and how to react appropriately.

"He used to just bash people including me. Now he will stand there and clench his fist and say "Mummy, Mummy I am really angry right now." Then we talk about it. We will talk about how to calm down and what we need to do to calm down". (Cohort 1: P10H)

They reported that these strategies have improved their child's ability to regulate their emotions and seek help from their teacher or caregiver.

"He will take himself away and you will hear him talk to himself and will say "come on, come on". And then he will come back and you can talk to him about what happened and he will share how he is feeling and why he got upset." (Cohort 2: T20T)

Some caregivers and teachers from Cohort 2 spoke of children engaging in fewer meltdowns because they had the skills to self-regulate and seek the support of an adult.

"Back when I did the course she will have quite big meltdowns but now they are lessening. Now when she is feeling upset she will come to a teacher for a cuddle." (Cohort 2: T52C)

"He really responded to the puppet when he was frustrated, Tommy T-Rex going into his shell and taking a few deep breathes. That helps him to settle himself and he will take it away and pet it if he is feeling stressed out. He is very high functioning but very emotional and can be very destructive." (Cohort 2: T54C)

Some of the specific strategies that caregivers and teachers for both cohorts have implemented to improve children's emotional regulation include relaxation techniques and the calm down thermometer, where the child labels their feelings using colours. The caregiver or teacher then coaches the child to use strategies to regulate their feelings. For instance, P52C, a caregiver from Cohort 1, describes that her son now requests to blow out the candles when he is feeling anxious or angry. Other caregivers reported that their child is engaging in less self-injurious and harmful behaviours when stressed or excited because they have other strategies to effectively and appropriately express their emotions.

For several caregivers and teachers in both cohorts, the IYA strategies had minimal impact on children's emotional regulation. In these instances, children already had the skills to regulate their emotions and behaviours or they had limited communication leading to frustration and anger. Some caregivers in both cohorts indicated that emotional regulation was "a work in progress." One caregiver from cohort 2, stated that

"*if he can't figure out something he would yell and scream and throw a fit. It depends on him in the moment, sometimes he is good, sometimes he is not. It is … a work in progress" (P76W)*

The impact of IYA on children's communication

"We know how to respond to her and she is learning how to respond to us at the same time". (Cohort 1: T86F)

The majority of caregivers (Cohort 1: *n* = 11; Cohort 2: *n* = 8) and teachers (Cohort 1: *n* = 19; Cohort 2: *n* = 21) reported that participation in IYA training improved their child's ability to communicate with them. The IYA programme provided caregivers and teachers with strategies to understand the verbal and non-verbal ways in which children communicate. Overall, the observations shared by caregivers and teachers in Cohort 1 and Cohort 2 indicate that the IYA programme has positively impacted on children's communication with associated impacts on children's self-regulation, engagement and participation in social activities with other peers and adults, improved eye contact and interactions.

"She is engaging communication, she's using children's names which she didn't do at the beginning, she is actually doing well with greetings and regular routines in the kindergarten without having to be prompted. She had to be prompted a lot at the start." (Cohort 1: T94F)

"Now she will take your hand and bring you to places. Like if she wants a push on the swing she will take you there now. She give lots of eye contact. She knows her name. She will say mom, dad, and pen, there are a few things she will say now." (Cohort 2: T52C)

Many caregivers and teachers have implemented visuals to communicate with their child about daily routines and activities. T19T, a teacher from Cohort 2 described a Now and Then board she has been using with a child, with success, to communicate daily routines such as washing hands and going to the toilet. The use of these visuals has improved the child's compliance in following directions because he "understands the routine and what is required of him." Some caregivers and teachers from Cohort 1 described that some children independently use visuals to communicate their needs with caregivers, reducing the child's frustration as they now have strategies to communicate with others.

Other IYA strategies such as getting into the child's spotlight, social coaching and narration, and engaging the child's interest have been effective in increasing children's verbal and non-verbal language and communication. For instance, some caregivers and teachers spoke about the effectiveness of getting the child's attention (i.e., spotlighting) on the child's ability to interact and communicate with caregivers and teachers. Several caregivers also spoke about the effectiveness of following the child's lead as this increased the reciprocal interaction between child and caregiver, making the caregiver more aware of the verbal and non-verbal cues that the child was using to communicate with caregivers.

"*Yes, because he is non-verbal, I think the biggest thing was that I was expecting him to just understand me. Whereas I learned that even eye contact is communication. Which I didn't realise at that time. I was like "oh he didn't respond" I wasn't sure how to put it across to him to make him respond. I ended up taking him to the course a few times. They said to me "well, he is actually looking at you, he is actually communicating and giving you eye contact". I was like "oh I didn't think of that to be a form of communication. That was enough for him because of where he is at.*" (Cohort 2: P53A)

Caregivers and parents from both cohorts described excitement by the fact that their child was able to start communicating with them and other familiar adults and peers. The consistent use of IYA strategies has allowed several caregivers and parents in Cohort 1 and Cohort 2 to observe significant progress in the domain of communication suggesting that IYA has had a positive impact on caregivers, teachers and children.

"I love the sections where they were telling us how to get down and play the right way so that we can interact. My child started opening up a lot after that. She started bringing her drawings to me and telling me what it was. This has not happened before the IYA." (Cohort 2: P64W)

"She is engaging in communication, she's using children's names which she didn't do at the beginning, she is actually doing well with greetings and regular routines in the kindergarten without having to be prompted. She had to be prompted a lot at the start." (Cohort 1: T94F)

His speech really flourished at that point of time. He is talking more, he is using more words. He is able to get his voice heard by using his speech as well as gestures he was already using. He is also started calling me mommy a couple of months ago and it was amazing. So I have a bottle of champagne for about 4 years in the pantry, that got popped open. (Cohort 2: P70W)

"This target child had no communication from the beginning of the course. By using the strategies over a period of time, she was starting to repeat words and even use some sentences occasionally. She went from non-verbal to seeing what the power of words could be." (Cohort 2: T53C)

The majority of teachers from Cohort 1 (except for two) and all of the teachers in Cohort 2 indicated that the IYA programme had a positive impact on children's communication. In contrast, two caregivers from Cohort 1 and four caregivers from Cohort 2 did not think that IYA strategies had improved their child's communication. They suggested several reasons for this including the strategies being beyond the current development of their child, the child already had good communication prior to caregivers completing the IYA programme, and other professionals such as SLTs were working with the child.

To what extent did participation in the IYA-P programme contribute toward the increased wellbeing and coping skills of caregivers enabling them to better support their child? (Question 2)

The short and long-term impacts of the IYA programme on the wellbeing and coping skills of caregivers were evaluated to test the theory that participation in the IYA programme would enhance the confidence, coping skills and wellbeing of caregivers of children on the autism spectrum. This theoretical outcome was tested by assessing caregiver stress, as measured by the APSI total scores at post- and ex-post time points. Caregiver DASS-21 (Cohort 1 only), IYPSQ ex-post scores and selected PSQ post-training scores are also presented. This data gives a snapshot view of caregivers' wellbeing at the follow-up (ex-post) time point for participating caregivers. Interview data was also collected in relation to this evaluation question (see Appendices H-K).

Overall, the impact of programme participation on caregiver wellbeing, specifically caregiver stress, is considered to be 'very good'. APSI data along with interview reports indicate that participation in the programme had a positive effect on caregiver stress levels and that these effects were maintained at follow-up. However, caregiver stress only assesses one dimension of caregiver coping, hence the administration of the DASS-21 for Cohort 1. Unfortunately, the small number of respondents for the DASS-21 meant that it was not possible to determine the impact of participation in the IYA-P programme on caregiver reported ratings of depression and anxiety. The high rates of convergent validity between the DASS-21 and APSI for Cohort 1, meant there was little additional benefit in administering this measure for Cohort 2.

Taken prima facie, PSQ-P data suggests that participation in the IYA-P programme resulted in caregivers perceiving improvements in their use of skills taught during the programme and achievement of their goals. This is similarly reported during interviews where many caregivers reported that participation in the IYA programme had a positive impact on their sense of confidence and self-efficacy. They felt equipped with the knowledge and practical strategies to support their child's developmental success. Limitations associated with the IYPSQ data means that it is not possible to provide a reliable interpretation of this data. As such, the conclusions that can be drawn about the impact of the IYA programme on caregivers' sense of confidence and competence are that it is 'very good'. Given the limitations previously described, this is predominantly based on qualitative data.

Caregiver outcomes: wellbeing and coping skills (quantitative data)

Caregiver wellbeing and coping skills (APSI data)

Caregiver stress was measured using the APSI. Normative data are supplied in Silva and Schalock (2012) for families with a child on the autism spectrum (N = 107), families with a child with other developmental disabilities (N = 28) and typically developing children (N = 139), 6 years or younger. It is not clear how the Likert scale was coded by Silva and Schalock (2012), but the data provided for this evaluation is coded 1-5, yielding possible minimum and maximum scores of 13- 65. Silva and Schalock (2012) reported 'prevalence' data (in percentage terms) for the overall score and sub-scales (e.g., 'Core autism behaviours'; 'Social development') but not the mean or SD of the scale or sub-scales, limiting the possibility of comparing the present data with their data. Chronbach's alpha and test-retest reliability are satisfactory (α = .83; test-retest reliability = .88; both for the ASD sample).

Table 13 shows the number of caregivers who completed the APSI for Cohorts 1 and 2 and summarises key data at the pre-, post-, and ex-post training phases. For Cohort 1, only 10 caregivers

dropped out of participating at the post-training phase, however, only 20 (33% of pre-participation respondents) supplied data at the ex-post phase. For Cohort 2, 42 participants provide post-participation data (69% of pre-participation respondents) and 24 provided ex-post data (39% of pre-participation respondents).

Table 13. Number of caregivers completing the Autism Parent Stress Index (APSI), and mean, median, standard deviation and minimum and maximum scores at each study point for Cohort 1 and 2.

	Cohort 1			Cohort 2		
	Pre	Post	Ex-post	Pre	Post	Ex-post
N	60	50	20	61	42	24
Missing	0	10	40	0	19	37
Mean	20.9	14	15.5	17.6	14.0	13.9
Median	19	13.5	14.5	16	12.5	12.5
Standard deviation	9.39	6.79	8.17	8.97	6.52	7.42
Minimum	6	4	0	3	4	4
Maximum	49	31	32	46	30	33

Figure 5 shows the frequency distribution of APSI scores before and after training for Cohorts 1 and 2, for the caregivers who completed the measure at both time points. Figure 5 confirms the shift to lower stress scores following training evident in the mean data for each cohort. Notably, for both cohorts, training seems to have mostly reduced high scores while moderately increasing the number of low scores (≤10). The majority of caregivers reported stress levels in the range of 15 – 29, and the mean for Cohort 1 (21) and Cohort 2 (15) is below the mid-point of the APSI score range, suggesting that the caregivers in each sample were, on the whole, only mildly to moderately stressed, although, it should be noted, stress level categories have not been specified for this measure.

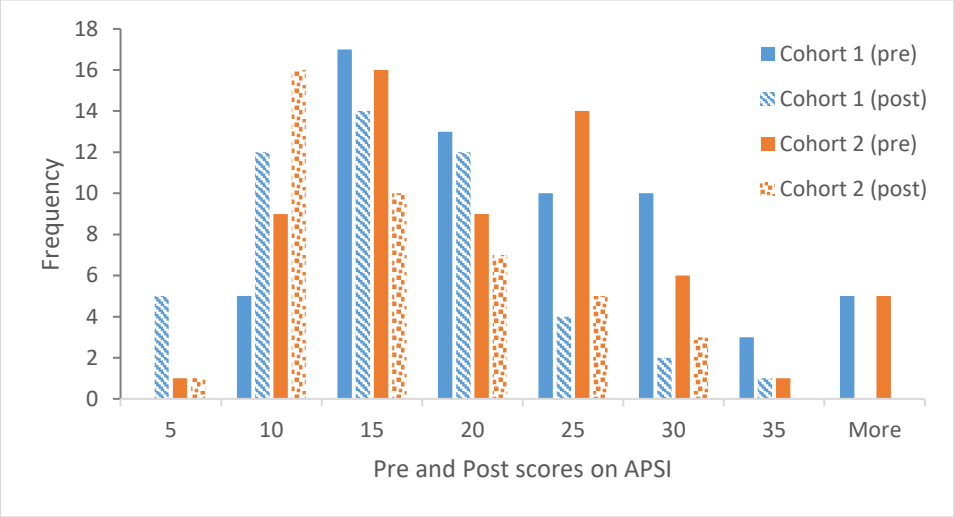

Figure 5. Frequency distribution of pre- and post-training APSI stress scores

The overall change in stress levels for the caregivers who supplied both pre- and post-training data is shown in Figures 6 and 7, for Cohorts 1 and 2 respectively. As explained (see Appendix E), if there has been little or no change in caregiver stress across time, the data points will lie around about the diagonal line of no change. If there has been a systematic improvement in APSI scores data points will tend to lie below the line, and deterioration is shown by points lying clearly above the line.

Figure 6 Panel A shows clearly that most caregivers reported either little change or a reduction in stress following training for Cohort 1; only a small number reported any increase. The Cohen's d_{av}

Effect Size (ES) of -.78 is just on the threshold of being conventionally considered a large ES (.8), and the 95% CI on *d* indicates that, taking a worst-case scenario where the true value of *d* is at the lower end of the CI, the ES is not zero, but in the small-medium range. The pattern does not change greatly for the 20 caregivers who supplied ex-post data (Figure 6 Panel B), although those who had pre-scores >30 seem now to have dropped out of the evaluation, even though their scores did reduce at post-treatment. The ES at follow-up is now in the moderate range, and might in the worst case be zero. The stability of scores at follow-up is further demonstrated in Figure 6 Panel C, which plots follow-up scores against post-treatment scores. The scores are dispersed to much of the same degree around the diagonal line of no change, and the ES = 0, consistent with the mean scores being equal at the two-time points.

As shown in Figure 7, these findings are replicated for Cohort 2 wherein, 83% (*n* = 35) of participants experienced a reduction or no change in levels of reported stress. The Cohen's d_{av} ES of -.51 is considered a moderate ES (.5), and the 95% CI on *d* indicates that, taking a worst-case scenario where the true value of *d* is at the lower end of the CI, the ES is not zero, but in the small-medium range. A moderate ES (-.45) is maintained for the 24 caregivers (57% of pre-participation respondents) who provided ex-post data (Figure 7 Panel B). Scores remain stable in Figure 7 Panel C, which plots follow-up scores against post-treatment scores. The scores are dispersed to much of the same degree around the diagonal line of no change, and the ES = 0, consistent with the mean scores being equal at the two-time points.

For both cohorts, the large majority of participants experience either a reduction or no change in stress levels, with very few experiencing an increase in stress. For participants who provided both post- and ex-post data their level of stress remained relatively stable relative to the stress level they reported at the end of participation in the programme.

The relationship between post- and ex-post participation APSI scores, and attendance, ethnicity, and region was explored by calculating point-biserial correlation coefficients. These correlations indicate the degree to which a classification variable (such as a code for ethnicity) accounts for variability in a continuous outcome variable, and, therefore, indicated the degree to which the classification variable is influencing the outcome variable. For both Cohort 1 and Cohort 2, the classification variables of region, attendance and ethnicity did not predict change in APSI scores.

Parental wellbeing and coping skills (Cohort 1 DASS-21 data)

Cohort 1, caregiver-reported DASS-21 data is presented in Table 14. This shows average depression, anxiety, and stress subscale scores were within the 'normal' range, ex-post. As this measure was not administered pre- or post-training, it is not possible to determine whether this represents a change in DASS-21 scores as a result of training.

Table 14 Mean, median, standard deviation and minimum and maximum scores for caregiver-reported DASS-21 subscale and total scores, ex-post (N=19).

	Depression	Anxiety	Stress	Total
N	19	19	19	19
Mean	4.11	1.95	6.84	12.9
Median	4	1	7	13
SD	3.46	2.63	2.65	6.28
Range	0-16	0-11	3-11	5-28

Cohort 1 APSI data

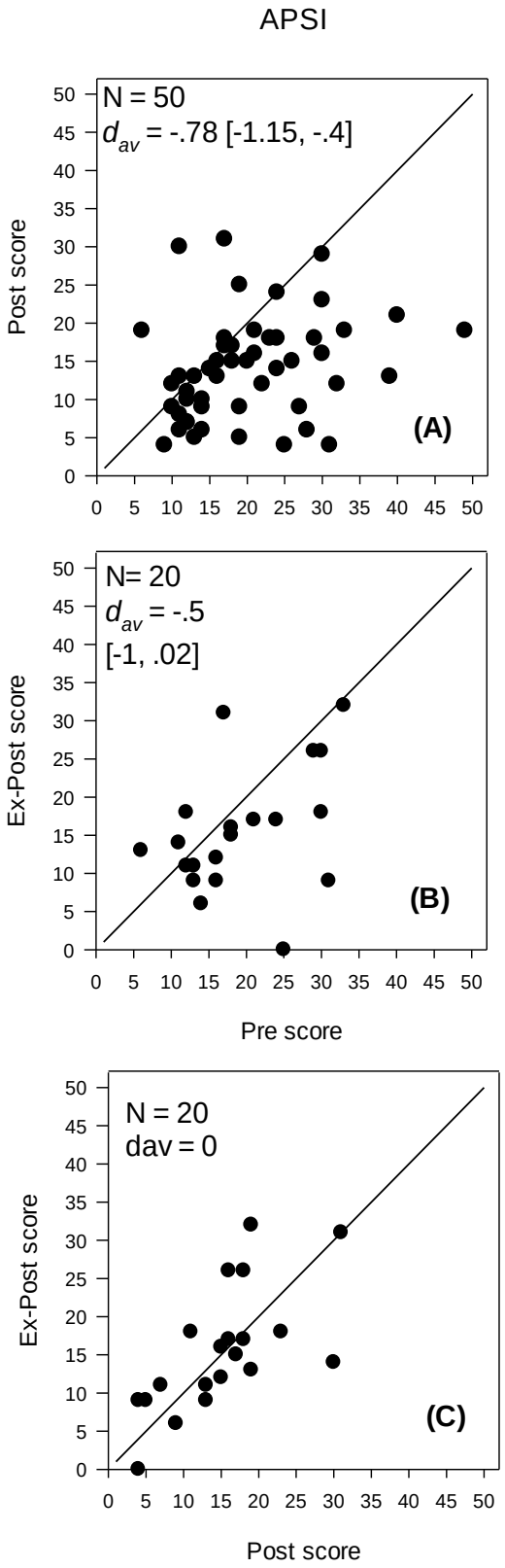

Figure 6 Modified Brinley Plot showing change in individual caregiver APSI scores at post-training (A) and follow-up (Ex-post, B) relative to pre-training scores, and follow-up scores relative to post-training scores (C) for Cohort 1.

Cohort 2 APSI data

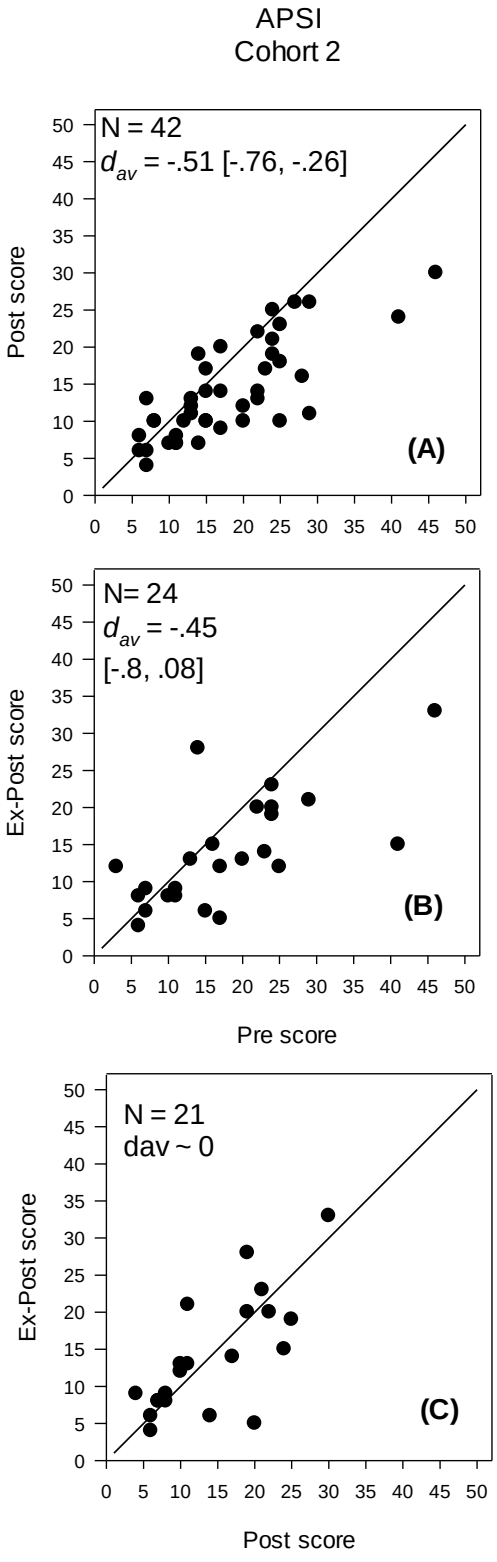

Figure 7 Modified Brinley Plot showing change in individual caregiver APSI scores at post-training (A) and follow-up (Ex-post, B) relative to pre-training scores, and follow-up scores relative to post-training scores (C) for Cohort 2.

