LINKS Trauma Healing Service Evaluation

Report 3 – Final Report

June 2020

circa

DEAKIN UNIVERSITY

Parenting Research Centre

Parenting Research Centre
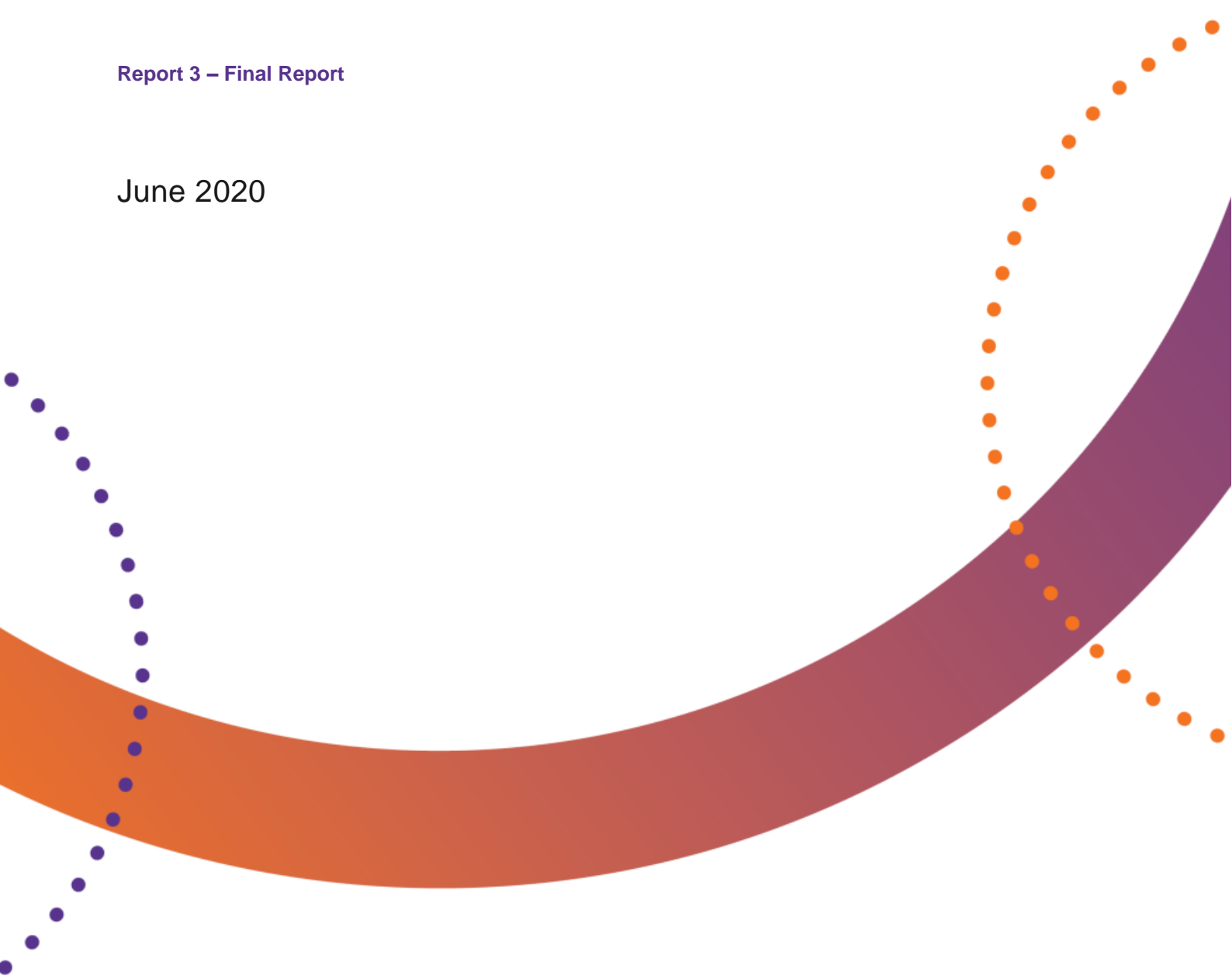
Parenting Research Centre (PRC)

Cultural and Indigenous Research Centre Australia (CIRCA)

Deakin Health Economics – Deakin University (DHE)

Contributing authors

Dr Catherine Wade, Principal Research Specialist, PRC

Dr Lina Tan, Research Specialist, PRC

Dr Elbina Avdagic, Research Specialist, PRC

Mr Alex Almendingen, Research Assistant, PRC

Ms Grace Broomfield, Research Assistant, PRC

Dr Antonio Mendoza Diaz, Research Assistant, PRC

Mr Andrew Anderson, Director, CIRCA

Ms Sarah Ciftci, Research Consultant, CIRCA

Dr Tanya Bretherton, Research Consultant, CIRCA

Ms Lena Etuk, Research & Evaluation Manager, CIRCA

Ms Ha Le, Deakin Health Economics, School of Health and Social Development, Deakin University

Parenting Research Centre

Melbourne Office

Level 5, 232 Victoria Parade

East Melbourne, Victoria, 3002

Australia

Sydney Office

Suite 72, Level 7

8-24 Kippax Street

Surry Hills, New South Wales, 2010

P: +61 3 8660 3500

E: info@parentingrc.org.au

www.parentingrc.org.au

Contents

List of Tables

List of Figures

1. Executive Summary

The LINKS Trauma Healing Service (LINKS) has been in operation in two locations (Greater Newcastle and Nepean Blue Mountains) since October 2017. LINKS involves multi-disciplinary teams delivering evidence-based treatment programs to children and young people in out-of-home care.

LINKS aims to:

- increase stability of out-of-home care placements

- respond to trauma and other underlying causes of child abuse and neglect

- decrease trauma symptoms and improve psychological wellbeing of children and young people and carers.

By the end of 2019, 264 children and young people had received a service through LINKS. Of these, 208 had exited the service before the end of 2019, with 108 of those deemed as having successfully completed one or more treatment program.

This document is the final of three reports on the evaluation of the LINKS Trauma Healing Service. The evaluation was commissioned by the NSW Stronger Communities Investment Unit (SCIU) as part of the Their Futures Matter (TFM) Reform and was conducted by the Parenting Research Centre (PRC), in collaboration with the Cultural and Indigenous Research Centre of Australia (CIRCA) and Deakin Health Economics (DHE) at Deakin University.

The purpose of this evaluation was to examine how successful LINKS has been at improving client outcomes, as well as understanding the experiences of clients and carers exposed to the program. This was achieved by examining how LINKS has been implemented and funded over the last two years, and exploring data related to key outcomes, including child/young person placement stability and wellbeing, and caregiver wellbeing.

This evaluation draws on a mix of primary and secondary qualitative and quantitative data to examine findings regarding client outcomes and experiences of LINKS, and to assess aspects of the implementation and costs of the service after more than two years of operation. Data sources include existing administrative data from child protection data records (including data about a matched comparison sample) and from the LINKS service provider, 23 interviews with LINKS staff, managers and agency leads, and 27 interviews with carers of children and young people who were clients of LINKS, four of whom were Aboriginal carers of Aboriginal children and young people and eight who were non-Aboriginal carers of Aboriginal children and young people.

Previous reports from this evaluation of LINKS concluded that the early implementation of LINKS was on track, with evidence of positive outcomes for participants. Over the course of the evaluation recommendations have been posed in relation to referral processes, accessibility of LINKS, monitoring program fidelity and adaptations, carer engagement, implementation and outcomes for Aboriginal children and young people and Aboriginal carers, and monitoring early discontinuation. Adjustments to practices within LINKS over time have seen improvements in the acceptability of the service.

Data collection completeness and quality was adequate for analysis and, in general, data appeared to meet expectations regarding accuracy, recency, non-obsoleteness and being up-to-date.