The distribution of caregiver-reported DASS-21 subscale scores are provided in Figures 8a to 8c. As indicated in Figure 8a, depression subscale scores are largely distributed toward the lower end of the scale with the majority of scores below nine, and thus in the normal range. Only one participant was within the moderate severity range (score = 16). Stress subscale scores were more evenly distributed across the scale, though all participants reported ratings within the normal range. Anxiety subscale scores were also in the normal range for all but one participant, who scored in the moderate range (score = 11).

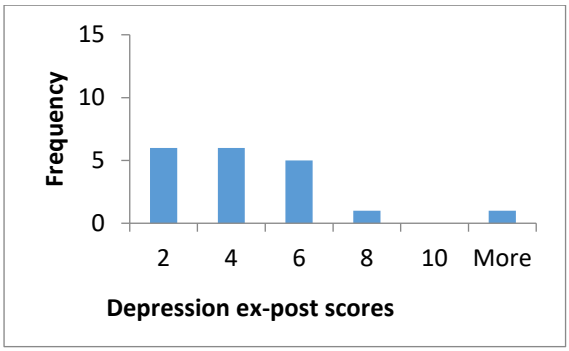

Figure 8a. Caregiver-reported DASS-21 depression subscale scores ex-post.

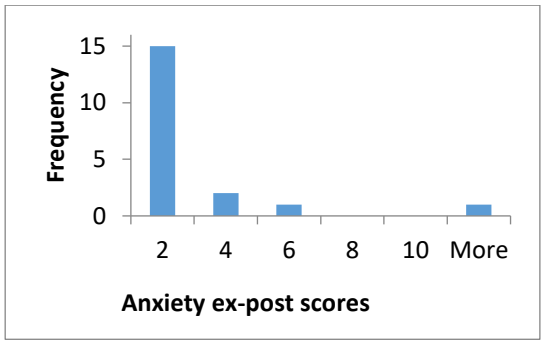

Figure 8b. Caregiver reported DASS-21 anxiety subscale scores, ex-post

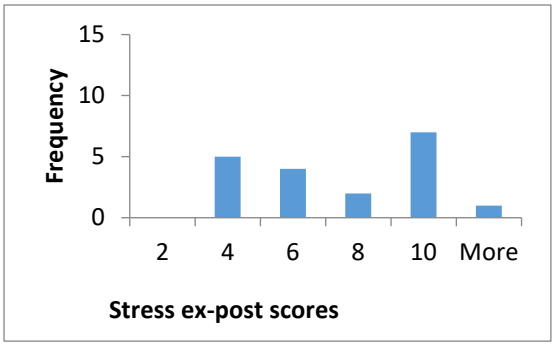

Figure 8c. Caregiver-reported DASS-21 stress subscale scores, ex-post.

Interestingly, there was a significant correlation between APSI pre and DASS-21 Stress subscale scores (r = 0.704, p<0.05) which (as noted above) suggests that they have good convergent validity as measures of stress. For this reason, and to minimise respondent burden, the DASS-21 was removed from the Cohort 2 evaluation.

Caregiver confidence and coping skills (PSQ-P data)

Post-participation data obtained from the PSQ-P (items four and seven) was examined. Items four and seven were selected as they relate specifically to caregiver's feelings about their level of progress (item four) and goal achievement (item seven). These items assessed caregiver's feelings about their progress and goal achievement immediately following participation in the IYA programme. For example, caregivers were asked to rate their response to the following statement: '*My overall feelings about my personal progress at using the autism spectrum/language delays parenting skills are that I am',* according to a seven-point scale (1 = very pessimistic; 7 = very optimistic).

The PSQ-P post-participation data for items four and seven is presented in Table 15. This shows caregiver ratings ranged from 'the same' to feeling 'very optimistic' about using the parenting skills taught during the programme, with mean scores for both cohorts reflecting 'slight optimism' about using the acquired skills. Mean feelings about goal achievement reflect a 'positive' rating across cohorts though these scores ranged from 'negative' to 'very positive'.

Table 15. Mean, median, standard deviation scores for items four and seven of the PSQ-P, post-participation

	Personal progress using parenting skills taught		Feelings about goal achievement	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2
N	64	51	64	51
Mean	5.53	5.41	6.08	6.1
Median	5	5	6	6
SD	0.84	0.80	0.87	0.94
Range	4-7	4-7	2-7	2-7

This data is similarly reflected in Figures 9a and 9b, where there is a reasonably normal distribution of responses within the range of 4-7; the majority of respondents indicating feelings of 'slight optimism' (5) or 'optimism' (6) in response to their progress in the use of parenting skills that were taught. As shown in Figure 9b, the majority of caregivers indicated feeling positive (6) or 'very positive' (7) about their progress toward achieving goals for them and their family. Only one participant (Cohort 2), reported 'negative' feelings about their progress.

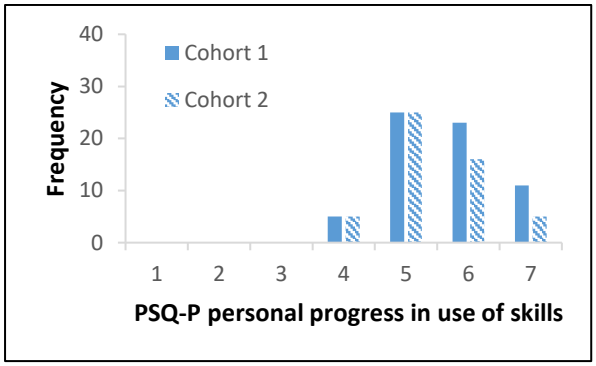

Figure 9a. PSQ-P ratings of feelings of personal progress, post-participation.

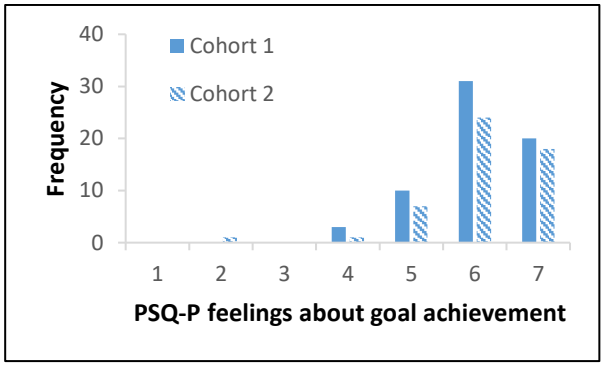

Figure 9b. PSQ-P ratings of feelings about goal achievement, post-participation.

Caregiver confidence and coping skills (IYPSQ data)

Ex-post data obtained from the IYPSQ is presented in Table 16 and Figure 10. Higher scores on the IYPSQ reflect higher levels of perceived confidence and frequency of skill use. There are significant limitations to the interpretation of this data as the measure was only administered during the ex-post phase, there was only a small number of respondents, and there is an absence of normative data or classification rules. Furthermore, as there are no conventions for subscale scoring, only total scores were able to be provided. These total scores are presented as descriptive data and frequency distributions, although, in light of these limitations, no interpretation is able to be provided. It perhaps noteworthy however, that similar mean scores were obtained across cohorts, though more caregivers received scores in ≥ 220 in Cohort 2, when compared to Cohort 1.

Table 16 Mean, median, standard deviation scores the IYPSQ, post-participation.

	IYPSQ Total	
	Cohort 1	**Cohort 2**
N	18	21
Mean	189	196
Median	191	208
SD	40.1	33.0
Range	123-284	132-233

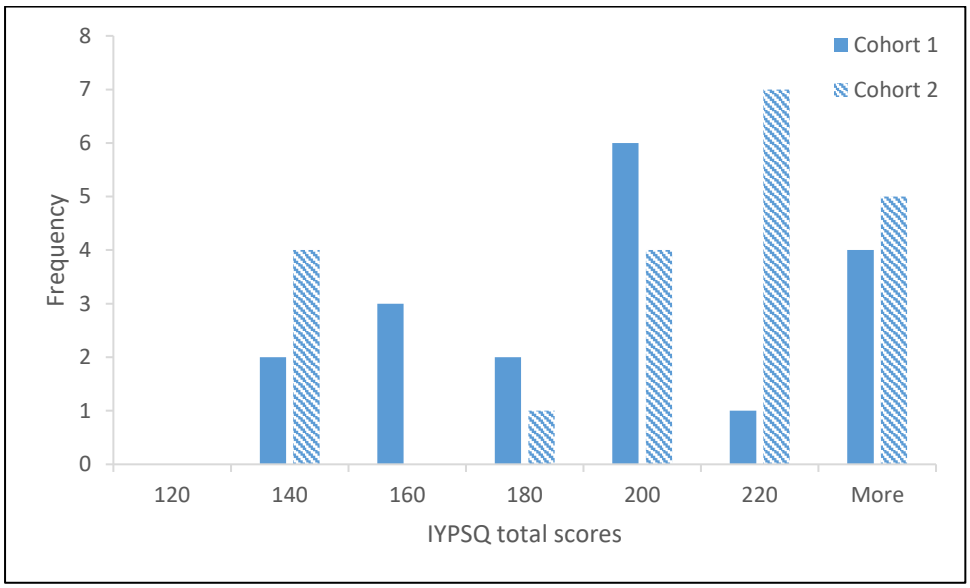

Figure 10. IYPSQ total scores, ex-post participation

Qualitative data (caregiver outcomes)

This section describes what caregivers reported during interviews about their perceptions of the impact of the IYA programme on their wellbeing and coping skills. Caregiver interview questions five, seven, and eight were designed to address this outcome. Three key themes were identified relating to caregiver competence, personal wellbeing, and relationships with others.

The impact of IYA on caregiver coping skills and competence

> *"It made me feel like I wasn't alone. It made me feel like that it wasn't bad parenting… So I think for me as a mum I am more confident about what I am doing and therefore I am more relaxed about things".* (Cohort 1: P10H)

Many caregivers spoke about the positive impact IYA had on their confidence and self-efficacy. The knowledge and practical strategies caregivers had learnt has helped them understand, accept their child's diagnosis and to "*celebrate even the small things*." Two parents from cohort 2 specifically mentioned that previous parenting programmes had been ineffective in leading to meaningful change in their child's development whereas IYA had a positive impact on their parenting and wellbeing.

"I had kids around me for most of my life and I felt quite confident becoming a parent. Then I had my son… I had no confidence by the time we did the IYA because none of [my parenting] strategies worked. I went to many parenting courses and nothing worked and I felt horrible and useless. After doing IYA I feel a lot more confident and seeing the benefit as well has made a huge difference." (Cohort 2: P34B)

A few caregivers from Cohort 1 spoke about their obsession with *"googling everything"* and becoming overwhelmed with the information they found online about Autism. Since completing the IYA programme, several caregivers from both cohorts feel better educated about Autism and understanding the needs of their child.

IYA has "given me that toolbox so even if I can't think…I can go find the book and flip through that to see if I can find an idea of something to try if stuff isn't working". (Cohort 1: P55C).

"Before IYA I definitely didn't know anything about ASD… now I know what's going on in his head." (Cohort 2: P68W)

Some caregivers from Cohort 1 also described their excitement about taking their child to public places because they have more confidence in their ability to control their child's behaviour outside.

"The [IYA] course had helped me to know how to manage my son's behaviours outside… I would always panic when I took him out. He would just run away. But IYA has taught me how to control my son, to hold mama's hand before we go out. I show him the picture and where we are going and that if he does it I will give him a reward. So he knows when he holds my hand he will get something good. I feel happier now, I enjoy going for coffee with my son outside in the coffee shop." (Cohort 1: P34J)

The impact of IYA on caregiver wellbeing

"I think the most valuable thing that they taught me was that you can't pour from an empty cup". (Cohort 1: P52C)

Caregivers from both cohorts spoke about the impact IYA has had on their wellbeing. Caregivers in Cohort 1 described the weekly self-reflective activities where they wrote down what they have done for themselves during the week, as a way to take ownership of their own wellbeing. These caregivers described being calmer, engaging in more activities that they enjoyed such as going for a run or nice dinners. Many of these caregivers spoke about the IYA programme as being as much for them as it was for their child. Caregivers in both cohorts also spoke about improvements in their relationships with their family/whānau and partner. The consistent implementation of the IYA strategies contributed to improvements in their child, leaving caregivers more comfortable to go on a 'date night' or 'weekend away' while their child was being minded. These were opportunities for self-care and strengthening relationships with their partner.

"That was also really good to not only do this for my son but also… I am doing this for myself now. I am actually making an effort to look after myself now". (Cohort 1: P29F)

A few caregivers from both cohorts described some of the IYA strategies that have been useful in supporting their emotional regulation and wellbeing. When stressed, anxious or angry, some caregivers have started counting back from 10, have identified 'safe' spaces to retreat to, and have used visualisation and breathing strategies to help regulate their feelings and emotions.

"Breathing… that is something I learned…deep breathing. I never really thought it would work until they really taught you how to do it. You can't teach a kid how to do it until you know how to do it". (Cohort 1: P52C)

Caregivers in Cohort 1 and Cohort 2 described the positive impact the social support and connection received during the IYA programme had on their wellbeing. Caregivers valued the opportunity to meet with other parents who had experiences similar to their own and to share stories about parenting a child with ASD. The social support and friendships developed during with IYA programme was considered the greatest impact for some caregivers.

> *"[The impact on my own wellbeing] was definitely meeting with the other mums. I felt isolated and it was nice to have that weekly meet-up. We gathered and had a yard, talk about what hell of a week it has been." (Cohort 1: P67E)*

> *"The main thing for me was meeting other parents who got you, got what it was about, who understood. Because we've fallen sort of inbetween the cracks, we don't have a diagnosis, but our child is different, it's quite challenging sometimes because other people don't understand. So it was really nice to talk to people who got it, who just knew what it was like… that was probably for me was the nicest thing, the connection with other parents." (Cohort 2: P39B)*

To what extent did participation in the IYA-T programme contribute toward increased teacher capability to help children demonstrating behaviours associated with autism? (Question 3)

To test the proposition that participation in the IYA programme would build the capability and confidence of teachers and their ability to implement strategies to support children's participation and engagement, pre-, post- and ex-post data on the IYTSQ was compared. This data is presented as modified Brinley Plots. Post-participation data on the PSQ-T (items two and three) was also examined, as these items assessed teacher's feelings about their personal progress in using social and emotional coaching strategies, immediately following participation in the IYA programme. For example, teachers were asked to rate their response to the following statement: '*My overall feelings about my personal progress using social coaching strategies are',* according to a seven-point scale (1 = very pessimistic; 7 = very optimistic). Only post-participation data was available for this measure and therefore it is only possible to present descriptive data and frequency distributions. A number of interview questions were also designed to assess this outcome (see Appendices H-K).

Overall, participation in the IYA programme appeared to have a significant effect on teacher capability, as measured by the IYTSQ, PSQ-T, and interview data. As such, teacher outcomes are considered to be in the range of 'very good' to 'excellent'. Overall, caregivers and teachers were overwhelmingly positive about their experience in participating in the IYA programme and indicated that participation resulted in teacher-reported improvement in social and emotional coaching strategies.

Teacher outcomes: teacher capability (quantitative data)

IYTSQ data (teacher capability)

Table 17 shows the number of participant respondents during the pre-, post- and ex-post training phases, and provides a summary of the data obtained at each point. For Cohort 1, 70 teachers provided data at the post-training phase, and 47 (49% of pre-participation respondents) supplied data at the ex-post phase. For Cohort 2, 75 participants provided post-participation data (96% of pre-participation respondents) and 26 provided ex-post data (33% of pre-participation respondents).

Table 17. The number of teacher respondents and mean, median, standard deviation, and minimum and maximum scores on the IYTSQ across phases and cohorts

	Cohort 1			Cohort 2		
	Pre	**Post**	**Ex-post**	**Pre**	**Post**	**Ex-post**
N	95	70	47	78	75	26
Missing	0	25	48	0	3	52
Mean	156	203	195	153	204	180
Median	154	203	196	153	206	182
Standard deviation	32.2	28	27.9	25.9	18.6	22.3
Range	160	148	133	107	74	103
Minimum	69	104	115	102	166	132
Maximum	229	252	248	209	240	235

Figure 11 compares the distribution of scores at pre- and post-training, showing that the distribution had an initial slightly positive skew for both cohorts, with more participants scoring about the mean than below the mean, and that training shifted scores upward. No teacher at either measurement point achieved the maximum possible score of 260, but all were well above the minimum score (52) on initial testing. For Cohort 1, the mean score went from 60% of the maximum to 78% of the maximum, a gain of 18%. For Cohort 2, the mean score was similar to Cohort 1 at pre- and post-training (59% and 79% of the maximum at pre- and post-training respectively), reflecting a 20% gain in average scores.

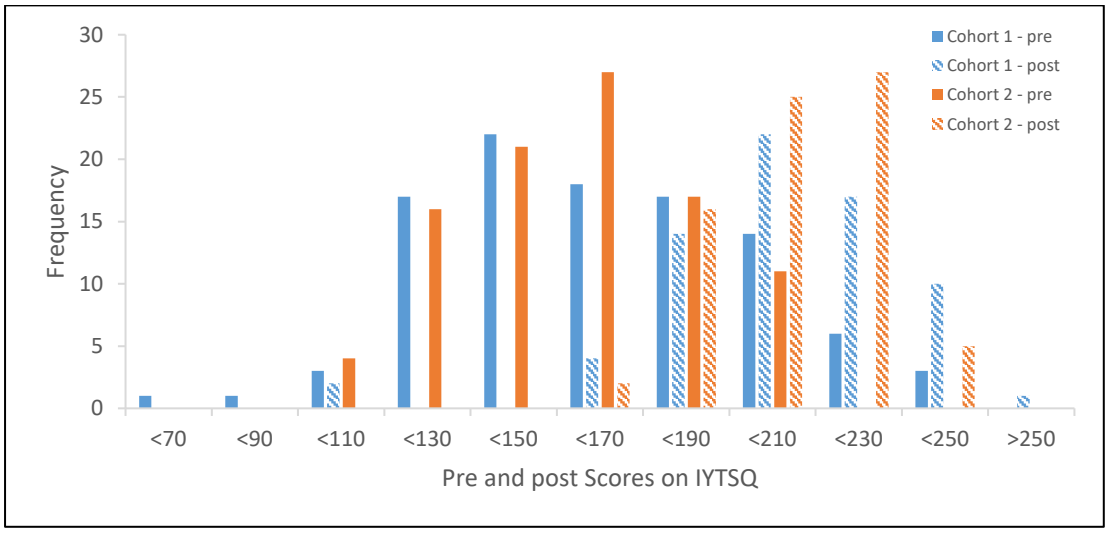

Figure 11. Frequency Distribution of pre- and post-training scores for Cohorts 1 and 2.

The overall change in teacher performance for the teachers who supplied both pre- and post-training data for the IYTSQ is shown in Figures 12 and 13 for Cohorts 1 and 2, respectively, as modified Brinley Plots. If there has been a systematic improvement in scores, data points will tend to lie above the line, and deterioration is shown by points lying clearly below the line.

Figure 12 Panel A (Cohort 1) shows that, overall, almost all teachers improved in their score from pre- to post-training assessment, with only four teachers showing either no clear change or clear deterioration. The evidence of a positive effect of training is supported by the Cohen's d_{av} = 1.74, conventionally considered a large ES. The 95% CI on *d* indicates that, taking a worst-case scenario where the true value of *d* is at the lower end of the CI, the ES can still be regarded as large.