Key findings

Evidence supports the effectiveness of LINKS in relation to targeted client outcomes, including most notably with highly significant ($p<.001$) effects in the areas of placement stability (when compared to a propensity score matched 'business as usual' comparison group), and the psychological wellbeing of children and young people (better outcomes for those completing treatment than those who exited early from the service).

To a lesser, although still statistically significant ($p<.05/.01$) extent, moderate to large effect sizes were also noted in other key areas. Specifically, for those who completed a LINKS program compared to those who discontinued early treatment effects were found for carer wellbeing, child and young person post-traumatic stress, school suspensions and court appearances. There were also greater reductions in risk of significant harm (ROSH) reports when comparing those completing LINKS with the 'business as usual' matched comparison sample, although the treatment effect was just non-significant.

Consideration of the limited follow-up data for children and young people at 6- and 12-months following exit from successful completion of a LINKS program, results were encouraging with generally stable or improving outcomes at 6- and 12-months post-exit.

The estimated cost to deliver LINKS is approximately $12,410 per child or young person per year ($27,303 over the 26 month period of the program). The potential cost-savings to government in relation to the benefit that LINKS achieved in placement stability suggests that these benefits could potentially outweigh the costs invested in the program from a Government perspective, in the long-term. Arguably, the costs associated with LINKS are largely recouped in the reduced costs to the system of fewer placement changes, thus this evidence supports the cost-effectiveness of LINKS.

Despite no evidence that LINKS is associated with an increased chance of restoration to the birth family at this point (it may be too early to see these types of effects), LINKS is highly valued by carers, and qualitative data about the effectiveness of LINKS aligns with quantitative evidence of the effectiveness of the service.

Qualitative data suggest that from the perspective of carers and staff, there have been improvements to referral processes over the course of the implementation of LINKS, yet quantitative data indicate that there is still a high rate of discontinuation from LINKS prior to program completion - possibly due to satisfactory progress toward treatment goals for some, or due to changes in life circumstances for others (e.g. placement changes, restoration, family re-location). Nonetheless, some evidence show that those referred are not quite the intended target group – specifically, mean trauma symptomatology scores among older children (8+ years) were not above clinical cut-offs. However, improvements in targeting suitable clients was evident - only 7% of those referred were deemed not to have met inclusion criteria or declined the service (previously was 18% of referrals) – and rates of discontinuation are somewhat better than for other reports of service delivery for vulnerable children and young people in the published literature.

Almost half of the children and young people referred to LINKS were Aboriginal or Torres Strait Islander, and the service seems to be both acceptable and effective for Aboriginal or Torres Strait Islander clients. While some carers were unclear whether LINKS *should* be attending to the cultural needs of Aboriginal or Torres Strait Islander children and young people, there was some suggestion from staff and carers that improvements were needed to the service model for Aboriginal or Torres Strait Islander families. Specifically, adaptations already made had included adjustments to some treatment materials to fit cultural needs, delivering services 'in community' rather than at Government offices, and allowing more time to foster the client-therapist relationship during initial engagement stages. However, guidelines about time-limited service delivery within LINKS meant that extended time in initial engagement put pressure on intervention delivery, and staff noted the need for flexibility in service duration for many Aboriginal and Torres Strait Islander clients. Indeed, some staff felt that many children and young people – not only those from an

Aboriginal and Torres Strait background - required treatment duration of a longer period than the allocated six months.

Results from the quantitative analysis of outcome data indicate no influence of child/young person Aboriginality on treatment effects. This suggests that any shift in child wellbeing (etc) was driven by the LINKS intervention and potentially for some outcomes improvements were also partially driven by other factors such as child age and gender, but not by Aboriginality. This finding supports the value of the LINKS service as an effective treatment model for the large numbers of Aboriginal and Torres Strait Islander children in out-of-home care.

One carer suggested the need for greater integration of LINKS with the National Disability Insurance Scheme (NDIS).