A total of 47 teachers supplied both pre-training and ex-post data on the IYTSQ. This data is shown in Figure 12 Panel B, where, again, there is clear evidence that most teachers reported scores that were larger than their pre- training scores. The ES at follow-up was still clearly in the large range, and would still be so in a worst-case scenario. This data indicates that, at least for the teachers who were cooperative with ex-post data collection, their training gains were mostly maintained. Another way of examining the maintenance of gains from post-training to ex-post is shown in Figure 12 Panel C. Here, each teacher's score at the end of training is plotted against their ex-post score. If there was no loss of training benefit over the follow-up time, scores would lie closely about the diagonal line; if there was a systematic loss of learning, scores would lie below the line, while if improvement was maintained and increased, scores would lie above the line. As the plot shows, teachers' scores are clustered quite closely around the diagonal line, suggesting little change from the end of training to follow-up. This observation is confirmed by the small but positive ES, which suggests that, overall, there was even some slight improvement over the end of training to follow-up period. This suggests there may be some incubation of training effects over time.

The IYTSQ data for Cohort 2 is presented in Figure 13 Panel A. Similar to Cohort 1, almost all teachers improved in their score from pre- to post-training assessment, with only three teachers showing either no clear change or clear deterioration. The evidence of a positive effect of training is supported by the Cohen's d_{av} = 2.3, conventionally considered a large ES[2].

A total of 26 teachers supplied both pre-training and ex-post data on the IYTSQ. This data is shown in Figure 13 Panel B, where, again, there is clear evidence that most teachers reported scores that were larger than their pre- training scores. The ES (Cohen's d_{av} = 1.2) at ex-post follow-up was still clearly in the large range, and would still be so in a worst-case scenario. This data indicates that, at least for the teachers who were cooperative with ex-post data collection, their training gains were mostly maintained. The maintenance of gains from post-training to ex-post is shown in Figure 13 Panel C. As the plot shows, teachers' scores tend to be below the diagonal line (18/23 teachers who provided data) indicating that there was some loss of gains from the end of training to follow-up, an observation confirmed by the negative ES.

The association between IYTSQ outcomes ethnicity, and region was explored by calculating point-biserial correlation coefficients. For each cohort, there was an insufficient number of participants in most regions to do a detailed breakdown analysis, however, for Cohort 2, given the large number of participants in the Canterbury region, it was possible to separate the data set into "Not Canterbury" (N = 32) and "Canterbury (#7)" (N = 43). The descriptive data for these two groups is presented in Table 18. Teachers in Canterbury reported larger gains than those in other Regions. Cohen's *d* for IYTSQ pre-post in Not Canterbury Regions was 1.49 [.97, 1.99]. Cohen's *d* for IYTSQ pre-post in Canterbury region was 3.38 [95%CI could not be calculated; *d* >2]. For Cohort 2, the SDs across regions and times were much the same, so there are no great differences in variance at any place or point in time.

[2] The software used to calculate the 95%CI on *d* does not compute the CI where *d* is outside the range -2 to +2, so no CI is presented for this comparison.

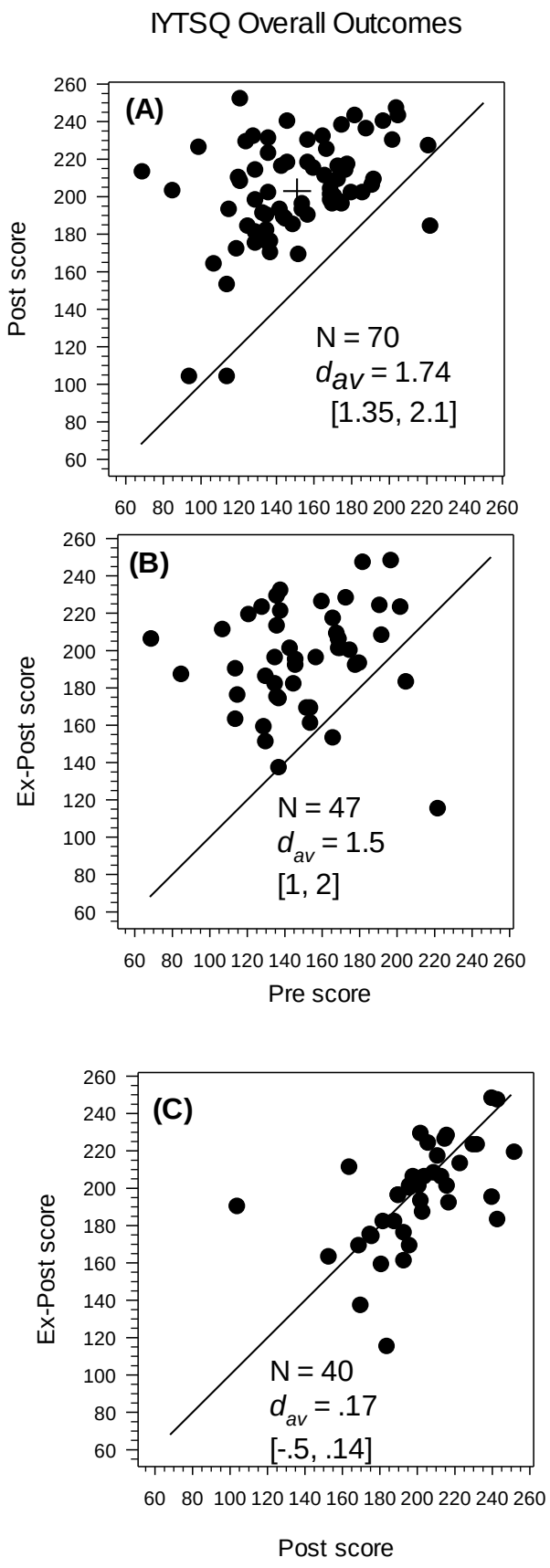

Figure 12 Panels A, B & C IYTSQ Scores for Cohort 1 participants

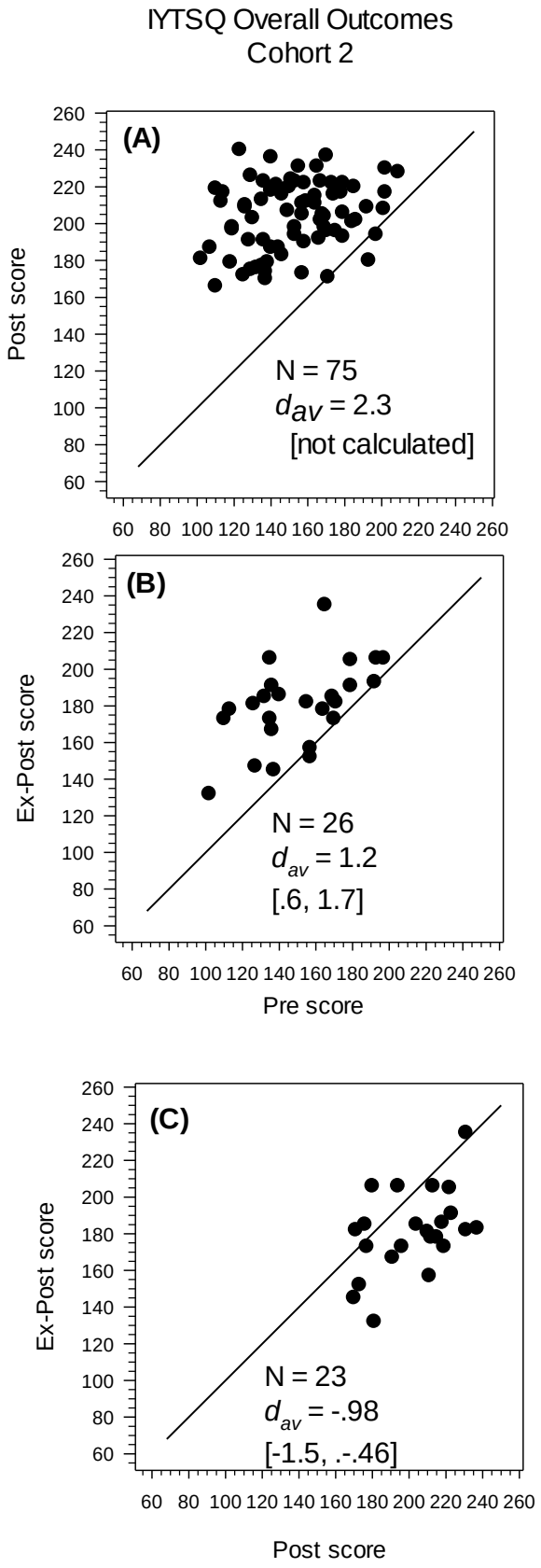

Figure 13 Panels A, B & C IYTSQ Scores for Cohort 2 participants

Table 18. The number of 'Not Canterbury' and Canterbury teacher respondents and mean, median, standard deviation, and minimum and maximum change scores on the IYTSQ for Cohort 2

	Not Canterbury	Canterbury
N	32	43
Missing	11	0
Mean	31.8	65.8
Median	31.0	67
Standard deviation	21.4	22.4
Minimum	-13	26
Maximum	87	117

Analysis of ethnicity data revealed that the correlation was not statistically significantly different from zero, so ethnicity (as coded) did not predict IYTSQ gain scores. Furthermore, there was little to no variability in Teacher Attendance for Cohort 1 and 2 (all at maximum) so there was no point calculatingcorrelations.

PSQ-T data (teacher confidence and capability)

The PSQ-T post-participation snapshot data for items two and three is presented in Table 19. Teacher ratings across cohorts, ranged from 'slightly pessimistic' to 'optimistic' for feelings about personal progress in the use of social and emotion coaching strategies, with mean scores reflecting 'slight optimism' about the use of social and emotion coaching strategies respectively. Again, participant responses were largely similar across cohorts.

Table 19 Mean, median, standard deviation scores for items four and seven of the PSQ-T, post-participation.

	Social coaching personal progress		Emotion coaching personal progress	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2
N	105	88	105	88
Mean	5.5	5.6	5.49	5.53
Median	6	6	6	6
SD	0.54	0.49	0.57	0.52
Range	3-6	5-6	3-6	4-6

Participant ratings on the PSQ-T social and emotion coaching strategy items are presented as frequency distributions in Figures 14a and 14b. For both items, ratings are aligned to the upper scale scores, with all but two and three Cohort 1 participants on the social and emotion coaching scales respectively rating their feelings of personal progress as 'slightly optimistic' (5) or 'very optimistic' (6). Only one participant (Cohort 1) rated their feelings about their progress as 'slightly pessimistic' (3) for each item.

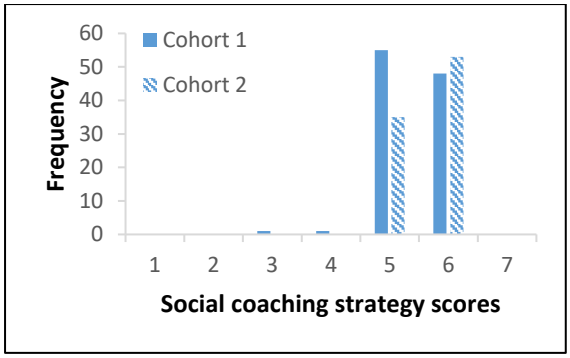

Figure 14a. PSQ-T ratings of feelings of personal progress in use of social coaching strategies, post-participation.

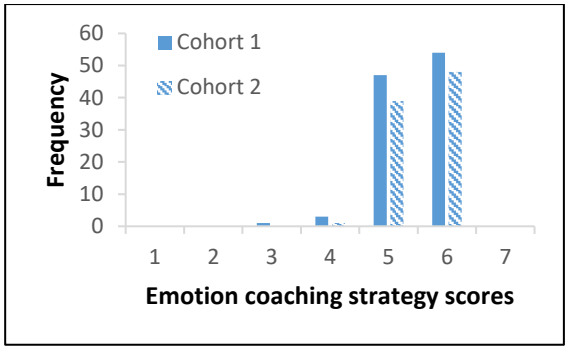

Figure 14b. PSQ-T ratings of feelings of personal progress in use of emotion coaching strategies, post-participation

Qualitative data (teacher outcomes)

This section describes what teachers said about the impact of the IYA programme on their capability. Teacher interview questions five, six, seven, and eight were developed to assess this aim. Four key themes emerged related to this evaluation question: knowledge of autism, use of IYA strategies with all children, information sharing, and teacher capability emerged from the interviews.

The impact of the IYA programme of teachers' knowledge of Autism

> *"I feel like beforehand I didn't understand this [ASD] child and I didn't know how to teach these children. Now I feel quite confident that I have the knowledge and some strategies that I can try" (Cohort 1: T118C).*

Most teachers (Cohort 1: *n* = 21; Cohort 2: *n* = 13) spoke about the increased knowledge they had developed about the autism spectrum through the IYA programme. For some teachers, this knowledge has led to increased confidence in their ability to speak to other professionals. For instance, one teacher from cohort 1 indicated that she feels more confident to speak to the Ministry of Education behavioural specialists about the types of assessments and professionals her service can access to support children on the autism spectrum. Having a variety of strategies in their kete that they can use to support children with ASD has also positively impacted on teachers' self-efficacy and confidence. The variety of strategies that teachers learnt from the IYA programme has also set them up for success, giving them reassurance that if one strategy does not work, there are others they can try.

> *"There are so many different strategies to try... Just having the kind of repertoire and the resources there make me feel so much more confident and not just feel like I am making things up as I go along." (Cohort 2: T54C)*

Use of IYA strategies with all children

> *"I use it with lots of different ways, not just children who have traits of autism, but with other children that need some social and emotional development and support". (Cohort 1: T153G)*

Some teachers in both cohorts indicated that the IYA programme improved their ability to support children on the autism spectrum as well as other children within the EC centres. Teachers described a range of IYA strategies that have been embedded into their daily practices, particularly around supporting young children's communication skills, self-regulation, and behaviour.

"But we found that it didn't matter whether or not you were ASD or not because those things were helping oral language. They were helping different behaviour issues as well so it was kind of beneficial for everyone really." (Cohort 2: T31B)

Teachers are using visuals to communicate with children on the autism spectrum and children for whom English is not their first language. Other teachers described breathing and visualisation techniques and teaching children to label their emotions as strategies that have been embedded across the centre. Some teachers from Cohort 1 spoke about the structure of the IYA programme in allowing them to try strategies in their service and receive feedback from the group. When teachers experienced success using a strategy, they were more likely to embed it into their practice and share it with their colleagues.

"Successful strategies just becomes part of your practice because it actually works." (Cohort 1: T109J)

"Now that I have the knowledge and we're seeing the positive impact [of IYA] and changes in the children… it's like 'WOW! This is awersome'. (Cohort 2: T20T)

Teachers' information sharing

"We often share the different tools we learn to use around the table. It's very much day to day, part of our programme". (Cohort 1: T85F)

"I have shared [the IYA strategies] with the rest of my team. Every staff meeting when I was going to the course I gave a little run down of what we learned that week. I've also talked with others about it, I found it so interesting, friends and family and other teachers." (Cohort 2: T75W)

All of the teachers in Cohort 1 (*n* = 27) and Cohort 2 (*n* = 22) spoke about sharing the knowledge and strategies they learnt from IYA with their colleagues and/or caregivers. Some teachers indicated that there were a group of teachers from the service attending IYA. At their weekly team meetings, they would share with the group new strategies that they learnt. For some teachers, they chose one strategy to focus on each week and would teach other staff members how to embed that strategy within their practice. The sharing of knowledge, resources and strategies gained from the IYA programme was a way to promote consistency in teaching.

The reaffirmation of prior knowledge

"*It's really just reiterated what I actually know and that I have got the skills but sometimes I need to pull them out again and use them" (Cohort 1: T129C)*

For some teachers, participation in the IYA programme reaffirmed the knowledge and strategies that they were already using in their services. A small number of teachers in Cohort 1 (*n* = 4) reported that the IYA programme had little to no impact on their confidence and capability because the strategies they have implemented have not been effective in improving children's behaviour. This does not suggest that teachers did not learn skills and strategies to support children on the autism spectrum. Rather, they reported that they were yet to see any meaningful change in child outcomes that would lead them to perceive that they had a stronger sense of competence. In comparison, all teachers in Cohort 2 (*n* = 22) reported that the IYA programme had some impact on their confidence and capability to support the learning and development of children on the autism spectrum.

Figures 15-17 visually depicts the percentage of participants who were interviewed (teachers and caregivers combined) that have continued to use communication, social and emotional regulation strategies taught within the IYA programme.

As Figure 15 shows, growing empathy by positioning the child at the centre 'spotlight' of thinking, simplification of instructions and use of visuals are the strategies most used by cohort 1 caregivers and teachers post-IYA training. The most common strategy used by teachers was the 'spotlight' strategy. A small percentage of teachers continued to use puppets and to specifically teach skills of self-regulation. Teachers no longer used the strategies of ABC, One-Up or positive reinforcement. However, caregivers consistently used these three strategies.

In comparison to Cohort 1, Cohort 2 caregivers and teachers described other strategies that they used to promote children's communication. These strategies included modelling language, social coaching, using NZSL sign language, repetition of words, and engaging in the child's interest. Caregivers and teachers in Cohort 2 did not report using strategies of ABC and self-regulation. Like teachers and caregivers in Cohort 1, the largest percentage of teachers in cohort 2 used visuals to promote child communication. Cohort 2 caregivers used visuals to a lesser extent, instead consistently engaging the child's interest and getting into the child's spotlight to promote child communication. In summary, caregivers and teachers in both cohorts used a range of strategies to promote child communication and these strategies were selected based on the effectiveness and success they experienced in implementing the strategies.

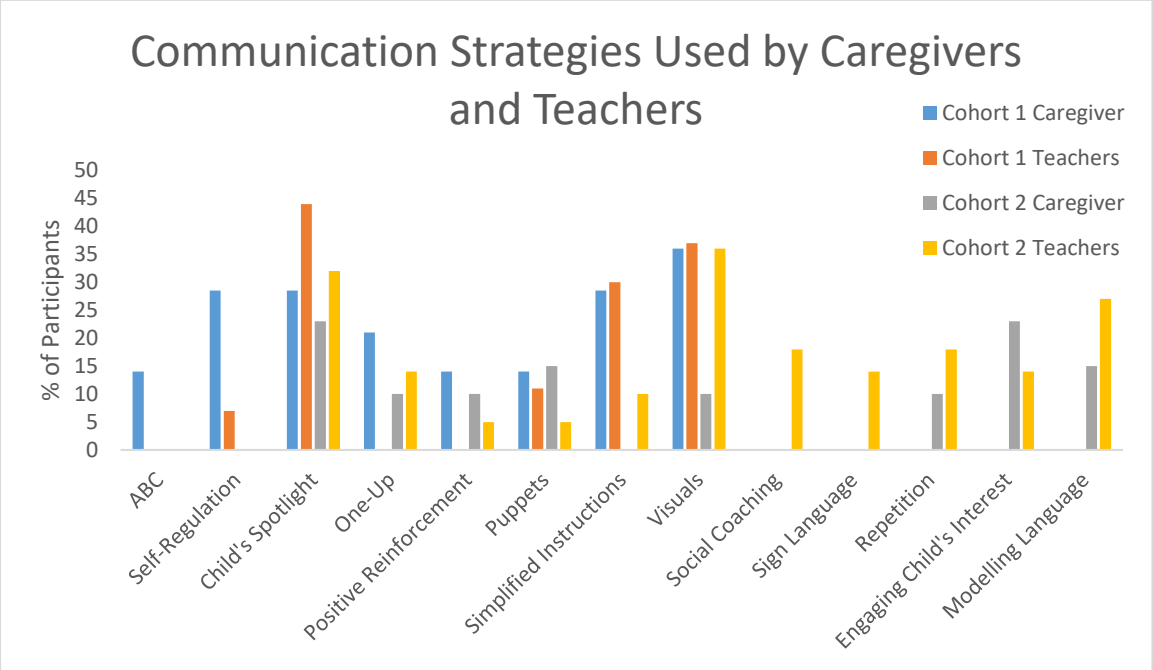

Figure 15. The percentage of teachers and caregivers for both cohorts that reported continued use of communication strategies at the ex-post phase.

As shown in Figure 16, eight strategies were identified in Cohort 1 following training (at ex-post) as being used to support social and emotional regulation. There is a notable difference between the strategies used by teachers and caregivers. Both groups continued to extend children's language and to use strategies to support emotional regulation and emotional literacy, although this occurred at different levels. The most common teacher strategies implemented were those used to support emotional literacy. Teachers also reported using scaffolded play and functional behaviour analysis. In contrast, caregivers used neither of these strategies in an ongoing way. However, caregivers continued to use positive reinforcement, ignoring inappropriate behaviour and modelling of appropriate behaviour.

Similar to Cohort 1, the largest percentage of caregivers and teachers in Cohort 2 also used emotional regulation strategies such as the thermometer, puppets, visuals, and books. Like teachers in Cohort 1, teaching children emotional literacy (i.e., labelling emotions) was the most common

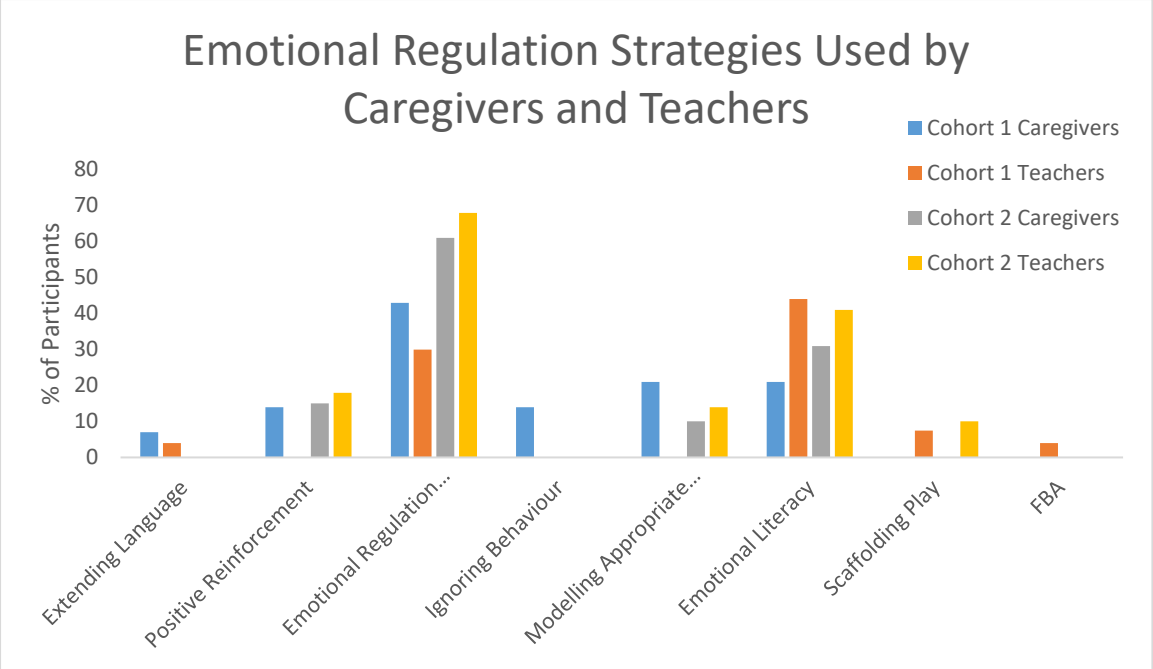

Figure 16. The percentage of teachers and caregivers for both cohorts who reported continued use of social and emotional regulation strategies at the ex-post phase.

strategy implemented consistently by teachers. In contrast to Cohort 1, caregivers and teachers in Cohort 2 did not report to extend children's language, ignore children's behaviour, or use functional behaviour analysis strategies. In summary, implementing specific emotional regulation tools and teaching children about emotions are the two strategies used by caregivers and teachers in both cohorts in an ongoing way.

Figure 17 lists engagement strategies that continued to be used by cohort 1 teachers and caregivers at the ex-post training phase. Six strategies used to promote engagement continued to be used at this time, though to varying degrees. Caregivers and teachers consistently valued placing the child at the centre of the process ('child's spotlight'), and this was the most common strategy implemented over time. Caregivers and teachers also continued to follow the child's interests and to model what engagement looked like. Teachers also continued to use visuals, puppets, and coaching, however, caregivers did not report the use of these strategies to promote engagement.

In contrast, caregivers and teachers from cohort 2 used similar strategies, though to varying degrees. Caregivers and teachers in cohort 2 placed greater value on children's interests to promote engagement followed by being in the child's spotlight. Similar to cohort 1, teachers in cohort 2 also used puppets and modelled what engagement looked like. Coaching and visuals were used to a lesser extent by cohort 2 teachers, however, caregivers in this cohort did use visuals and coaching to promote children's engagement. In summary, there was a considerable difference in cohort 1 and cohort 2 with the largest percentage of cohort 1 caregivers and teachers using the spotlight strategy and cohort 2 caregivers and teachers following the child's interest. Engagement strategies varied for teachers and caregivers in both cohorts.

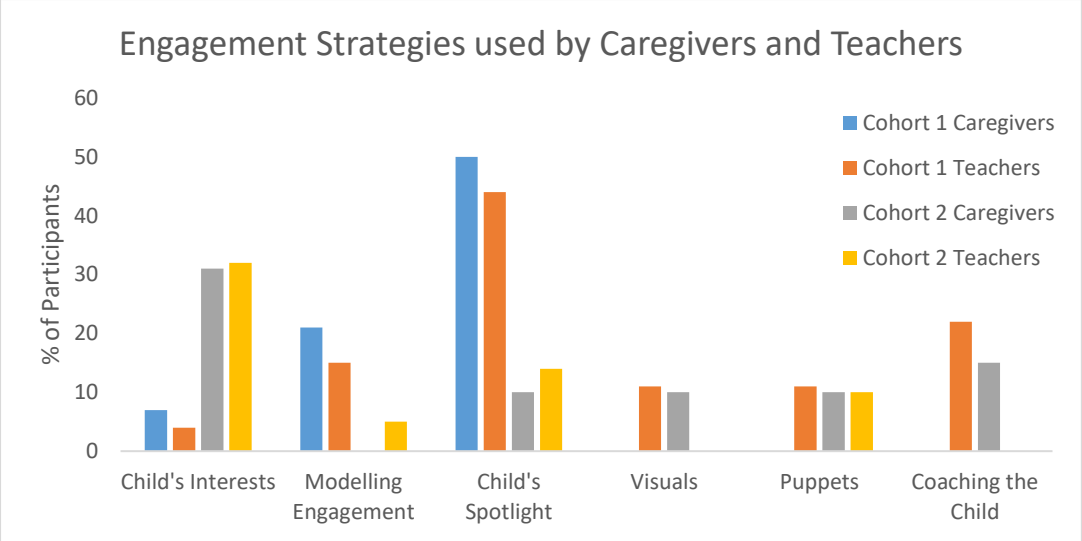

Figure 17. The percentage of teachers and caregivers from both cohorts that reported continued use of engagement strategies at the ex-post phase.

Overall, caregiver and teacher responses reflect that they are aware of and use several IYA strategies to support children. Of importance to caregivers and parents was the theory or rationale for the use of the strategies. When caregivers and teachers understood the purpose of the strategies, they were able to more effectively implement them.

> *"But what I found was more important for me than how to help your child was how to understand him. What he is going through and how he sees the world. It's wonderful to have the strategies but if you don't know why you are doing what you are doing, even with motivation, it is pointless to us… That is pretty much what I took from the IYA not just necessarily the strategies but why the strategies are put into place."* (Cohort 2: P75W)

Long term and unintended benefits of participation in the IYA programme (Question 4)

In terms of the inferences that can validly be drawn from a study, "benefits" can only be assessed across time where there is longitudinal data that provides evidence of beneficial change. Data gathered once at some follow-up (ex-post) point can only be suggestive, in that it provides a snapshot of the psychological state, wellbeing, and relevant self-perceptions of the participants as reported at that time point. Data collected to assess the long-term and unintended benefits is based on the PedsQL and caregiver and teacher interviews. However, for the reasons given above and because of the small number of respondents and the variability in their responses, it is not possible to draw any conclusions about the beneficial impact of programme participation on long-term outcomes from the quantitative data.

During caregiver interviews, a number of secondary benefits of programme participation were reported. This included perceptions of increased communication and collaboration between home and the centre, knowledge sharing among immediate and extended family/whanau, and having a guidebook to refer to when required. Many caregivers also reported personal benefits, in relation to their own emotional regulation, their knowledge of autism, their relationship with their child, and the establishment of social supports and relationships with others who completed the IYA programme.

Teachers were similarly positive, reporting a perceived increase in their confidence and ability to support all children, sharing their learning with colleagues and caregivers, having a guidebook to refer to when required, and being able to incorporate the strategies into everyday practice. Overall, those interviewed reported overwhelmingly positive experiences in relation to the children that they interact with at home and/or school.

Child wellbeing (quantitative data)

Child wellbeing (PedsQL™ data)

Caregiver-reported subscale and total scores for the PedsQL™ are presented in Table 20 and Figures 18a to 18d. Following PedsQL™ conventions (Varni et al., 2003), higher scores in each domain reflect better functioning/quality of life. When scoring the PedsQL™ scores are linearly transformed from ratings of 0-4 to 0-100 (i.e., 0=100, 1=75, 2=50, 3=25, 4=0). Thus, if a child had a score of 100, it would indicate there was 'never' a problem in a particular domain; a score of 0 would reflect ratings of 'almost always' a problem, and the midpoint scores (50) would reflect a rating of 'sometimes' a problem. A total score below 65.4 suggests that a child is at-risk for impaired health related quality of life. As shown in Table 20, mean caregiver total scores for Cohort 1 suggest that these children are at-risk for decreased health related quality of life, while Cohort 2 ratings indicate no risk. Ratings for both Cohort 1 and 2 are below the clinical cutoff for social (clinical cut-off 62.07) and emotional (clinical cut-off 63.29) functioning, indicating increased risk of challenges in these areas. However, ratings are above the clinical cutoff for physical (clinical cut-off 64.38) and school (clinical cut-off 56.75) functioning suggesting little risk of challenges in these areas. Caregiver responses, however, were highly variable across both cohorts, as reflected in the range and standard deviations reported below, and the frequency distribution.

Table 20. Mean, median, standard deviation and minimum and maximum scores for caregiver-reported ex-post data on the Pediatric Quality of Life Inventory™ (N=19)

	Physical		Emotional		Social		School		Total	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
N	19	18	19	18	19	18	19	16	19	18
Mean	74.5	88.8	51	59.3	53.9	58.6	61	79.3	61.8	72.6
Median	78.1	90.5	55	60	55	52.5	66.7	79	60.7	70
SD	18.2	7.95	17.3	15.1	18.8	20.4	24.1	17.5	14.8	10.9
Range	37.5-100	72-100	15-80	38-90	25-90	25-100	0-100	50-100	35.7-86.9	55-90

Figures 18a-18d show that caregiver-reported PedsQL™ scores for physical functioning are somewhat skewed to the upper end of the scale, with the majority of scores falling between 80-100 across cohorts, reflecting low levels of reported problems. Caregiver ratings in the social functioning and emotional functioning domains are relatively evenly distributed for both Cohort 1 and 2, indicating variability in children's functioning across these domains. Likewise, for both Cohorts, participants predominantly scored in the range of 60-100 for school and psychosocial functioning, with the exception of a small number of Cohort 1 participants who scored in the range of 20-40. This suggests that most participants 'almost never' to 'never' had a problem across these domains.

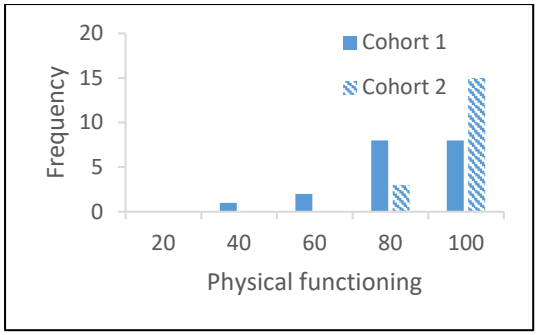

Figure 18a. Caregiver-reported PedsQL™ physical functioning subscale scores, ex-post.

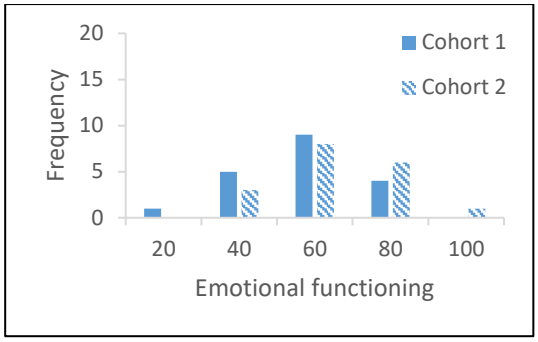

Figure 18c. Caregiver-reported PedsQL™ emotional functioning scores, ex-post.

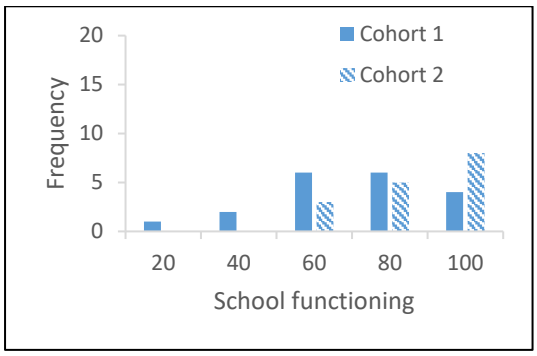

Figure 18b. Caregiver-reported PedsQL™ school functioning subscale scores, ex-post.

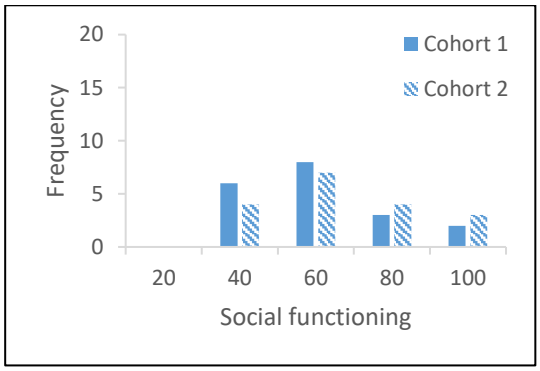

Figure 18d. Caregiver-reported PedsQL™ social functioning subscale scores, ex-post.

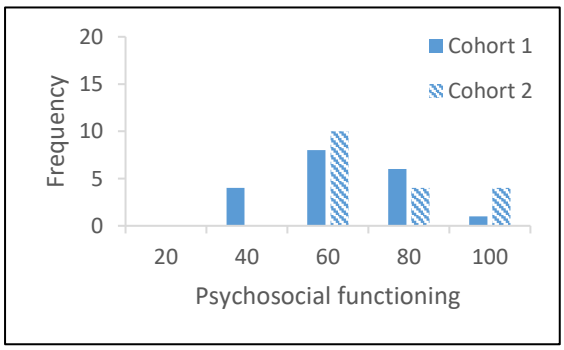

Figure 18e. Caregiver-reported PedsQL™ psychosocial functioning subscale scores, ex-post.

Unintended secondary benefits (qualitative data)

The effects of IYA on child wellbeing

"He is doing really well, he is thriving." (Cohort 1: P13H)

Many caregivers in Cohort 1 (*n* = 7) spoke about their perceptions of the impact IYA had on their child's general wellbeing and happiness. When children were being included in regular activities, caregivers reported a positive impact on the child's wellbeing and happiness. Caregivers in both

cohorts said that the IYA programme helped them understand their child, allowing for trusting and loving relationships to be developed. One caregiver from cohort 2 reflected *"My husband said to me the other day 'I feel like I'm falling in love with my son for the first time.' That brought tears to my eyes"* (Cohort 2: P34B). For some children, their attendance and participation at the early childhood service improved because of the relationships they developed with teachers and peers. One caregiver described her son's excitement going to kindergarten *"he loves it, he loves going and participating"* (Cohort 1: P10H). Another caregiver from Cohort 2 stated *"He used to hate the other kindy, at the gate he never wanted to go… now when I pick him up he will say "I love kindy, I never want to leave" that was completely different"* (Cohort 2: P34B).

Other caregivers from both cohorts reported that their child's attendance at the early childhood service had not changed as a result of the IYA programme, most indicating that the child attended the centre consistently prior to their IYA participation. Some caregivers in Cohort 1 described that their child still had meltdowns at drop off; however, this was not considered a new behaviour.

It should be noted that a small number (Cohort 1: *n* = 3; Cohort 2: *n* = 2) of caregivers indicated that there had been no change in their child's inclusion, participation and engagement in the EC centre. One parent indicated that this was because of the quality of service her son was attending. Other reasons for limited progress in these areas related to the severity and extent of the child's needs, particularly around communication.

Similarly, many teachers (Cohort 1: *n* = 12; Cohort 2: *n* = 12) reported an increase in the child's awareness of the world around them that was not evident before IYA strategies had been implemented. For instance, a teacher from cohort 1 described the improvements in a child's *"tolerance of other peers coming into her space and even allowing them to play with her… she has become more open to the unfamiliar" (*T137D). Some teachers also described an increase in children's happiness, participation, and engagement in the centre.

> "*I've seen him really giggling, and being engaged and laughing so for me that means that he's also relaxed and he's flooded with happy hormones. And that is what we want to see because a happy person is a good learner". (Cohort 1: T95F)*

> *"She has broadened her horizons a lot more. She used to do a lot of repetitive behaviours everyday but she definitely has broadened the activities she is doing." (Cohort 2: T53C)*

The effects of IYA on caregivers relationships with others

> *"I kind of felt quite isolated and it was just quite nice to have that weekly meet-up. We gather and have a yarn, talk about what hell of a week it has been…. That kind of helped me with my emotional wellbeing at that time. It was about 2 months after we got diagnosed and we were still processing". (Cohort 1: P67E).*

Many caregivers (Cohort 1: *n* = 10; Cohort 2: *n* = 4) expressed the value in completing IYA with other caregivers who had similar experiences as themselves. This social support has been critical for some caregivers in building their confidence and being connected socially with other like-minded caregivers. One parent reported that if she did not have her IYA parent group to turn to she would be isolated and would not leave the house. Other caregivers spoke about the therapeutic benefits of expressing their feelings to other parents who understood their experiences. Some caregivers reported that they are still connected to other caregivers who completed the programme in their region.

> *"I would say we had a fantastic group. People were very open and honest. Everyone shared deep emotional things in the group about how they experienced things; it was almost like going for therapy once a week for me."* (Cohort 2: P75W)

Caregivers also described improvements in their relationships with their partners and children. Some caregivers spoke about ways in which strategies, such as visuals, has improved their ability to communicate and connect with their child. Other caregivers spoke about their child's emotions and

how this understanding allowed them to get down to their child's level and relate to what they were experiencing. Several caregivers from Cohort 1 and Cohort 2 reflected on how IYA has improved their relationships with their partners.

> *"Overall it made me a more confident person and strangely enough closer to my husband just because we got to spend time together outside of the house without the kids… it was a nice thing to do together and talk about afterwards. Also because he understands me more now…his connection to me now is better because he understands if I can't do something I am not trying to be difficult, it's because I actually can't do it". (Cohort 1: P16H).*

> *"The household wasn't very pleasant before doing the IY course… my son's unhappiness caused tension between me and my wife. We didn't have a lot of specific knowledge on how to deal with him. We would do the best that we could but a lot of the time that was different between what my wife thought and what I thought. We were lucky enough to do the course together so being on the same page and having the same tools was really amazing. It has made our lives a lot better in terms of a happy household."* (Cohort 2: P35B)

To assess the theory that participation in the IYA programme would support caregivers and teachers to share knowledge with others, and benefit the home and centre/school partnerships, additional interview questions were developed and asked of caregivers and teachers in both cohorts (see parent and teacher interview question nine, and parent question six). Relevant themes that emerged are summarised below.

The effects of IYA on teacher-caregiver relationships

The IYA programme increased the confidence of caregivers to speak openly with their child's teacher about challenges at home. The strategies caregivers learnt during the IYA programme were shared with teachers to use at the centre. Caregivers from Cohort 1 and Cohort 2 spoke about the collaboration between home and centre with caregivers having more confidence to start these conversations. For one caregiver and teacher dyad, they are now using a communication book to take a consistent approach to the child's behaviour.

> "*I can talk to them about what I wanted to work on like the last IEP that I did with them. I tell them that I want to do this and I want this to be our goal. I want us to work on this here. It gave me the confidence to know what my goals are and how I want to go ahead with that goal". (Cohort 1: P52C)*.

Dyads of teachers and caregivers in Cohort 1 who completed the programme together built stronger relationships and caregivers described that they felt more comfortable talking to this teacher than other teachers who had not completed the programme.

> "*Now that I know that one of the teachers have attended the course, I know that if now I a problem with my daughter, she is the one that I can go to because she will be more understanding. Whereas I felt a bit dismissed by the other teacher who didn't attend the course because she didn't really understand." (Cohort 1: P16H)*

These dyads also had greater collaboration, trust in their relationship, and communication.

> *"It has been great to have somebody else learned what we have learned at the same time. We are kind of at the same page and know where each other are coming from". (Cohort 1: P63D)*

> *"because of the course we now feel very close. Before there was this gap but now I feel very close with my son. Also the teacher now, they understand my son there. He feels very happy with the teachers; he is comfortable and hugs them. This course made me, my son, and the teachers very close". (Cohort 1: P34J)*

> "Y*es because I had more confidence, and I got very excited about seeing some changes with the child. It meant that every time the parents walk in I would jump up and down and say "hey he did this today!" It meant that the communication between us increases because I am always so excited to see them and they were excited to come in and hear what has been happening". (Cohort 1: T139D)*

Some caregivers and teachers from both cohorts described the IYA content and strategies as something that they can share with each other. Since completing the IYA programme, caregivers and teachers have a shared understanding of the language, concepts, strategies that each could relate to.