Where measured, adherence to the program models was fairly high (based on a combination of other- and self-rated treatment fidelity assessments), and the types of adaptations to programs described by staff more accurately describe changes that are not fundamental adaptations to programs.

Recommendations

Many of the recommendations from previous reports relating to the current evaluation have been adopted with success. The following recommendations are again offered in the spirit of continuous practice improvement.

Addressing early discontinuation and referral appropriateness

1.1.   Referrals to LINKS to occur early in a new placement if possible, with clear guidelines about the requirements for placement stability.

1.2.   Additional efforts (e.g. pre-screening assessments, information to referring agencies about how to recognise trauma symptoms) may be needed to reach the intended client group of children, particularly in relation to on-entry experiences of trauma symptomatology.

1.3.   Consider the need for a different intake/triage process for those with highly unstable placements at referral (e.g. initial family support to stabilise the placement prior to starting a LINKS program, induction session for carers to address mental health or other issues that might impact on placement stability or induce household disruption).

1.4.   A carers' induction session, suggested by staff, may be useful to acknowledge and address some of the issues identified under point 1.3 above, regarding household disruption and carers' wellbeing prior to program commencement.

1.5.   Routine collection of data about who is making referrals into LINKS will assist in understanding about where further promotional targeting may be needed.

Fidelity and adaptation

2.1   Treatment fidelity to be assessed regularly for all therapists and associated data used routinely to drive practice improvement.

2.2   Routine use of the documented enhancements to program materials will ensure the service is ideally suited to fit the cultural needs of Aboriginal and Torres Strait Islander clients into the future.

2.3   Consider staff coaching as a specific skill-development approach to enhancing staff use of the treatment programs, in addition to peer and/or clinical supervision.

Service integration and enhancement

3.1.   Explore ways to improve the system interface between the NDIS and the Department of Communities and Justice to better (e.g. more promptly) cater to LINKS clients who have disabilities.

3.2.   Ensure ongoing demand is being met by scaling up staff training in the four programs offered through LINKS.

3.3.   Review the appropriateness of imposed service duration restrictions (i.e. up to 6 months) in light of client complexity, mid-point increases in some symptomatology (as noted in Report 1), time needed to effectively engage with clients (particularly for Aboriginal and Torres Strait Islander clients where initial trust and rapport building may need additional time), and the demands of the programs (e.g. delivery of PCIT often requires more than six months – mastery of skills is determined by client's pace of learning).

Continue routine data collection for continuous practice improvement and longer term evaluation

4.1.   Adopting a continuous practice improvement approach to client data collection and consideration of program fidelity data, we recommend the establishment of mechanisms for sharing data routinely with clinicians to guide implementation decisions and to promote accuracy and sustainment of data recording.

4.2.   While this evaluation supports conclusions about the cost-effectiveness of LINKS, and it is likely that the costs to deliver LINKS are likely to be recouped through the reduced costs to the system of lower numbers of placement changes and fewer ROSH reports, these conclusions would be strengthened through consideration of longer-term effects. Monitoring the likely health and welfare benefits and associated cost-savings associated with participation in the service will contribute to the evidence about the value of LINKS in terms of the lifetime wellbeing of participants.

Scale up

5.1.   Given evidence of the effectiveness (including cost-effectiveness) of LINKS, extension of the service beyond the two current locations seems viable. Evidence-based programs offer the best therapeutic solution for the highly vulnerable young people living in out-of-home care, many of whom have histories of significant trauma. The LINKS model demonstrates evidence-based practice in service delivery for this target group, including for the large numbers of Aboriginal and Torres Strait Islander young people living in care.