Sharing of knowledge and/or resources

Some caregivers spoke about how they've shared their learning with their immediate and extended whānau, including their partner, siblings, and the child' grandparents. In some cases, this sharing of knowledge and/or resources occurred more with family compared to sharing with friends and EC services. For some caregivers in both cohorts, the child's grandparents frequently cared for the child, thus they also needed to be educated on the strategies that the family are using to support the development of the child.

For caregivers, the main knowledge and strategies that they shared included teaching others how to get into the child's spotlight to get their attention. The process of sharing knowledge with others allowed caregivers to reflect on their learning and to consider ways in which they will change their parenting practices to support the communication, engagement, and social and emotional wellbeing of their child. Caregivers also shared knowledge from the IYA programme by educating friends, other caregivers and whānau about Autism.

Many teachers (Cohort 1: *n* = 25; Cohort 2: *n* = 22) listed colleagues in their EC centre as the people they shared their learning and resources with. The sharing of information occurred during informal meetings about a child, weekly team meetings, professional development workshops, and explicit modelling of strategies. Teachers also spoke of the leadership they took in their centre to support children on the autism spectrum and to coach their colleagues to use the strategies they learnt in the IYA programme. Some teachers have also been proactive in sharing strategies with the child's caregivers/whānau in an attempt to promote consistency between the EC and home settings.

> "*Every staff meeting when I was going to the IYA course I gave a little run down of what we learned that week. I've also talked with others about it, I found it so interesting… friends and family and other teachers." (Cohort 2: T75W)*

For teachers, the main knowledge and strategies that they have been sharing are communication and emotional coaching strategies. To promote the child's communication, teachers model ways others can extend the child's language. Creating visual schedules, choice boards, and using picture prompts were all strategies that teachers shared and implemented in their teams. Self-regulation and emotional literacy strategies, such as blowing out the candles and using visual cues to label and express emotions, were key strategies that teachers shared with their colleagues and encouraged them to use. The strategies shared by teachers were similar for teachers in cohorts one and two.

Caregivers and teachers in Cohort 2 were specifically asked to reflect on any unexpected outcomes for themselves, children, whānau, and the wider community. Some caregivers (*n* = 6) and teachers (*n* = 4) indicated that there were no unexpected outcomes. Unexpected outcomes listed by caregivers included greater success in their child's progress than they expected, improved parent-child relationship, and change in parents' perspective of Autism. Similarly, teachers also stated that the IYA programme was more successful and useful than expected. Other unexpected outcomes listed by teachers included increased confidence to work with children diagnosed with Autism, change in perspective of Autism, improved teacher-child and teacher-parent relationships, and for some

teachers, the IYA programme highlighted the need for adequate support from their colleagues to follow through with IYA strategies.

> "*In the beginning I didn't expect it [IYA programme] to be so helpful. That sounds terrible doesn't it! In the first few weeks when we talked about getting into his spotlight and when we were using those songs it was like we unlocked his communication and I didn't expect that to happen and so quickly. Like when he sang 'The wheels on the bus' and signed it, and when he said "I want to choose this one". I didn't expect it to be so helpful so quickly and have the impact that it did on his development and I guess we were so excited. And it was just amazing to have new things that we could try." (Cohort 2: T55C)*

> *"I use the IYA strategies everyday now in my teaching. Its become very much a part of me, the way I teach… when you do a course you say its okay. This one has made a huge difference. This is not just going to be a six-month thing, it's going to be my life long learning. I see children through a different lens now. What a wonderful gift that course has given me, and for the children and their families." (Cohort 2: T76W).*

Limitations of the data

There are a number of noteworthy limitations inherent within the data, some consequent on the design of the studies, others due to exigencies such as participation and attrition rates. For those measures administered only once (ex-post), no causal attributions (e.g., an inference that training yielded a benefit) can be made regarding the impact of participation in training. However, it was deemed appropriate to include these measures, as they provided a 'snap-shot' of the psychological state and wellbeing of children, caregivers and teachers some time after training had been completed. Had a large proportion of those who participated in training also provided these measures, more evidence of benefit or disbenefit, might have been seen. The numbers consenting to undertake the ex-post assessments, completed by an independent evaluation team months after the course ended, were low, strongly restricting any interpretation of ex-post data. Also, had a larger number participated at this stage, it would have been possible to conduct the proposed dose-response analysis in which outcomes were analysed according to u levels of participation in training, demographic characteristics and/or region of delivery.

Furthermore, the sample size (i.e., small number of programme participants) and limited data variance limited our ability to assess the effect of attendance rates, ethnicity, or training region on caregiver, child, or teacher outcomes during the ex-post phase, even when Cohort 1 and Cohort 2 data were combined. The evaluation team had also intended to conduct multiple regression analyses to investigate what variables predicted specific outcomes (e.g., to investigate if there were demographic variables that predicted participation); however, there was insufficient data and in some cases insufficient change across phases (e.g., for pre-, post- and ex-post YC-PEM scores) to warrant these analyses and/or to allow reasonable conclusions to be drawn for either cohort, or when data were combined across cohorts. Finally, the PSQ-P and PSQ-T were completed anonymously. Therefore, it was not possible to correlate these outcomes with other variables or to determine whether these outcomes were affected by programme attendance or ethnicity variables when used during secondary data analysis.

Limitations of this report

The findings of this report should be (as already noted above) considered in light of several limiting factors. First, there was considerable attrition in rates of participation in the evaluation across phases, especially for caregivers. Those who did not participate in the post- or ex-post evaluation may be those who perceived little benefit from their initial engagement and/or were those who faced various levels of difficulty in participating. Considerable caution needs to be exercised in interpreting the results obtained at the ex-post point for this reason.

Another issue pertains to the differences in the range and variability of participants across locations. There were very few participants who did not complete all training sessions – a strength of the programme, but one that precludes any dose-response analysis. These limitations precluded some of the planned analyses looking at regional differences and predictors of outcome, and participation.

It is also noteworthy, that there were very few participants in the ex-post evaluation who identified as Māori, Pacific Peoples, Asian or other non-NZ European ethnicities. This limits the generalisability of inferences about the evaluation outcomes across diverse groups, especially in the local Aotearoa New Zealand context.

A further pertinent limitation to the report relates to questions about the validity of particular measures in relation to evaluation objectives, and more generally, to lack of pertinent psychometric data about some measures. Clearly, if it is desired, for example, to assess the impact of a treatment on emotion regulation, then a measure, or set of measures, that have been established by appropriate psychometric research to be reliable and valid measures of emotion regulation [noting that validity is a complex and multi-dimensioned construct in the psychometric context] need to be used. Absent published information on the psychometrics of a number of measures used in this evaluation, means that our capacity to informatively comment on the achievement of some of the evaluation objectives is severely limited.

The YC-PEM did not, for the most part, reveal substantive improvements in child behaviour resulting from their caregivers' participation in the IYA programme. This may be for one of two reasons: either there was in fact no change in child behaviour, or, there was change, but the YC-PEM was not sensitive enough or validly targeted to detect the change that occurred. Since no other measures of child behaviour were included across the pre-, post- and ex-post phases, it is not possible to resolve this issue.

Based primarily on qualitative data, caregivers and teachers did report that they perceived benefits of programme participation on child outcomes, opening the possibility that there was real change that the YC-PEM did not detect. It is equally possible that this perception of improvement was a halo effect, the result of well-known psychological factors such as dissonance reduction (Cooper, 2007) associated with participation in research. It is also not possible to rule out the effect of change over time and experience of on-going pre-school education or participation in additional programmes. Given all of this, we simply lack evidence that programme participation alone affected key child outcomes.

Despite small measured improvement in their child's behaviour, caregivers reported a reduction in stress. Interview data suggests factors such as feeling that autism was better understood, that they had better strategies to deal with their child's behaviour, and the fellowship of being in a group with other caregivers may have contributed to this. Nevertheless, it is hard to see how parent stress would be enduringly reduced without some long-term improvement in their child's behaviour. Exactly how the reduction in stress reported by parents resulted in other benefits to their parenting and the general emotional climate of their family is an interesting question which needs more research. To maintain integrity in the interpretation of intervention research such as this, it is critical that there is evidence that the primary target outcomes do in fact, change, and that the change is maintained.

While considerable efforts were made by the evaluation team to recruit a large and representative sample of respondents, the timing of this evaluation (i.e., the end of the school year – Cohort 1; during COVID-19 – Cohort 2) may have impacted on the number of participants during the ex-post phase. Some caregivers and teachers also reported difficulty recalling the specific strategies they learnt in the programme, due to the length of time that had elapsed between completing the programme and the ex-post evaluation. Conducting the ex-post interviews within a shorter timeframe (e.g., 3-4 months) may provide more specific information regarding the strategies that teachers and caregivers have learnt. Finally, a small number of caregivers and teachers indicated that they completed other parent programmes after participating in the IYA programme. This may have impacted on their responses to the quantitative and qualitative measures.

A final limitation is that a small number of caregivers in Cohort 1 (n = 3) had some difficulty responding to the interview questions in English and thus there is some risk that they may have

misinterpreted key questions and/or may have not been able to effectively communicate their responses.

CONCLUSIONS AND OUTCOME LEVELS

Outcome levels were provided within the evaluation framework, based on expectations for this project, and are presented in the project-specific rubric included in Appendix B. Based on the quantitative and qualitative data, the aforementioned limitations, and the project-specific rubric, the effect of participation in the IYA programme on child outcomes is considered to be in the range of 'adequate' to 'very good'. Unfortunately, the value of this conclusion must be tempered by the overall failure to detect substantive change in children's behaviour. The interview and PSQ data does, however, suggest there were benefits of programme participation for children on the autism spectrum. As previously noted, the IYA theory provided by the Ministry of Education, states that the primary objective of the IYA programme was to enhance caregiver and teacher knowledge and skills and therefore, the magnitude of any effects of programme participation are expected to be smaller for child outcomes.

Regarding caregiver outcomes, the impact of programme participation on caregiver wellbeing; specifically, caregiver stress, is considered to be 'very good'. APSI data along with interview reports indicate that participation in the programme had a positive effect on caregiver stress levels and that these effects were maintained at follow-up (although attrition in the sample is a serious limitation regarding long term benefit). However, limitations associated with the data collected restrict the conclusions that can be drawn about the impact of the IYA programme on caregivers' sense of confidence and competence. As such, caregiver outcomes in this regard could be considered to be 'very good'.

Finally, regarding teacher outcomes, participation in the IYA programme appeared to have a significant effect on teacher capability, as measured by the IYTSQ, PSQ-T, and interview data. As such, teacher outcomes are considered to be in the range of 'very good' to 'excellent'. Overall, caregivers and teachers were overwhelmingly positive about their experience in participating in the IYA programme. Unintended benefits described by caregivers and teachers included stronger collaborative teacher-caregiver relationships, opportunities for caregivers to build friendships with other likeminded caregivers, and sharing knowledge and resources with extended family/whānau, friends, and other colleagues. Also of note is that most individuals who began the IYA programme completed most if not all of it. Addressing some of the aforementioned limitations, especially with respect to reliably detecting child behaviour change, perhaps pooling data across cohorts in future evaluations will permit more sophisticated data analysis and in turn, will strengthen the conclusions able to be drawn.

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APPENDICES

Appendix A

Overview of the Incredible Years Autism programme

The Incredible Years (IY) Programme is funded for delivery in Aotearoa New Zealand and is focused on supporting teachers and/or caregivers to learn and practice effective ways of promoting young children's (3-8 years) social, emotional and communicative competence in order to positively manage children's behaviour. More specifically, the IY Programme addresses behavioural and emotional difficulties such as conduct problems (Webster-Stratton, Dababnah, & Olson, 2018), hyperactivity and anxiety in children through upskilling those who are principally responsible for young children's care, wellbeing and learning.

The IY Programme was developed by Dr Carolyn Webster-Stratton, a Clinical Psychologist, and her colleagues in the early 1980s. The programme now consists of a number of interrelated courses which are being delivered internationally. The IY Programme draws upon a number of theoretical frameworks, including attachment, social learning, and developmental stage theories (Webster-Stratton et al., 2018)

The IY programme is described by the IY organisation as:

a set of interlocking, comprehensive, and developmentally based programs targeting parents, teachers and children. The training programs that compose Incredible Years® Series are guided by developmental theory on the role of multiple interacting risk and protective factors in the development of conduct problems. The programs are designed to work jointly ***to*** *promote emotional, social, and academic competence and to prevent, reduce, and treat behavioral and emotional problems in young children" (Webster-Stratton, 2013)(retrieved from:* http://www.incredibleyears.com/programs/*)*

The IY series of programmes is implemented worldwide, and across education and health sectors. The programmes are purported to work effectively across cultures and socioeconomic groups. Incredible Years parent and teacher programmes have been available in New Zealand since 2001 and have been offered nationally by the Ministry of Education since 2010. The programmes, including the more recently available Incredible Years Autism (IYA) Programme, are delivered under the 'Positive Behaviour for Learning' (PB4L) (Ministry of Education) initiative, which focuses on enhancing children's behaviour and wellbeing.

Incredible Years programmes consist of intensive group learning lead by trained group leaders/facilitators (two per course) using a well-articulated and supported multi-modal training package. Parent courses are longer in duration than teacher courses and are usually held at weekly intervals. Typically, parent courses constitute 14-18 sessions (2-2.5 hours in duration) with 10-14 participants. Group sessions draw on a range of active and experiential learning strategies, including role play, coaching, reviewing vignettes, and opportunities for collaborative group discussion and group support (Webster-Stratton et al., 2018). The content focuses on social communication, language development, positive relationships and social skills, emotions and self-regulation, and positive behaviour management with the aim of bringing about changes in either teaching or parenting practices, leading to positive changes in children's development and behaviour.

From its inception, a parallel programme of research has been undertaken to evaluate the effectiveness of the programme and inform ongoing development in a range of contexts, including implementation in different countries (e.g., http://www.incredibleyears.com/category/research-library/key-research-library/). The Incredible Years *(IY-BASIC)* parent programme has been evaluated more than 50 times in randomized control group studies (Webster-Stratton et al., 2018). In 2013, Sturrock and Gray carried out a pilot study on the implementation of the IY Parent programme within the New Zealand sociocultural context. A long-term follow-up (30 months post-programme) of the pilot was subsequently carried out (Sturrock, Gray, Fergusson, Horwood, & Smits, 2014) Both studies concluded that the IY parent programme was sufficiently effective to warrant ongoing use in

this country. Of particular note is the finding that the IY programme is effective for both Māori and non-Māori participants.

The Incredible Years Autism programme

The Incredible Years Autism (IYA) programme is derived from the original IY programmes (Webster-Stratton et al., 2018). Webster-Stratton et al. report that parents of children on the autism spectrum reported some benefits of attending *IY-BASIC* programmes, given the flexibility to individualise that programme; however aspects did not sufficiently meet the needs of these caregivers (e.g, dated nature of some video material, time-out strategies, parent self-care content); hence the recent development of the Incredible Years Parent Program for Preschool Children with Autism Spectrum Disorder and Language Delays (ages 2-5)(Webster-Stratton et al., 2018). The focus of this programme is on enhancing the skills and confidence of key adults in children's lives. The IYA programme specifically supports teachers and caregivers to understand and implement tools and strategies that create an enabling environment for children on the autism spectrum. Group leaders for the IYA programme must be trained in the delivery of the *IY-BASIC* programme. In addition, group leaders take part in 23 days of training and practice with the *IYA* programme. Experience working with children on the autism spectrum and their families and a broad understanding of autism are also considered important qualities of IYA group leaders (see Webster-Stratton et al., 2018, p. 264). As for the IY programmes, IYA has separate parent and teacher programmes. The aim of these programmes is "to promote children's emotional regulation, positive social interactions and language development" (see https://pb4l.tki.org.nz/Incredible-Years-Autism). Each programme focuses on children aged 2-5 years who demonstrate characteristics typical of children on the autism spectrum such as language delay and social and emotional difficulties.

The *IYA* programme follows the *IY-BASIC* approach, with a focus on developing positive parent-child relationships, building responsive parenting skills, and promoting appropriate child behaviour (Webster-Stratton et al. (2018). In addition, a significant feature of the parent programme is group discussion and support, which provide opportunities to share experiences, problems and solutions with caregivers in similar situations. The *IYA* programme for caregivers includes a set of supportive features that aim to reduce parent stress and barriers to participating in the programme such as the provision of childcare, meals and transportation (Webster-Stratton et al. 2018).

In Aotearoa New Zealand, the IYA parent programme is being delivered across 14 sessions and the IY Helping Children with Autism is a separate 6-session programme for teachers of children aged 2-5 who are on the autism spectrum. A one-day follow-up session is also offered for teachers, three months post-completion of the main programme. Together, the programmes aim to promote children's emotional regulation, positive social interactions and language development. The teacher programme also provides teachers with strategies to create a positive learning environment and promote prosocial child behaviour.

Programme Delivery in Aotearoa New Zealand

The Ministry of Education (MoE) began delivery of the IYA programmes in March 2018. These programmes were modified for the Aotearoa New Zealand context. The first group of programmes was offered in eight regions, across 15 different providers (i.e., regional non-government organisations(NGOs), the MoE, or a combination of both). The MoE aimed to deliver parent and teacher IYA programmes in the same region in an attempt to allow caregivers/whānau and teachers/kaiako of children showing autism symptoms to engage in training simultaneously. In order to maximise the effects of the programme for the child, priority was given to teachers/kaiako who work with a child whose caregivers/whānau were on the Incredible Years Autism Parent (IYA-P) course.

The IYA-P programme is a 2.5 hour, 14 session, group-based programme delivered weekly for caregivers and whanau who have a child who has either been diagnosed with or shows typical symptoms related to autism. The maximum group size for the IYA-P programme is 12 caregivers/whanau participants with a minimum of seven. The Incredible Years Autism Teacher (IYA-T) programme is a 2.5 hour, six session, group based programme delivered fortnightly, targeted at teachers/kaiako working with children aged 2-5 years who have either been diagnosed with or shows typical symptoms related to autism. The group size for IYA-T programmes is targeted at 10 to 12

teacher/kaiako. Each programme (IYA-P and IYA-T) is delivered by two accredited group leaders, in accordance with the guidelines and standards approved by the Incredible Years organisation

The Programme Theory

The theory behind the IYA programme is that participants attending either programme (IYA-P or IYA-T) will develop an understanding of tools and strategies that support children on the autism spectrum by building an enabling environment around them. For caregivers, the newly acquired coping skills and practices will promote and increase engagement with their child as well as improve self-confidence and personal wellbeing. Consequently, this will support their child's participation and engagement, emotional regulation and communication skills. Similarly, teachers will learn tools and teaching strategies to increase children's participation in the learning environment. Having acquired new knowledge, both caregivers/whānau and teachers will share their understanding with others around the child, thus building capacity to enable success for children on the autism spectrum.

Appendix B

IYA Evalution Rubric

Outcome levels	Excellent	Very good	Adequate	Poor
Caregiver and teacher outcomes	Moderate or large (significant) effects identified. Consistent evidence demonstrating relationships between outcomes and programme.	Moderate (significant) effects identified. Consistent evidence demonstrating relationships between outcomes and programme.	Small to moderate (significant) effects identified. Some consistent evidence demonstrating relationships between outcomes and programme.	Few if any positive effects identified. Inconsistent evidence demonstrating relationships between outcomes and programme.
Child outcomes[3]	Moderate to large (significant) effects identified. Consistent evidence demonstrating relationships between outcomes and programme.	Small to moderate (significant) effects identified. Consistent evidence demonstrating relationships between outcomes and programme.	Some positive effects identified. Some evidence demonstrating relationships between outcomes and programme.	Few if any positive effects identified. Inconsistent evidence demonstrating relationships between outcomes and programme.

[3] It was not possible to collect data about children through teachers at pre or post periods given ethical considerations.

Appendix C
Participant Consent Form – Ex-Post-Training Evaluation

Consent to take part in the final evaluation project

Note - we will complete this consent process with you over the phone as it is noted that you have previously provided consent to participation in this evaluation. You are also able to complete this form online via the link to questionnaires.