2. Introduction

2.1. Overview of the LINKS Trauma Healing Service

The LINKS Trauma Healing Service (hereby referred to as 'LINKS') is one of the evidence-based initiatives launched under the Their Futures Matter (TFM) reform delivered by the Department of Communities and Justice. The aim of the TFM reform was to improve life outcomes for vulnerable children and families in NSW by applying an investment approach to direct and prioritise funding and resources. As part of this approach, a number of evidence-based programs were commissioned to improve outcomes for children and young people (CYP) currently in out-of-home care (OOHC). The Department of Communities and Justice (DCJ's) Psychological Services was commissioned to deliver LINKS at two sites, with the service agreement being signed in September 2017.

Intervention sites

There are two intervention sites:

- The Greater Newcastle region in Hunter New England District, which commenced working with clients in October 2017.

- The eastern side of Nepean Blue Mountains District centred on Penrith and St Marys, which commenced working with clients in February 2018.

Programs offered

Within LINKS, multi-disciplinary teams deliver trauma treatment to a targeted group of children and young people (CYP) in out-of-home care (OOHC), according to client need. CYPs can receive one or more of four evidence-based programs (more information about each program is provided in Appendix A):

- Trauma-Focused Cognitive Behavioural Therapy (TF-CBT)

- Eye Movement Desensitisation and Reprocessing (EMDR)

- Parent-Child Interaction Therapy (PCIT)

- Tuning into Kids/Tuning into Teens (TIK/TIK(T)).

The LINKS service is being implemented to:

1. increase stability of OOHC placements; and

2. respond to the trauma and other underlying causes of child abuse and neglect.

LINKS seeks to decrease trauma symptoms and improve psychological wellbeing for targeted cohorts of children in OOHC[1], which in turn are expected to positively impact other areas of life.

---

[1]Out-of-home care (OOHC) refers to the care of CYP who are unable to live with their own families and can involve placement of the CYP with alternate caregivers until they are able to safely return home (time in care can vary). Subtypes of OOHC include **immediate or crisis care** (emergency placements due to concerns about immediate safety), **respite care** (short periods of time - e.g. school holidays, weekends), **short to medium-term care** (placements up to 6 months with a strong focus on reunification - called 'restoration'), **long-term care** (placements for longer than 6 months, usually when CYP is not expected to return to their family), and **relative or kinship care** (CYP lives with a relative or someone they already know). Source: https://www.facs.nsw.gov.au/families/out-of-home-care/about-out-of-home-care/care-types.

The target cohort for LINKS was originally described as being CYP who are 15 years of age or under (now 16 years and under) who are in statutory foster/relative/kinship care where these placements are unstable and children are at high risk of entering residential care. Placement instability indicators include:

- where the child has had two or more placements in the six months prior to referral; or

- where respite care use has increased in the past 12 months.

Around July 2018 the client age criteria was adjusted slightly, to allow the acceptance of referrals into LINKS for CYPs 0 to 16 years of age. This was as a result of communications between the Stronger Communities Investment Unit of DCJ and the Cohort teams.

2.2. Evaluation of the LINKS Trauma Healing Service

Objectives

The purpose of the evaluation was to develop high quality evidence on effectiveness (improved client outcomes) and efficiency (cost-effectiveness of the system) of the LINKS Trauma Healing Service. The evaluation investigated how LINKS was implemented in two locations in NSW and assessed the effectiveness of LINKS particularly relating to trauma symptoms, psychological wellbeing, behavioural and emotional functioning, reports about risk of significant harm and placement stability. It also provides an assessment of the cost-effectiveness of the service which helps to determine efficiency.

Key evaluation questions

This evaluation was underpinned by the overarching question: *Did the LINKS Trauma Healing Service work?* Specific primary and secondary evaluation questions guiding the evaluation are listed in Table 1.

Broad description of methodology

The evaluation was being conducted by the Parenting Research Centre (PRC), in collaboration with the Cultural and Indigenous Research Centre of Australia (CIRCA) and Deakin Health Economics (DHE), Deakin University. See Appendix B for detail about project governance.