I have read the project information sheet and I agree to take part in the final evaluation project
Yes / No

I understand that participation in this project involves: (1) the completion of a set of online assessments, and (2) taking part in an interview with a member of the evaluation project team

Yes / No

I understand that my participation is voluntary and that I may withdraw from the final evaluation project at any stage

Yes /No

I understand that my name or that of any related child will not be used in any documentation relating to the project and that both anonymity and confidentiality of my identity and that of the child/ren is ensured

Yes / No

I consent to the interview being audio recorded

Yes / No

If you have any questions relating to your participation or any aspect of the evaluation processes please contact Laurie. Her contact details are included below.

Thank you for agreeing to participate in this evaluation.

Ass/Prof. Laurie McLay

School of Health Science, University of Canterbury

Private bag, 4800

Christchurch 814-

Email: laurie.mclay@canterbury.ac.nz

Phone: (03) 369 3522

Lead Research Assistant

Dr Kate Ord

Email: kate.ord@canterbury.ac.nz

Appendix D

Consent and recruitment

A phased approach to participant recruitment and data collection was adopted to maximise response rates. Initially, the IYA training providers were sent an email to distribute to IYA-P/T participants who had consented to be involved in the ex-post evaluation, to inform them that the evaluation team would be initiating contact with them. Following email notification, all participants were emailed information about the evaluation, a link to the online information sheet, consent form, and questionnaires/assessments, and a request to establish a time for a face-to-face or online interview. If participants indicated a preference to be contacted via phone, then a member of the evaluation team called the participants. If participants completed the survey but had not indicated an interview time, a follow-up email was sent requesting an interview. If participants did not complete the survey or indicate an interview time, a reminder email was sent. Participants were also asked to indicate their preferred method for administering the assessments (i.e., over the phone, via Zoom, face-to-face, by post accompanied by written instructions, or an online version of the form). Participants who completed an interview were provided with a koha to acknowledge their involvement.

Given the limited number of potential participants, we did not restrict the number of interviews conducted. It was important to strive to maximise representation across ethnicity, region and participation rates to ensure diverse voices were captured. The number of survey responses and interviews completed across phases according to attendance rates, ethnicity, and region, for teachers and caregivers is presented in Tables 1 and 2 respectively. Attrition rates reflect the percentage of participants who participated in the pre-training evaluation but did not participate in the ex-post evaluation.

Appendix E

Quantitative outcome measures

Child outcome measures

The Young Children's Participation & Environment Measure (YC-PEM).

The YC-PEM (Khetani et al., 2015) is a caregiver-report questionnaire that asks respondents to rate their perception of the frequency, level, and variety of activities that their child participates and engages in. Caregivers provide ratings across five domains representing the home environment section of the YC-PEM: Basic Care Routines, Household Chores, Interactive and Organised Play, Socialising with Friends and Family, and the Home Environment. The first four areas are organised around three foci; frequency of participation for the child (using an 8-point scale from 'never' to 'once or more a day'); involvement level of the child (using a 5-point scale from 'not involved' to 'very involved'); and whether the caregiver would like to see a change in the child (using a 6-point scale from 'No change desired' to 'Yes, participate in a broader variety of activities'). The fifth area, Home Environment, assesses two aspects. The first assesses the impact of environmental features that help or hinder the child's participation in home life and the second assesses the availability of aspects that support children's participation at home (e.g., services in the home such as therapists, supplies, time, and money). Each of these dimensions is measured using a 4-point scale. The YC-PEM has been used with children who demonstrate behaviours consistent with Autism and has generally good internal consistency (participation 0.68 to 0.96) and test-retest reliability (participation scales 0.31-0.93; environment scales 0.91 to 0.94). However, it has not been normed on an Aotearoa New Zealand sample. The YC-PEM primarily provided data pertaining to children's participation in the home environment.

Strengths and Difficulties Questionnaire Parent and Teacher Versions (SDQ-P; SDQ-T).

The SDQ (Goodman, 1997) is a behavioural screening questionnaire that has been used widely in education and health. Teacher, child, and parent-report versions are available. Caregivers completed the SDQ and impact supplement for caregivers of 2-4 year olds and teachers completed the SDQ and impact supplement for educators of 2-4 year olds. Each version consists of 25 questions designed to assess emotional symptoms, conduct problems, hyperactivity, peer relationships, and prosocial behaviour. Section one includes items that are rated on a 3-point scale: 0 (not true), 1 (somewhat true), and 2 (certainly true). A second section comprising five questions, each with aligned rating scales, asks respondents to rate the presence, level, or impact of difficulties regarding emotions, concentration, behaviour, and/or getting on with others. The SDQ has satisfactory internal reliability (e.g., 0.73) and test re-test reliability (e.g., 0.62) (Goodman, 1997; Hawes & Dadds, 2004). The SDQ was selected as it provides a measure of emotional behaviour which was not able to be analysed using the YC-PEM, along with a number of additional outcomes that relate to children's engagement. Furthermore, there are Australian norms available for this data (Hawes & Dadd, 2004) and it has been recommended for use in Aotearoa New Zealand (Harvey, Evans, Barry, Fitzgerald, & Bennett, 2007). It is also widely used in research that includes children with ASD. For the purpose of this evaluation, the 2-4 year old version was selected as the majority of children were in this age range, and we did not have information about which caregivers/teachers cared for children who were over 4 years of age. Teacher respondents completed the evaluation based on a child with with autism, within their centre. A copy of the SDQ is provided in Appendix M.

Caregiver outcome measures

Autism Parenting Stress Index (APSI)

The APSI (Silva & Schalock, 2012) is a 13-item rating scale that measures parental stress. Stress levels are rated by caregivers using a five-point scale: 0 (not stressful) to 5 (so stressful sometimes we feel we can't cope). The tool was developed to identify areas in which parents need additional support with parenting skills and to assess the impact of an intervention on parental stress levels (Silva & Schalock, 2012). The APSI was administered during pre-, post-, and ex-post phases. The

APSI has acceptable internal consistency (α = 0.732-0.834) and test-retest stability (0.882; Silva & Schalock, 2012). A copy of the APSI is provided in Appendix N.

The Incredible Years Parent Strategies Questionnaire for Children with Autism 2–5 years (IYPSQ).

The IYPSQ is a 60-item parent-report questionnaire consisting of seven sections. Section one asks caregivers to rate their confidence in promoting their child's social, emotional, language and academic development using a five-point scale: 1 (very unconfident) to 5 (very confident). Sections 2-5 ask caregivers to rate the frequency with which they use teaching techniques to enhance their child's social and emotional development, language development, and behaviour management strategies: 1 (rarely/never) to 5 (very often). Section 6 asks caregivers to rate the frequency with which they use strategies for working with teachers and school: 1 (never) to 5 (daily). The final section (Section 7) asks caregivers to rate the frequency of their planning and support strategies: 0 (never) to 4 (daily). The psychometric properties of the IYPSQ do not appear to have been reported in the literature. A copy of the IYPSQ is provided in Appendix O.

The Depression, Anxiety, and Stress Scales (DASS-21)

The DASS-21 (Lovibond & Lovibond, 1995) is a 21-item self-report measure that is used to assess features of depression, anxiety, and stress in adults. Respondents are asked to rate the extent to which specific statements apply to them over the past week, using a four-point scale: 0 (never) to 3 (almost always). The DASS-21 provides a score for each subscale and related cut-off scores that indicate symptom severity, viz 'Normal', 'Mild', 'Moderate', 'Severe', or 'Extremely Severe'. The DASS-21 has good psychometric properties (Henry & Crawford, 2005), including adequate reliability (α = .82-.90 for the subscales), and good convergent and discriminative validity. The DASS-21 was used in this evaluation in addition to the APSI, as it provides a more comprehensive measure of caregiver wellbeing and coping (i.e., it assesses caregiver-reported depression and anxiety, in addition to stress levels). The DASS-21 has been used extensively with caregivers of children with autism for this purpose (e.g., (Giallo, Rose, & Vittorino, 2011). A copy of the DASS-21 is provided in Appendix P.

Caregiver and child outcome measures

Parent Programme Satisfaction Questionnaire: Autism Spectrum and Language Delays Programme (PSQ-P).

The PSQ-P assesses caregivers' experiences with the IYA-P training. This tool consists of 37 items, 33 of which require participants to respond using a seven-point scale, with higher ratings reflecting greater progress or satisfaction. One item uses a YES/NO format (i.e., would you like to keep meeting as a group?), and the remaining three items ask caregivers to provide descriptive open-ended answers. The questionnaire consists of six primary categories relating to The Overall Programme; Teaching Format (usefulness); Specific Teaching Techniques (usefulness); Children's progress (change); Evaluation of Parent Group Leaders; Parent Group, and their Opinion. A copy of the PSQ-P is provided in Appendix Q.

Teacher outcome measures

Incredible Years Teacher Strategies Questionnaire for Children with Autism (IYTSQ)

The IYTSQ is a 52-item teacher-report questionnaire that consists of six sections. The first section asks teachers to rate their confidence in promoting social, emotional, language, and academic development of children with ASD on a five-point scale: very unconfident – very confident. Sections 2-4 ask teachers to rate the frequency with which they use teaching techniques to support children's language, social, and emotional development respectively, on a five-point scale: rarely – very often. The final section asks teachers to rate the frequency of their planning and support strategies according to a five-point scale: never – daily. The IYTSQ has been used with teachers who teach children who demonstrate behaviours that are consistent with ASD. No normative data was available for the IYTSQ. A copy of the IYTSQ is provided in Appendix R.

Teacher and child outcome measures

Incredible Years Participant Satisfaction Questionnaire – Helping Preschool Children with Autism Programme (PSQ-T).

The PSQ-T is designed to gather information about participant's experiences with the IYA-T programme. The PSQ-T consists of 36 items, 32 of which require participants to respond using a seven-point scale. Three questions ask participants to provide descriptive open-ended answers, and one item is presented in a Yes/No format (i.e., would you like to keep meeting as a group). The PSQ-T consists of six core categories relating to The Overall Programme; Teaching Format (usefulness); Specific Teaching Techniques (usefulness); Children's progress (change); Evaluation of Group Leaders, Parent/Teacher Group, and Their Opinion. A copy of the PSQ-T is provided in Appendix S.

Long-term outcomes of programme participation

Pediatric Quality of Life Inventory – Generic Core Scales™ (PedsQL; (Varni, 1998).

The PedsQL™ Parent-report for Toddlers (2-4 years) is a parent-report measure of children's quality of life and wellbeing. Caregivers are asked to rate the extent to which behaviours were problematic over the previous month using a five-point Likert scale ranging from 0 (never a problem), 1 (almost never a problem), 2 (sometimes a problem), 3 (often a problem), or 4 (almost always a problem). Items are categorised according to physical (e.g., participating in active play), emotional (e.g., feeling afraid or scared), social (e.g., playing with other children), and school functioning (e.g., doing the same preschool/daycare/kindergarten activities as other children his or her age). These ratings are used to calculate subscale and total scores for each domain. The PedsQL™ Generic Core Scales have been shown to have good internal consistency (Varni, Burwinkle, Seid, & Skarr, 2003) The PedsQL™ was used as it enabled the evaluation team to assess emotional functioning; an intended outcome of programme participation. It also provided an overall measure of child wellbeing which, according to the IYA theory, is a potential long-term benefit of programme participation. A copy of the PedsQL™ is provided in Appendix T**.**

Appendix F

Quantitative data analysis

Descriptive data

Descriptive data is presented for each of the child, caregiver and teacher outcome measures. This includes mean, median, standard deviation (SD), and minimum and maximum possible scores (computed using Jamovi – see Jamovi.com). Frequency distributions have been provided for the PSQ-P/T post-training scores, the SDQ, PedsQL™, and DASS-21 (Cohort 1 only) ex-post training scores, and the APSI and IYTSQ pre-, post-, and ex-post training scores. Frequency distributions provide information about data skews, outliers, multi-modal distribution, and evidence of non-normality of data.

Modified Brinley Plots

The YC-PEM, APSI, and IYTSQ data were analysed using modified Brinley Plots and by calculating effect size estimates. Modified Brinley Plots are a type of scatterplot that displays individuals' response to treatment within the context of information about the group response (Blampied, 2017). For this report, modified Brinley Plots have been used to display individual change over time to identify the systematic effects of programme participation. Each respondent's score at time 2 (e.g., their post-score) is plotted against their score at a previous time (time 1, e.g., their pre-training score). Little or no therapeutic change is shown when individuals' data points lie on or near the 45^0 diagonal line, the line of no change (i.e., X = Y) (Blampied, 2017). Depending on the direction of therapeutic change (i.e., whether a score decrease or increase reflects improvement) data points above and below the diagonal line indicate varying degrees of change for each case.

The pre-to-post Effect Size (ES) was calculated using Cohen's *d* (calculated using ESCI software developed by Cumming, 2012; see also Lakens, 2013). Negative *d* values indicate a change in a clinically desirable direction if decreases in scores reflect improvement on a measure, and vice versa. Interpretation of effect sizes were based on guidelines presented by Cohen (1988); small $d \leq 0.2$-.3), medium $d = \sim 0.5$, and large $d \geq 0.8$). In addition to reporting *d* we also report the 95% Confidence Interval (95%CI) on *d*. This interval indicates the precision with which *d* is estimated, in that it is the range of values within which *d* would fall 95% of the time were the study to be repeated a large number of times. The 95% CI is given after *d* in [ ]. Unlike *d*, which is an estimate that is independent of sample size, the 95% CI is influenced by sample size, with the precision of the estimate of *d* increasing as sample size increases. Thus, in this report, the 95% CIs are affected by attrition from pre- to post-, and from post- to ex-post phases. Note that where the lower and upper boundaries of the 95% CI include 0, we cannot reject the hypothesis that the ES = zero (i.e., there is no effect). If that were observed, a *t*-test on the means would not be statistically significant at alpha = .05, however, if the CI does not cross zero then the test would be statistically significant at that alpha level.

Correlational analyses

The relationship among several variables, such as the number of sessions attended, region, ethnicity, and outcome variables such as the use of teacher or caregiver strategies was explored for Cohort 1 and 2 by calculating Pearson Product Moment Correlation Coefficients, *r*, (using Jamovi). This data has not been presented, as due to the small sample size and lack of variation, very few statistically significant non-zero correlations were detected. This data is, however, available upon request. For some data we calculated the point-biserial *r*, where one of the variables is a dummy coding variable (e.g., 1 = female, 2 = male). These correlations may be used to evaluate the influence of the coding variable (e.g, gender) on the second continuous variable (such as a gain score on some outcome measure).

Appendix G

Qualitative measures and data analysis procedures

Before organising interviews with the participants, the evaluation team consulted with the Kaiārahi Māori and Kaiārahi Pasifika in the College of Education, Health, and Human Development at the University of Canterbury regarding culturally responsive interview practices.

The semi-structured interview consisted of 10 and 14 open-ended questions for Cohort 1 and 2, respectively. Interviews ranged between 9.07.02 and 48.12 minutes with an average interview length of 21.57 and 23.80 minutes respectively, for teachers and caregivers. All participants responded to each of the interview questions and prompts were provided, where needed, to ensure the participants understood what was being asked of them. One caregiver from Cohort 1 had some difficulty responding to the interview questions in English, indicating that she would have liked the option to speak in her first language, Arabic. One teacher from Cohort 2 did not consent to her interview being audio-recorded. Handwritten notes were taken instead. Four participants were interviewed via Skype/Zoom, two face-to-face, and the remaining 57 participants completed their interview via phone.

Before starting each interview, the researcher confirmed that the participant consented to their interview being recorded for transcription purposes, and assured them that their interviews would not be shared with anyone outside of the evaluation team. All participants from cohort 1 agreed to have their interviews recorded. One teacher from cohort 2 did not consent to her interview being audio-recorded. Handwritten notes were taken instead. During each interview, interviewers recorded notes on the main themes that were important to each participant. Upon completion, the interview was transcribed verbatim by a trained researcher. These notes informed the qualitative analysis.

All transcripts were imported into NVivo 12 (QSR International, 1999) and were auto-coded according to each of the interview questions. The interview data was analysed using inductive thematic analysis (Guest, MacQueen, & Namey, 2012). Given the lack of research currently available on the impact of IYA on teachers and caregivers in Aotearoa New Zealand, it was not possible to use past research to inform the themes and codes used to analyse the interview data. As such, grounded theory (Strauss & Corbin, 1990), an inductive methodological approach, was used to gather, analyse and interpret the qualitative data collected from participants in this study. An inductive approach was used to identify key themes that were relevant to the participants in this study. Thematic analysis is the process of searching and identifying key themes that emerge from each of the interviews and to identify common themes across all participants (Braun & Clarke, 2006), and Braun and Clarke's (2006) six-step guide to conducting qualitative analysis was used for the analysis of all the interviews. This approach provides a systematic structure for categorising participants' responses to each of the interview questions. First, each interview was read and re-read by two members of the evaluation team to ensure they were familiar with the data before conducting the analysis. In this study, 100% of the interviews, codes, and key themes were reviewed by a second researcher trained in using NVivo to assess inter-coder reliability. Inter-coder reliability measures the extent to which two or more coders agree on the coding of the data. It is an important stage in qualitative analysis as it increases objectivity and validity in the interpretation of the data (Lavrakas, 2008). Inter-coder reliability for this study was high (ICCs > .89).

Next, initial codes for each interview question were generated by re-reading participant's responses for the interview question. At a broad level, initial codes (i.e., labels used to identify themes; Wong, 2008) emerged as the researchers read each participant's responses. Once the researchers had established initial codes for each interview question, each code was closely examined to ensure that the responses coded were consistent and reflective of that code across the participants. Where there was disagreement between coders, a discussion about the responses and codes took place until a consensus was reached. The evaluation team then reviewed, defined and named the key themes that emerged from teacher and caregiver interviews. A comparison between and within teachers and caregivers was also conducted to identify similarities, differences and relationships between participants' experience of IYA. Each of the key themes that emerged from teacher and caregiver interviews, as they relate to each of the evaluation aims, has been summarised below. Similarities and differences between cohort 1 and cohort 2 interview responses are provided in the following sections.

Finally, an inductive qualitative content analysis (Neuendorf, 2019) was used to highlight the proportion of teachers and caregivers (as a percentage of those who participated in the interview for each cohort) who are still using communication, social and emotional regulation, and engagement strategies that were learnt while participating in the IYA programme. This quantifiable qualitative data allows the reader to identify the specific IYA strategies that teachers and caregivers have found most useful and are still using during the ex-post phase.

Appendix H
Interview Questions for Parents/Caregivers – Cohort 1

1. What interested you in participating in the IYA programme?

2. Can you tell me about what it was like to participate in the IYA programme – what was your experience?

3. Were there any barriers to participation and engagement in the programme?

4. Were there any factors that supported your participation and engagement in the programme?

5. Did you learn any new strategies as a result of your participation in the IYA programme, relating to:

   Communication

   - *If so, what were these strategies?*
   - *Are you still using them - why or why not?*
   - *Were they effective?*

   Social and emotional regulation

   - *If so, what were these strategies?*
   - *Are you still using them - why or why not?*
   - *Were they effective?*

   Engagement

   - *If so, what were these strategies?*
   - *Are you still using them - why or why not?*
   - *Were they effective?*

6. Have you shared any of what you learnt through participating in the IYA programme, with others? If yes,

   - *Who have you shared this learning/strategies with?*
   - *What have you shared?*
   - *Do you know if they have used any of these strategies? If so, what?*

7. Has your participation in the programme had any impact of your own wellbeing?

8. Has your participation in the programme had any impact of your own sense of parenting confidence and competence?

9. Has your participation in the IYA programme, had any impact on the home-pre-school relationship and communication?

10. How does your child feel about going to preschool? Have you observed any changes in your child's participation, inclusion, and attendance?

Appendix I
Interview Questions for Parents/Caregivers – Cohort 2

1. What interested you in participating in the IYA programme?

2. Have you noticed any changes in your child's communication since you completed the IYA programme? If so, what have been some of the developments?

3. Are there any specific strategies that you learnt during the IYA programme that you think have supported these changes in your child's communication? If so, what are these strategies?

4. Have you noticed any changes in your child's emotional regulation (relating to helping your child control their emotionsand to problem solve) since you completed the IYA programme? If so, what have been some of the developments?

5. Are there specific strategies that you learnt during the IYA programme that you think have supported these changes in your child's emotional regulation? If so, what are these strategies?

6. Have you noticed any changes in your child's engagement (relating to your child's participation in different family activities, social activities etc) since you completed the IYA programme? If so, what have been some of the developments?

7. Are there any specific strategies that you learnt during the IYA programme that you think havesupported these changes in your child's engagement? If so, what are these strategies?

8. Have you shared any of what you learnt through participating in the IYA programme, with others? If yes,

    - *Who have you shared this learning/strategies with?*
    - *What have you shared?*
    - *Do you know if they have used any of these strategies? If so, what?*

9. Has your participation in the programme had any impact of your own wellbeing?

10. Has your participation in the programme had any impact of your own sense of parenting confidence and competence?

11. Has your participation in the IYA programme, had any impact on the home-pre-school relationship and communication?

12. How does your child feel about going to preschool? Have you observed any changes in your child's participation, inclusion, and attendance?