To achieve the abovementioned objectives, this evaluation comprised three components - process, outcome and economic evaluations, using a hybrid effectiveness-implementation design (Bernet et al., 2013) which incorporated a mixed-model with repeated-measures quasi-experimental design for the outcomes evaluation component and a cost-effectiveness analysis. A quasi-experimental research design was adopted to quantitatively measure client outcomes in response to treatment in comparison to a matched sample no-treatment (or 'business as usual' treatment) comparison group.

The various methods employed for these three overlapping evaluation components are summarised in Table 1. The hybrid approach integrated data collection and analysis for the three components of the evaluation.

Table 1. Overview of methods used to address evaluation questions

Evaluation Questions	Outcomes/indicators	Analysis of DCJ administrative data	Semi-structured interviews with LINKS staff, managers and agency leads	In depth family interviews	Service provider data	12-month follow-up interviews with treatment group families
Primary questions						
• Is LINKS effective in increasing stability of OOHC placements (fewer non-respite placement changes)? • Does LINKS provide value for money for achieving placement stability	• Increased stability of OOHC placements (fewer non-respite placement changes)	✓			✓	✓
Secondary questions						
Outcomes for families • Is LINKS effective at reducing trauma-related symptoms for CYP receiving treatment? • Is LINKS effective at improving the wellbeing (physical and psychological) of CYP receiving treatment? • Is LINKS effective at improving secondary outcomes for CYP and caregivers involved in treatment, such as behavioural and emotional functioning, improved education and justice outcomes, and caregiver wellbeing?	• Reduction in trauma symptoms • Improved psychological wellbeing of CYP • Improved behavioural and emotional functioning of CYP • Improved carer capacity and wellbeing (all measured using standardised clinical outcomes measures)	✓		✓	✓	✓
Implementation outcomes • What was the reach and appropriateness (including cultural appropriateness) of the service to the target cohort?	• Acceptability: evidence base and relevance • Adoption: uptake of programs • Appropriateness: suitable for cohort and setting • Feasibility: ease of implementation; barriers/ facilitators to implementation		✓	✓	✓	

Evaluation Questions	Outcomes/indicators	Analysis of DCJ administrative data	Semi-structured interviews with LINKS staff, managers and agency leads	In depth family interviews	Service provider data	12-month follow-up interviews with treatment group families
	• Fidelity: programs delivered as intended • Penetration: reaching intended cohort; proportion of eligible children serviced • Sustainability: implementable over the long term • Organisational readiness - Evidence-based programs - Resources available - Skilled staff - Organisational processes in place (e.g. referral processes, training & support, decision making regarding program allocation)					
Cost-effectiveness • What are the costs of delivering LINKS to government/service provider? • What are the costs of delivering LINKS to families? • What are the effectiveness/benefits of LINKS in terms of achieving placement stability? • What is the cost-effectiveness of LINKS?	• Economic costs associated with delivery of LINKS to government/service provider and families • Cost-effectiveness of LINKS	✓	✓		✓	

This final evaluation report provides an assessment of the three components of the overall evaluation of LINKS following 26 months of operation of the service. The three components are:

Process evaluation

The process evaluation provides an examination of important aspects of the implementation of the four programs through consideration of qualitative information collected from 23 interviews with staff (conducted in September-October 2018 and in May-June 2019), plus 27 interviews with families of young people engaged with LINKS (conducted from September 2018 to July 2019), as well as quantitative information about referrals, staff training, program fidelity and client progress provided to us in data records from the LINKS service provider. Topics explored in the process evaluation include the readiness of sites and staff to adopt the programs, the degree to which systems and organisational processes (e.g. referral systems) and resources (e.g. trained staff, appropriate supervision/coaching) were in place to successfully deliver the programs with fidelity, client satisfaction with LINKS, and facilitators and barriers to sustained successful implementation of LINKS, including a focus on the relevance of the service to Aboriginal CYPs.

Outcomes evaluation

The outcomes evaluation provides an examination of the effectiveness of LINKS at improving targeted outcomes though three sets of analyses:

i.   Repeated measures analysis of pre- (on program commencement) to post-intervention (on exit – successful treatment completion or early discontinuation) client data for families who have participated in LINKS up to the end of December 2019. For this set of analyses data relate to standardised measures of trauma symptoms (Trauma Symptoms Checklist), children's behavioural and emotional functioning (the Strengths and Difficulties Questionnaire), children's psychological wellbeing (Personal Wellbeing Index and HoNOSCA), and carer capacity and wellbeing (Personal Wellbeing Index, Parental Stress Scale), as well as to carer-report data about CYP presentations to emergency, school attendance and contact with the justice system. Data on all of these outcomes measures were collected in interviews conducted by LINKS staff.

ii.   Comparison of pre- to post-intervention effects for LINKS clients with a matched business-as-usual sample of CYPs in OOHC in NSW. For this set of analyses, data relate to OOHC placements and reports of risk of significant harm (ROSH) made to the Child Protection Hotline.

iii. Where 6 and 12-month follow-up data is available for treatment completers, we provide descriptive information to illustrate maintenance of treatment effects.

Economic evaluation

The economic evaluation provides an estimate of the costs associated with LINKS through examination of data provided in service provider records (including data collected from families, but also data collated by LINKS for financial reports, etc) and interviews with LINKS staff and managers. The cost-effectiveness analysis examines the incremental costs and the incremental benefits of LINKS compared to current practice (i.e. without the LINKS service), with an estimation of costs associated with LINKS delivery from the Government/service provider perspective. Cost of the LINKS program to families is also examined.

Some of the data reported in previous reports from this evaluation (November 2018 and November 2019) are also included in analyses for the current report, to provide a complete and up to date summary about the implementation and outcomes associated with LINKS (e.g. staff interview data regarding organisational readiness to implement the service). However, it is important to note that based on conclusions and recommendations summarised in those previous reports, some adjustment to implementation has been performed over the duration of implementation as previous recommendations have been adopted.

3. Methodology

3.1. Overview of methodology framework

This report focuses on quantitative data collected about clients of LINKS and about comparison group children recruited from a government-held dataset about all children in OOHC in NSW between 2017 and 2019, as well as qualitative data collected from client families and staff about implementation of the service, and quantitative data collected from LINKS staff and client families about the costs associated with delivery of, or participation in, LINKS.

The specific methods used for this stage of the evaluation are outlined in Table 1 above, which also stipulates how each data collection methodology was used to inform evaluation questions and intended outcomes within the evaluation.

A mix of primary and secondary data was used to assess program costs, client outcomes and experience, and to measure program implementation:

- ***Existing administrative data from DCJ and the LINKS service provider.*** Indicators of client experience obtained from administrative data sources include: engagement and retention data (e.g. number of program sessions, rates of completion of treatment), outcomes on standardised and non-standardised measures of relevant client and family constructs (e.g. trauma symptoms, child emotional/behavioural functioning, wellbeing), client satisfaction, costs to the family of participating in LINKS, and carer-report data about school attendance, juvenile justice and emergency department contacts. Indicators of implementation captured from administrative data sources include: referral and engagement data, and data about fidelity to the program models. For the LINKS and comparison groups, data obtained from DCJ records includes information about ROSH reports, and OOHC placement changes. In addition, the service provider (Psychological Services) forwarded data about treatment fidelity by LINKS staff, including a quantitative summary of the program trainings attended by each staff person and records of fidelity assessments (i.e. checklists or other measures of session completion) completed regularly for each staff person for individual programs. These fidelity assessments are either self- or other-rated. Appendices G and H include copies of the fidelity checklists for EMDR and TF-CBT[2]. Fidelity was also measured through the number of sessions attended by participants, and through clients' ratings of satisfaction with treatment received.

- ***Staff interviews*** at both LINKS sites to assess contextual and program factors affecting implementation. Questions cover topics related to: staff and family retention, staff training and supervision exposure (including their satisfaction with these), staff experience with the programs, perceptions about the acceptability, feasibility, effectiveness and cultural appropriateness of the programs (including engagement of carers and Aboriginal clients), organisational readiness, and program fidelity and adaptation.