13. Are you continuing to see benefits as a result of the programme, six month on? If so, what?

14. Have there been any unexpected outcomes for you, your child, whānau, or wider community?

Appendix J
Interview Questions for Kaiako/Teachers – Cohort 1

1. What was your motivation for participating in the IYA programme?

2. Can you tell me about what it was like to participate in the IYA programme – what was your experience?

3. Were there any barriers to participation and engagement in the programme?

4. Were there any factors that supported your participation and engagement in the programme?

5. Did you learn any new strategies as a result of your participation in the IYA programme, relating to:

   Communication

   - *If so, what were these strategies?*
   - *Are you still using them - why or why not?*
   - *Were they effective?*

   Social and emotional regulation

   - *If so, what were these strategies?*
   - *Are you still using them - why or why not?*
   - *Were they effective?*

   Engagement

   - *If so, what were these strategies?*
   - *Are you still using them - why or why not?*
   - *Were they effective?*

6. Have you shared any of what you learnt through participating in the IYA programme, with others? If yes,

   - *Who have you shared this learning/strategies with?*
   - *What have you shared?*
   - *Do you know if they have used any of these strategies? If so, what?*

7. Have you applied any of the strategies that you learnt, to other tamariki in your school/centre? Please explain.

8. Has your participation in the programme had any impact of your own sense of confidence and competence as a teacher?

9. Has your participation in the IYA programme, had any impact on the pre-school/school-home relationship and communication?

10. Have you observed any changes in participation, inclusion, and attendance, for the child in your centre/school?

Appendix K
Interview Questions for Kaiako/Teachers – Cohort 2

1. What interested you in participating in the IYA programme?

2. Have you noticed any changes in the target child's (or children's) communication since you completed the IYA programme? If so, what have been some of the developments?

3. Are there any specific strategies that have supported these changes in children's communication? If so, what are these strategies?

4. Have you noticed any changes in the target child's (or children's) emotional regulation (relating to helping children control their emotions and to problem solve) since you completed the IYA programme? If so, what have been some of the developments?

5. Are there any specific strategies that have supported these changes in children's emotional regulation? If so, what are these strategies?

6. Have you noticed any changes in the target child's (or children's) engagement (relating to your child's participation in different family activities, social activities etc) since you completed the IYA programme? If so, what have been some of the developments?

7. Are there any specific strategies that have been supported these changes in children's engagement? If so, what are these strategies?

8. Have you shared any of what you learnt through participating in the IYA programme, with others? If yes,

   - *Who have you shared this learning/strategies with?*
   - *What have you shared?*
   - *Do you know if they have used any of these strategies? If so, what?*

9. Have you applied any of the strategies that you learnt, to other tamariki in your school/centre? Please explain.

10. Has your participation in the programme had any impact of your own sense of confidence and competence as a teacher?

11. Has your participation in the IYA programme, had any impact on the pre-school/school-home relationship/partnership and communication?

12. Have you observed any changes in participation, inclusion, and attendance, for the child in your centre/school?

13. Are you continuing to see benefits as a result of the programme, six month on? If so, what?

14. Have there been any unexpected outcomes for you, the target child (or children), whānau, your service or wider community?

Appendix L

Summary of Approach to Data Collection and Analysis

Evaluation question	Quantitative measures	Proposed analysis	Qualitative measures
To what extent have the IYA programmes contributed to increased engagement, emotional regulation and communication skills of young children demonstrating behaviours associated with autism?	YC-PEM (pre-, post-, and ex-post data) including: • percentage of activities child participates in • frequency of child's participation at home • average involvement of child in home activities • percentage of activities where caregivers would like to see change in participation	Modified Brinley Plots assessing change across phases Effect size measures	Cohort 1 - Teacher and Parent interview questions 5 and 10 (see Appendices L and N). Cohort 2 – caregiver and teacher interview questions 2-7 (see Appendices M and O).
	Incredible Years Parent Programme Satisfaction Questionnaire (post-data only; items 1-3)	Descriptive data and frequency distributions **Note -** data presented according to ethnicity, region, and attendance rates available upon request though not presented in report or analysed further due to low N, or insufficient variance.	
	Incredible Years Teacher Programme Satisfaction Questionnaire (post-data only; items 4-6)	Descriptive data and frequency distributions **Note -** data presented according to ethnicity, region, and attendance rates available upon request though not	

		presented in report or analysed further due to low N, or insufficient variance.	
	Strengths and Difficulties Questionnaire – Parent and Teacher Report (ex-post data only). Subscale and total scores.	Descriptive data and frequency distributions **Note -** data presented according to ethnicity, region, and attendance rates available upon request though not presented in report due to low N, or insufficient variance.	
To what extent have the IYA programmes contributed to increased wellbeing and coping skills of caregivers enabling them to better support their child?	Autism Parent Stress Index total scores (pre, post-, and ex-post data)	Modified Brinley Plots assessing change Effect size measures	Cohort 1 - Parent interview questions 5, 7, and 8 (see Appendix P) Cohort 2 - Parent interview questions 9 and 10 (see Appendix Q)
	Incredible Years Parenting Strategies Questionnaire total scores (ex-post data only; total scores)	Descriptive data and frequency distributions **Note -** data presented according to ethnicity, region, and attendance rates available upon request though not presented in report due to low N, or insufficient variance.	
	Incredible Years Parent Programme Satisfaction Questionnaire (post-data; items 4 and 7).	Descriptive data and frequency distributions **Note -** data presented according to ethnicity, region, and attendance rates available upon request though not presented in report due to low N, or insufficient variance.	

	Depression, Anxiety, and Stress Scale subscale and total scores (ex-post data only)	Descriptive data and frequency distributions **Note -** data presented according to ethnicity, region, and attendance rates available upon request though not presented in report due to low N, or insufficient variance.	
To what extent have the IYA programmes contributed to increased teacher capability to help children demonstrating behaviours associated with autism?	Incredible Years Teacher Strategies Questionnaire (pre-, post-, and ex-post data; total scores).	Modified Brinley Plots assessing change Effect size measures	Cohort 1 - teacher interview questions 5, 7, and 8 (see Appendix R). Cohort 2 – teacher interview question 10 (see Appendix S).
	Incredible Years Teacher Programme Satisfaction Questionnaire (post-data only; items 2 and 3)	Descriptive data and frequency distributions **Note -** data presented according to ethnicity, region, and attendance rates available upon request though not presented in report due to low N, or insufficient variance.	
	Pediatric Quality of Life Inventory™ (ex-post data only). Subscale and total scores.	Descriptive data and frequency distributions **Note -** data presented according to ethnicity, region, and attendance rates available upon request though not presented in report due to low N, or insufficient variance.	
To what extent have the IYA programmes contributed to longer term and unintended benefits for those involved		Correlation between participation rates and child outcomes: • YC-PEM variables • Incredible Years Parent	Cohort 1 - parent and teacher interview questions 6 and 9 (see Appendices L and N). Cohort 2 – parent and teacher

and the wider communities?		Programme Satisfaction Questionnaire (post- data; items 1-3) • Incredible Years Teacher Programme Satisfaction Questionnaire (items 4-6) • PedsQL™ items and total • SDQ items and total Correlation between participation rates and parent outcomes: • APSI scores • DASS-21 scores – items and total • Incredible Years Parent Programme Satisfaction Questionnaire (post- data; items 4 and 7). • Incredible Years Parenting Strategies Questionnaire total scores Correlation between participation rates and teacher outcomes: • Incredible Years Teacher Strategies Questionnaire (pre-, post-, and ex-post data; total scores). • Incredible Years Teacher Programme Satisfaction Questionnaire (post- data only; items 2 and 3) Data not reported in body of report due in most cases to the absence of	questions 11-14 (see Appendices M and O).

	correlations resulting from limitations in the data.

Appendix M
Strengths and Difficulties Questionnaire (SDQ-P2-4)

Strengths and Difficulties Questionnaire P 2-4

For each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain. Please give your answers on the basis of your child's behaviour over the last six months.

Your child's name ..... Male/Female

Date of birth.....

	Not True	Somewhat True	Certainly True
Considerate of other people's feelings	☐	☐	☐
Restless, overactive, cannot stay still for long	☐	☐	☐
Often complains of headaches, stomach-aches or sickness	☐	☐	☐
Shares readily with other children, for example toys, treats, pencils	☐	☐	☐
Often loses temper	☐	☐	☐
Rather solitary, prefers to play alone	☐	☐	☐
Generally well behaved, usually does what adults request	☐	☐	☐
Many worries or often seems worried	☐	☐	☐
Helpful if someone is hurt, upset or feeling ill	☐	☐	☐
Constantly fidgeting or squirming	☐	☐	☐
Has at least one good friend	☐	☐	☐
Often fights with other children or bullies them	☐	☐	☐
Often unhappy, depressed or tearful	☐	☐	☐
Generally liked by other children	☐	☐	☐
Easily distracted, concentration wanders	☐	☐	☐
Nervous or clingy in new situations, easily loses confidence	☐	☐	☐
Kind to younger children	☐	☐	☐
Often argumentative with adults	☐	☐	☐
Picked on or bullied by other children	☐	☐	☐
Often volunteers to help others (parents, teachers, other children)	☐	☐	☐
Can stop and think things out before acting	☐	☐	☐
Can be spiteful to others	☐	☐	☐
Gets along better with adults than with other children	☐	☐	☐
Many fears, easily scared	☐	☐	☐
Good attention span, sees chores or homework through to the end	☐	☐	☐

Do you have any other comments or concerns?

Overall, do you think that your child has difficulties in one or more of the following areas: emotions, concentration, behaviour or being able to get on with other people?

No	Yes- minor difficulties	Yes- definite difficulties	Yes- severe difficulties
☐	☐	☐	☐

If you have answered "Yes", please answer the following questions about these difficulties:

- How long have these difficulties been present?

Less than a month	1-5 months	6-12 months	Over a year
☐	☐	☐	☐

- Do the difficulties upset or distress your child?

Not at all	Only a little	Quite a lot	A great deal
☐	☐	☐	☐

- Do the difficulties interfere with your child's everyday life in the following areas?

	Not at all	Only a little	Quite a lot	A great deal
HOME LIFE	☐	☐	☐	☐
FRIENDSHIPS	☐	☐	☐	☐
LEARNING	☐	☐	☐	☐
LEISURE ACTIVITIES	☐	☐	☐	☐

- Do the difficulties put a burden on you or the family as a whole?

Not at all	Only a little	Quite a lot	A great deal
☐	☐	☐	☐

Signature ..... Date .....

Mother/Father/Other (please specify:)

Thank you very much for your help

Appendix N
Autism Parenting Stress Index

This form should be completed by individuals at the beginning of the programme, and will be used by your provider to track progress, and the Ministry of Education for reporting statistics for and evaluating the IY programme. Your answers will be aggregated and be kept anonymous in any reporting.

	Stress Ratings				
Please rate the following aspects of your child's health according to how much stress it causes you and/or your family by placing an X in the box that best describes your situation.	Not stressful	Sometimes creates stress	Often creates stress	Very stressful on a daily basis	So stressful sometimes we feel we can't cope
Your child's social development	0	1	2	3	5
Your child's ability to communicate	0	1	2	3	5
Tantrums/meltdowns	0	1	2	3	5
Aggressive behavior (siblings, peers)	0	1	2	3	5
Self-injurious behavior	0	1	2	3	5
Difficulty making transitions from one activity to another	0	1	2	3	5
Sleep problems	0	1	2	3	5
Your child's diet	0	1	2	3	5
Bowel problems (diarrhea, constipation)	0	1	2	3	5
Potty training	0	1	2	3	5
Not feeling close to your child	0	1	2	3	5
Concern for the future of your child being accepted by others	0	1	2	3	5
Concern for the future of your child living independently	0	1	2	3	5
	Subtotal				
				Total	

Appendix O
Incredible Years Parent Strategies Questionnaire for Children with Autism (2-5 years)

Incredible Years® Parent Strategies Questionnaire for Children with Autism (2-5 years)

Teacher/Childcare Provider (name): _____

Promoting Social, Emotional, Language and Academic Development in Children with Autism	Very Unconfident	Somewhat Unconfident	Neutral	Confident	Very Confident
1. How confident are you in simplifying and tailoring your language according to your child's individual language development?					
2. How confident are you in identifying the specific ABCs: antecedents (A) that will motivate and prompt your child's target behaviors or words (B) and rewarding its occurrence with positive consequences (C).					
3. How confident are you in being able to get in your child's attention spotlight to engage him or her in social and emotional learning opportunities?					
4. How confident are you in being able to ignore and redirect your child's unwanted behaviors, giving your attention back when she or he behaves in the targeted way?					
5. How confident are you in helping your child regulate his or her emotions?					
6. How confident are you in using puppets and pretend play to teach your child social and emotional skills and to enhance communication?					
7. How confident are you in using your child's sensory likes and dislikes such as auditory, tactile, visual, smell, taste/oral, proprioception (body space/balance/need for movement or stillness) to enhance his or her learning opportunities?					
8. How confident are you in adapting teaching and materials to use your child's most effective learning mode (visual, auditory, motoric, sensory/tactile)?					
9. How confident are you in managing your child's challenging behavior and following through with behavior plans and goals?					
10. How confident are you in working with your child's classroom/early childhood teachers?					
11. How confident are you in setting up structured play dates to help your child practice specific social skills?					
12. How confident are you in developing and using visual supports (e.g., choice boards, command cards) to enhance your child's social, emotional and language learning?					

A. Specific Teaching Techniques to Enhance Language Development In this section we'd like to get your idea of how often you use the following strategies to promote your child's language learning.	Rarely/Never	Sometimes	Half the Time	Often	Very Often
1. Participate in child-directed, narrated play to increase interactive involvement and joint attention from my child.					
2. Use enthusiastic voice tone, songs, imitation, modeling, simple language, repetition and commenting using the "one up rule" to increase my child's verbal communications.					
3. Use descriptive academic coaching language to promote language skills (e.g., colors, shapes, positions, names of objects).					
4. Use visual prompts, gestures, preferred objects, books, and sensory likes, to strengthen language communication and joint interaction.					
5. Use verbal prompts, partial prompts, and pauses to wait for my child to look, gesture, or respond verbally before continuing.					
6. Use puppets to model and engage children in social communication.					

B. Specific Teaching Techniques to Enhance Social Development In this section we'd like to get your idea of how often you use the following strategies to promote your child's social learning.	Rarely/Never	Sometimes	Half the Time	Often	Very Often
1. Use social coaching to model, prompt practice, label, and praise social behaviors such as sharing, waiting, eye contact, helping, listening, asking, turn taking, and initiating an interaction.					
2. Use puppets to model, prompt, label, and practice social behaviors.					
3. Praise and reward my child for using appropriate social friendship skills.					
4. Identify specific social behavior goals for my child according to his/her play stage.					
5. Use books, games, and visual pictures to prompt, signal, and practice targeted social behaviors with my child.					
6. Use sensory social routines to enhance my child's arousal for learning.					
7. Comment on and praise prosocial peer models to increase my child's focus on appropriate social behavior					
8. Use intentional communication to help my child be aware of other children and their needs, interactions and to promote their joint attention and empathy during play activities.					
9. Set up peer playdates to promote my child's interactions with others and provide social coaching during these interactions.					

C. Specific Teaching Techniques to Enhance Emotional Development and Self-regulation In this section we'd like to get your idea of how often you use the following strategies to promote your child's emotional development.	Rarely/Never	Sometimes	Half the Time	Often	Very Often
1. Use emotion coaching to model, prompt, and label emotion language in my child.					
2. Model emotion language through words and facial expressions for my child.					
3. Use persistence coaching language to encourage my child's continuous effort to do a task. (e.g., "that's hard, but you keep trying!")					
4. Use pictures cards and photographs that portray people in various feeling states to teach my child emotion vocabulary and prompt his or her to use these visuals to express emotions.					

continued on next page

C. Specific Teaching Techniques to Enhance Emotional Development and Self-regulation *(continued)* In this section we'd like to get your idea of how often you use the following strategies to promote your child's emotional development.	Rarely/Never	Sometimes	Half the Time	Often	Very Often
5. Help my child understand how others feel through modeling, acknowledgement, mirroring back, labeling feelings, voice tone, and intentional communication.					
6. Recognize early cues of emotional dysregulation in my child and prompt his or her use of calm down strategies.					
7. Focus more of my attention on positive emotions than on negative emotions.					
8. When coaching negative emotions, also coach appropriate coping strategies (e.g , you are feeling mad but you are taking three deep breaths to calm your body down).					
9. Use story books to teach my child emotion words and promote empathy and guided practice.					
10. Use puppets that share their feelings to prompt my child's emotional language, social responses and empathy for others.					
11. Use visual self-regulation cards such as calm down thermometer, breathing, or turtle picture with my child.					

D. Specific Teaching to Enhance Behavior Management Strategies In this section we'd like to get your idea of how often you use the following strategies to promote your child's positive behaviors and decrease their inappropriate behaviors.	Rarely/Never	Sometimes	Half the Time	Often	Very Often
1. Give my child choices when possible.					
2. Use visual prompts, verbal and nonverbal signals and/or command cards to remind my child of our household rules, schedule, and appropriate behavior.					
3. Prepare my child for transitions with a predictable and visual routine.					
4. Give face-to-face praise paired with smiles, eye contact, enthusiastic tone of voice, and sensory likes to reward desired behavior.					
5. Reward self-regulation, joint attention, and responses to instructions with child's sensory likes.					
6. Wait for my child's response when asking a question about his or her wants.					
7. Use visual cues, gestures, and simple words to distract and redirect when my child is angry or frustrated.					
8. Ignore misbehavior that is not dangerous to my child or another child.					
9. Help other siblings or peers to understand my child's misbehavior and to respond to it with understanding and without reinforcing its occurrence.					
10. Set up problem solving scenarios with puppets to practice appropriate social responses to situations that are difficult for my child. (e.g., ask a friend to play, going to a birthday party)					

E. Strategies for Working with Teachers and School	Never	1–2 Times a Year	Once a Month	Once a Week	Daily
1. Use a system for regular school communication about my child (face-to-face communication, texts, notes, calls, meetings).					
2. Ask my child's teacher to tell me about how I can help support my child's school learning goals at home.					
3. Set up opportunities for to participate in classroom activities.					

continued on next page

E. Strategies for Working with Teachers and School *(continued)*	Never	1–2 Times a Year	Once a Month	Once a Week	Daily
4. Partner with teachers to provide ideas, materials, and support for classroom activities.					
5. Share with teachers my awareness of my child's sensory likes and dislikes and how these can be used to help motivate my child's learning.					
6. Share with teachers the ABC of behavior change in my child.					
7. Collaborate with teachers on a home-school behavior plan and share goals for my child.					
8. Becoming more aware of local opportunities to attend parent groups specifically for parents of children with autism.					

F. Planning and Support	Never	1–2 Times a Year	Once a Month	Once a Week	Daily
1. Review my progress in achieving the goals for my child and myself.					
2. Collaborate with other parents for solutions and support.					
3. Read the *Incredible Years Parent Book*.					
4. Manage my stress level utilizing positive cognitive strategies and gaining support from friends, family and teachers when needed.					

Appendix P
DASS-21

DASS 21 NAME _____ DATE _____

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.
The rating scale is as follows:

0 Did not apply to me at all - NEVER

1 Applied to me to some degree, or some of the time - SOMETIMES

2 Applied to me to a considerable degree, or a good part of time - OFTEN

3 Applied to me very much, or most of the time - ALMOST ALWAYS

		N	S	O	AA	FOR OFFICE USE D	A	S
1	I found it hard to wind down	0	1	2	3			
2	I was aware of dryness of my mouth	0	1	2	3			
3	I couldn't seem to experience any positive feeling at all	0	1	2	3			
4	I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3			
5	I found it difficult to work up the initiative to do things	0	1	2	3			
6	I tended to over-react to situations	0	1	2	3			
7	I experienced trembling (eg, in the hands)	0	1	2	3			
8	I felt that I was using a lot of nervous energy	0	1	2	3			
9	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3			
10	I felt that I had nothing to look forward to	0	1	2	3			
11	I found myself getting agitated	0	1	2	3			
12	I found it difficult to relax	0	1	2	3			
13	I felt down-hearted and blue	0	1	2	3			
14	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3			
15	I felt I was close to panic	0	1	2	3			
16	I was unable to become enthusiastic about anything	0	1	2	3			
17	I felt I wasn't worth much as a person	0	1	2	3			
18	I felt that I was rather touchy	0	1	2	3			
19	I was aware of the action of my heart in the absence of physicalexertion (eg, sense of heart rate increase, heart missing a beat)	0	1	2	3			
20	I felt scared without any good reason	0	1	2	3			
21	I felt that life was meaningless	0	1	2	3			
					TOTALS			

Appendix Q
Parent Programme Satisfaction Questionnaire (PSQ-P)

The Incredible Years

Parent Program Satisfaction Questionnaire
Autism Spectrum & Language Delays Program

(Hand out at end of the program)

Participant's Name _____ Date_____

The following questionnaire is part of our evaluation of the Autism Spectrum & Language Delays Parenting Program that you have participated in. It is important that you answer as honestly as possible. The information obtained will help us to evaluate and continually improve the program we offer. Your cooperation is greatly appreciated. All responses will be strictly confidential.

A. The Overall Program

Please circle the response that best expresses how you honestly feel at this point as a result of participating in this program.

1. My child's social and emotional skills are

considerably worse | worse | slightly worse | the same | slightly improved | improved | greatly improved

2. My child's pre-academic skills for language, reading readiness, and persistence at a task are

considerably worse | worse | slightly worse | the same | slightly improved | improved | greatly improved

3. My child's self-regulation and imaginary play skills are

considerably worse | worse | slightly worse | the same | slightly improved | improved | greatly improved

4. My overall feelings about my personal progress at using the autism spectrum/language delays parenting skills are that I am

very pessimistic | pessimistic | slightly pessimistic | neutral | slightly optimistic | optimistic | very optimistic

5. I feel that the approach used to strengthen my child's social and emotional behaviors in this program is

very inappropriate | inappropriate | slightly inappropriate | neutral | slightly appropriate | appropriate | greatly appropriate

6. Would you recommend the program to a friend or relative?

strongly not recommend	not recommend	slightly not recommend	neutral	slightly recommend	recommend	strongly recommend

7. My overall feeling about achieving my goals for my child and family in this program is

very negative	negative	slightly negative	neutral	slightly positive	positive	very positive

B. Teaching Format

Usefulness

In this section, we would like you to indicate how useful each of the following types of teaching is for you now. Please circle the response that most clearly describes your opinion.

1. Content of information presented was

extremely useless	useless	slightly useless	neutral	somewhat useful	useful	extremely useful

2. Demonstration of parenting skills through the use of video vignettes was

extremely useless	useless	slightly useless	neutral	somewhat useful	useful	extremely useful

3. Group discussion of parenting skills was

extremely useless	useless	slightly useless	neutral	somewhat useful	useful	extremely useful

4. Practice of coaching and pretend play skills at home with your child was

extremely useless	useless	slightly useless	neutral	somewhat useful	useful	extremely useful

5. Reading chapters from the *Incredible Years* or *Incredible Toddlers* book was

extremely useless	useless	slightly useless	neutral	somewhat useful	useful	extremely useful

6. Weekly handouts (e.g., spotlighting tips & others) were

extremely useless	useless	slightly useless	neutral	somewhat useful	useful	extremely useful

7. Use of practice or role plays during group sessions were

extremely useless	useless	slightly useless	neutral	somewhat useful	useful	extremely useful

C. Specific Parenting Techniques

Usefulness

In this section, we would like to get your ideas of how useful each of the following techniques is in improving your interactions with your child. Please circle the response that most accurately describes the usefulness of the technique.

1. Narrated child-directed play

extremely useless | useless | slightly useless | neutral | somewhat useful | useful | extremely useful

2. Academic and persistence coaching

extremely useless | useless | slightly useless | neutral | somewhat useful | useful | extremely useful

3.Social coaching

extremely useless | useless | slightly useless | neutral | somewhat useful | useful | extremely useful

4. Emotion coaching

extremely useless | useless | slightly useless | neutral | somewhat useful | useful | extremely useful

5. Using pretend play and puppets

extremely useless | useless | slightly useless | neutral | somewhat useful | useful | extremely useful

6. Using emotional self-regulation skills

extremely useless | useless | slightly useless | neutral | somewhat useful | useful | extremely useful

7. Using praise and rewards

extremely useless | useless | slightly useless | neutral | somewhat useful | useful | extremely useful

8. Limit setting and managing misbehavior

extremely useless | useless | slightly useless | neutral | somewhat useful | useful | extremely useful

D. Evaluation of Parent Group Leaders

In this section we would like you to express your opinions about your parent group leader(s). Please circle the response to each question that best describes how you feel.

Group Leader #1_____

(name)

1. I feel that the leader's teaching was

very poor	poor	slightly below average	average	slightly above average	high	superior

2. The leader's preparation was

very poor	poor	slightly below average	average	slightly above average	high	superior

3. Concerning the leader's interest and concern in me and my child, I was

extremely dissatisfied	dissatisfied	slightly dissatisfied	neutral	slightly satisfied	satisfied	extremely satisfied

4. At this point, I feel that the leader in the program was

extremely unhelpful	unhelpful	slightly unhelpful	neutral	slightly helpful	helpful	extremely helpful

If more than one group leader was involved in your program, please fill in the following. (Go to Section E if only one leader was involved.)

Group Leader #2_____

(name)

1. I feel that the leader's teaching was

very poor	poor	slightly below average	average	slightly above average	high	superior

2. The leader's preparation was

very poor	poor	slightly below average	average	slightly above average	high	superior

3. Concerning the leader's interest and concern in me and my child, I was

extremely dissatisfied	dissatisfied	slightly dissatisfied	neutral	slightly satisfied	satisfied	extremely satisfied

4. At this point, I feel that the leader in the program was

extremely unhelpful	unhelpful	slightly unhelpful	neutral	slightly helpful	helpful	extremely helpful

E. Parent Group

In this section, we'd like to get your ideas about your group. Please circle the response that describes how you feel.

1. I feel the group was

very unsupportive	unsupportive	somewhat unsupportive	neutral	somewhat supportive	supportive	very supportive

2. Concerning other group members' interest in me and my child, I felt they were

very uninterested	uninterested	somewhat uninterested	neutral	somewhat interested	interested	very interested

3. I would like to keep meeting as a group

YES NO

4. How likely is it that you will continue meeting with one or more of the parents in your group?

highly unlikely	unlikely	somewhat unlikely	neutral	somewhat likely	likely	very likely

F. Your Opinion

1. How could the program have been improved to help you more?

2. At this time do you feel the need for additional parenting assistance? Please elaborate.

3. What did you see as the main benefit of the Autism Spectrum and Language Delays program?

Thank you for your patience in filling out all of these questionnaires. Your input is very much appreciated, and really helps us to plan future programs.

Appendix R

Incredible Years Teacher Strategies Questionnaire for Children with Autism (2-5 years; IYTSQ)

This form should be completed by individuals at the beginning of the programme, and will be used by your provider to track progress, and the Ministry of Education for reporting statistics for and evaluating the IY programme. Your answers will be aggregated and be kept anonymous in any reporting.

	Very unconfident	Somewhat unconfident	Neutral	Confident	Very confident
Promoting Social, Emotional, Language and Academic Development in Children with Autism					
1. How confident are you in supporting language development for students with autism?					
2. How confident are you in simplifying and tailoring your language according to each student's individual language development?					
3. How confident are you in identifying the specific ABCs: antecedents (A) that will motivate and prompt an individual child's learning of specific target behaviours or words (B) and rewarding its occurrence with positive consequences (C)?					
4. How confident are you in being able to get in your student's attention spotlight to engage him or her in social and emotional learning opportunities?					
5. How confident are you in being able to ignore and redirect unwanted behaviours, giving your attention back when the student behaves in the targeted way?					
6. How confident are you in helping students with autism regulate their emotions?					
7. How confident are you in using puppets and pretend play to teach your students social and emotional skills and to enhance communication?					
8. How confident are you in using students' sensory likes and dislikes such as auditory, tactile, visual, smell, taste/oral, proprioception (body space/balance/need for movement or stillness) to enhance learning opportunities?					
9. How confident are you in adapting instruction and materials through using children's most effective learning mode (visual, auditory, motoric, sensory/tactile)?					

10. How confident are you in managing challenging behaviour of children with autism and following through with behaviour plans?					
11. How confident are you in working with parents of students with autism in your classroom or early childhood centre?					
12. How confident are you in setting up structured opportunities to help students with autism practice and develop specific social skills?					
13. How confident are you in developing and using visual supports, choice boards and sequenced pictures to enhance the student's learning of social, emotional and language development?					

	Rarely / Never	Sometimes	Half the time	Often	Very often
Specific teaching technique to enhance language development					
1. Participated in student-directed, narrated play to increase interactive involvement and joint attention.					
2. Use enthusiastic voice tone, songs, imitation, modelling, simple language, repetition and commenting using the "one up rule" to increase the students' verbal communications.					
3. Use descriptive academic coaching language to promote language skills (e.g., colours, shapes, positions, names of objects).					
4. Use visual prompts, gestures, preferred objects, books, and sensory likes, to strengthen language communication and joint interaction.					
5. Use verbal prompts, partial prompts, and pauses to wait for the student to look, gesture or respond verbally before continuing.					
6. Use puppets to model and engage children in social communication.					
Specific teaching technique to enhance social development					

1. Use social coaching to model, prompt practice, label, and praise social behaviours such as sharing, waiting, eye contact, helping, listening, asking and initiating an interaction.					
2. Use puppets to model, prompt, label, and practice social behaviours.					
3. Praise and reward children for using appropriate social friendship skills.					
4. Individualise and identify specific social behaviour goals to be taught for each child according to his/her play stage.					
5. Use books, games, and visual pictures to prompt, signal, and practice targeted social behaviours.					
6. Use prosocial peer models to increase child's focus on appropriate social behaviour.					
7. Use normal social routines such as circle time, snack time, beginning and end of day rituals to promote and practice targeted social behaviours.					

	Rarely / Never	Sometimes	Half the time	Often	Very often
Specific teaching techniques to enhance emotional development and self-regulation					
1. Use emotion coaching to model, prompt, and label emotion language.					
2. Use persistence coaching language to encourage a child's continuous effort to do a task. (e.g., "That's hard, but you keep trying!")					
3. Use pictures and photographs that portray people in various feeling states to teach emotion vocabulary and prompt children to use these visuals to express their emotions.					
4. Help students understand how others feel through modelling, acknowledgment, mirroring back, labelling feelings, voice tone, and intentional communication.					
5. Recognise early cues of emotional dysregulation and prompt student's use of calm down strategies.					
6. Focus more teacher attention on positive emotions than on negative emotions.					
7. When coaching negative emotions, also coach appropriate coping strategies (e.g., you are feeling mad, but you are taking three deep breaths to calm your body down).					
8. Use story books to teach emotion words and promote empathy and guided practice.					
9. Use puppets that share their feelings to prompt student's emotional language, social responses and empathy for others.					
10. Use visual self-regulation cards such as calm down thermometer, breathing or turtle picture.					

	Never	1-2 Times a Year	Once a Month	Once a Week	Daily
Strategies for promoting parent involvement					
1. Use a system for regular communication with parents (face-to-face communication, texts, notes home, telephone hours, bulletin board, newsletters).					
2. Focus on giving positive feedback to parents about their child's achievements and progress, however small.					
3. Ask parents how they want to be involved.					
4. Ask parents to tell you about their child and his or her sensory likes and dislikes.					
5. Set up opportunities for parents to observe in the classroom and participate in classroom activities.					
6. Teach parents how to do academic, social, persistence, and emotional coaching at home to reinforce their child's learning in the classroom or early childhood centre.					
7. Involve parents as a source for ideas, materials, and support for early childhood centre.					
8. Share with parents your awareness of the child's sensory likes and dislikes and how these can be used to help motivate their child's learning.					
9. Teach parents the ABC of behaviour change.					
10. Collaborate with parents on a home-school behaviour plan and share goals for student.					
11. Make home visits.					
12. Make parents aware of local opportunities to attend parent groups specifically for parents of children with autism.					
Planning and Support					
1. Review my progress in achieving goals for individual student behaviour plans.					

2. Collaborate with other teachers for solutions and support.					
3. Read the Incredible Years Teacher Book and Parent book.					
4. Manage my stress level utilizing positive cognitive strategies and gaining support when needed.					

Appendix S
Teacher Programme Satisfaction Questionnaire (PSQ-T)

The Incredible Years®

Final Participant Satisfaction Questionnaire
Helping Preschool Children with Autism Program

(To be completed at end of the program)

Participant's Name _____ Date_____

The following questionnaire is part of our evaluation of the ***Helping Preschool Children with Autism: Teachers and Parents as Partners*** Program that you have participated in. It is important that you answer as honestly as possible. The information obtained will help us to evaluate and continually improve the program we offer. Your cooperation is greatly appreciated. All responses will be strictly confidential.

A. The Overall Program

Please circle the response that best expresses how you honestly feel at this point as a result of participating in this program.

1. I feel that the approach used to strengthen children's social and emotional behaviors in this program is

very inappropriate | inappropriate | slightly inappropriate | neutral | slightly appropriate | appropriate | greatly appropriate

2. My overall feelings about my personal progress using social coaching strategies are

very pessimistic | pessimistic | slightly pessimistic | neutral | slightly optimistic | optimistic | very optimistic

3. My overall feelings about my personal progress using the emotion coaching strategies are

very pessimistic | pessimistic | slightly pessimistic | neutral | slightly optimistic | optimistic | very optimistic

4. The effects of using the self-regulation strategies and imaginary pretend play skills with the children are

considerably worse | worse | slightly worse | the same | slightly improved | improved | greatly improved

5. The children's social and emotional skills are

considerably worse | worse | slightly worse | the same | slightly improved | improved | greatly improved

6. The children's pre-academic skills for language, reading readiness, and persistence at a task are

considerably worse | worse | slightly worse | the same | slightly improved | improved | greatly improved

7. Would you recommend the program to another teacher or parent?

strongly not recommend | not recommend | slightly not recommend | neutral | slightly recommend | recommend | strongly recommend

8. My overall feeling about achieving my goals is

very negative | negative | slightly negative | neutral | slightly positive | positive | very positive

B. Teaching Format

Usefulness

In this section, please indicate how useful each of the following types of teaching are for you now. Please circle the response that most clearly describes your opinion.

1. Content of information presented was

extremely useless | useless | slightly useless | neutral | somewhat useful | useful | extremely useful

2. Using the video vignettes to demonstrate coaching skills was

extremely useless | useless | slightly useless | neutral | somewhat useful | useful | extremely useful

3. Group discussion of behavior change and communication strategies was

extremely useless | useless | slightly useless | neutral | somewhat useful | useful | extremely useful

4. Use of practice or role plays during group sessions was

extremely useless | useless | slightly useless | neutral | somewhat useful | useful | extremely useful

5. Practicing social, emotion coaching and pretend play skills *between* sessions was

extremely useless | useless | slightly useless | neutral | somewhat useful | useful | extremely useful

6. Weekly handouts (e.g., spotlighting tips & others) were

extremely useless | useless | slightly useless | neutral | somewhat useful | useful | extremely useful

7. Reading chapters from the *Incredible Teachers, Incredible Toddlers* or *Incredible Years* book was

extremely useless	useless	slightly useless	neutral	somewhat useful	useful	extremely useful

C. Specific Teaching Techniques

Usefulness

In this section, please provide your ideas of how useful each of the following techniques is in improving your interactions with children. Please circle the response that most accurately describes the usefulness of the technique.

1. Narrated child-directed play

extremely useless	useless	slightly useless	neutral	somewhat useful	useful	extremely useful

2. Pre-academic coaching

extremely useless	useless	slightly useless	neutral	somewhat useful	useful	extremely useful

3.Social coaching

extremely useless	useless	slightly useless	neutral	somewhat useful	useful	extremely useful

4. Emotion coaching

extremely useless	useless	slightly useless	neutral	somewhat useful	useful	extremely useful

5. Using pretend play and puppets

extremely useless	useless	slightly useless	neutral	somewhat useful	useful	extremely useful

6. Using emotional self-regulation skills

extremely useless	useless	slightly useless	neutral	somewhat useful	useful	extremely useful

7. Using praise and rewards

extremely useless	useless	slightly useless	neutral	somewhat useful	useful	extremely useful

8. Using nonverbal communication strategies

extremely useless	useless	slightly useless	neutral	somewhat useful	useful	extremely useful

D. Evaluation of Group Leaders

Please answer the following questions about your group leader(s). Please circle the response to each question that best describes how you feel.

Group Leader #1_____

(name)

1. The leader's teaching was

very poor	poor	slightly below average	average	slightly above average	high	superior

2. The leader's preparation was

very poor	poor	slightly below average	average	slightly above average	high	superior

3.At this point, I feel that the leader in the program was

extremely unhelpful	unhelpful	slightly unhelpful	neutral	slightly helpful	helpful	extremely helpful

If more than one group leader was involved in your program, please fill in the following. (Go to Section E if only one leader was involved.)

Group Leader #2_____

(name)

1. The leader's teaching was

very poor	poor	slightly below average	average	slightly above average	high	superior

2. The leader's preparation was

very poor	poor	slightly below average	average	slightly above average	high	superior

3.At this point, I feel that the leader in the program was

extremely unhelpful	unhelpful	slightly unhelpful	neutral	slightly helpful	helpful	extremely helpful

E. Parent/Teacher Group

In this section, please answer the following questions about your group. Please circle the response that describes how you feel.

1. I feel the group was

very unsupportive	unsupportive	somewhat unsupportive	neutral	somewhat supportive	supportive	very supportive

2. Concerning other group members' interest in my situation, I felt they were

very uninterested	uninterested	somewhat uninterested	neutral	somewhat interested	interested	very interested

3. I would like to keep meeting as a group

YES NO

4. How likely is it that you will continue meeting with one or more of the participants in your group?

highly unlikely	unlikely	somewhat unlikely	neutral	somewhat likely	likely	very likely

F. Your Opinion

1. How could the program have been improved to help you more?

2. At this time do you feel the need for additional assistance? Please elaborate.

3. What did you see as the main benefit of the ***Helping Preschool Children with Autism: Teachers and Parents as Partners*** program?

Thank you for your patience in filling out all of these questionnaires. Your input is very much appreciated, and really helps us to plan future programs.

Appendix T
Pediatric Quality of Life Inventory

ID No.:_____

Date:_____

PedsQL™
Paediatric Quality of Life Inventory

Version 4.0 – English (Australia)

PARENT REPORT for **TODDLERS** (ages **2-4**)

DIRECTIONS

On the following page is a list of things that might be a problem for **your child**.
Please tell us **how much of a problem** each one has been for **your child** during the **past ONE month** by circling:

0 if it is **never** a problem
1 if it is **almost never** a problem
2 if it is **sometimes** a problem
3 if it is **often** a problem
4 if it is **almost always** a problem

There are no right or wrong answers.
If you do not understand a question, please ask for help.

*In the past **ONE month**, how much of a **problem** has your child had with…*

PHYSICAL FUNCTIONING *(problems with…)*	**Never**	**Almost Never**	**Some-times**	**Often**	**Almost Always**
1. Walking	0	1	2	3	4
2. Running	0	1	2	3	4
3. Participating in active play or exercise	0	1	2	3	4
4. Lifting something heavy	0	1	2	3	4
5. Bathing	0	1	2	3	4
6. Helping to pick up his or her toys	0	1	2	3	4
7. Getting aches and pains	0	1	2	3	4
8. Having a low energy level	0	1	2	3	4

EMOTIONAL FUNCTIONING *(problems with…)*	**Never**	**Almost Never**	**Some-times**	**Often**	**Almost Always**
1. Feeling afraid or scared	0	1	2	3	4
2. Feeling sad	0	1	2	3	4
3. Feeling angry	0	1	2	3	4
4. Having trouble sleeping	0	1	2	3	4
5. Worrying	0	1	2	3	4

SOCIAL FUNCTIONING *(problems with…)*	**Never**	**Almost Never**	**Some-times**	**Often**	**Almost Always**
1. Playing with other children	0	1	2	3	4
2. Other children not wanting to play with him or her	0	1	2	3	4
3. Getting teased by other children	0	1	2	3	4

4. Not being able to do things that other children his or her age can do	0	1	2	3	4
5. Keeping up when playing with other children	0	1	2	3	4

Please complete this section if your child attends daycare, preschool/kindergarten or school

SCHOOL FUNCTIONING *(problems with…)*	**Never**	**Almost Never**	**Some-times**	**Often**	**Almost Always**
1. Doing the same daycare/preschool/kindergarten/school activities as other children his or her age	0	1	2	3	4
2. Missing daycare/preschool/kindergarten/school because of not feeling well	0	1	2	3	4
3. Missing daycare/preschool/kindergarten/school to go to the doctor or hospital	0	1	2	3	4