- ***Consultations with agency leads and managers*** capture management-level views about the client experience such as referral processes and engagement, as well as information on program implementation - organisational readiness, training, supervision, resources, reach, fidelity, and sustainability, and costs associated with LINKS delivery, including: (a) cost of therapists' time spent supporting CYPs and their families; (b) costs of program resources/materials offered to CYPs and families; and (c) travel expenses to deliver LINKS to families by therapists.

---

[2] In personal communication in March 2019 with a LINKS Manager it was described that for PCIT and TIK there are no fidelity 'forms' per se, as progression through sessions to 'mastery' or treatment completion implies all parts of the 'session' have been delivered as intended.

- ***In-depth client interviews*** to elicit client perspectives on the acceptability of the programs, and to capture families' views on implementation (satisfaction, needs met, cultural appropriateness). Families who are in scope for these interviews are those who have completed treatment or who have had at least three months of sessions with LINKS. This does not include families who were referred but did not engage or those who left the service early. We acknowledge that DCJ is interested in understanding the perspectives of families who do not – for various reasons – complete a program, but this was not achievable within the resources made available to the evaluators. Additional time and different recruitment methods would have been required to facilitate inclusion of early terminators in the interviews. Nevertheless, we have drawn upon the quantitative data from DCJ and from the service provider to identify characteristics of those who did and did not engage and those who left LINKS prior to treatment completion.

Agreements were established between DCJ and the LINKS service provider outlining the scope of the evaluation and articulating roles and responsibilities, data sharing and collection protocols, and participant recruitment approaches. Resources were provided to sites to support the evaluation (e.g. recruitment information fliers for case managers, scripts to engage families in carer/family interviews, regular phone and email contact with the evaluators to guide recruitment and data collection/collation).

3.2. Examination of completeness and quality of data collection

We reviewed a combination of structured and unstructured data. For the purpose of this report, unstructured data types included free-entry text, while structured data types included coded data (such as CYP identification codes and outcome measures data) or data entered into fields requiring specific alphanumeric formats. Drawing from the literature we focused on three different dimensions of data quality: completeness, correctness and timeliness.

- *Completeness*: Completeness is the level at which a data field has been answered in its entirety. Bovee et al., (2001) describe completeness as 'information having all required parts of an entity's description'. Measuring completeness can ensure CYP profiles are accurately answered in whole and that an entire picture of the client situation emerges. We assessed the following variables to see if data values were missing or unusable for the evaluation: for CYPs who started LINKS treatment we examined service use data and outcomes measures; for matched comparison group and CYPs who started LINKS we examined the number of placement changes and ROSH reports made prior to October 2017 and between October 2017 and December 2019. We examined the overall completeness of data at two stages of treatment (on entry and on exit) and assessed whether the data was collected and reported appropriately in relation to documentation provided to the evaluators about LINKS.

- *Correctness (accuracy)*: The data were considered correct when the information they contained appear to be free from significant errors. The definition of correctness suggested by Hogan and Wagner (1997) states that data correctness is the proportion of data elements present that are correct, or that variables recording different information have values that make sense when considered together (e.g. age is recorded as 8, and education level is recorded as primary). We examined whether the data contained any mathematical errors. We also reviewed data entry logs for data duplication, including assessing repetition of the same individuals under different program streams, different placement status or different exit reasons.

- *Timeliness*: Timeliness refers to data recency or currency. Data can be assessed for timeliness only if they contain information describing their timeliness. Redman (1996) argues that timeliness is the degree to which a datum is up-to-date. A datum value is up-to-date if it is correct despite possible discrepancies caused by time related changes to the correct value. For example, timeliness could be measured by what period is covered by the

data held in a dataset, how often the data are updated, and when the last update was. Data were considered current if they were recorded in the dataset within a reasonable period of time following a valid referral, start of program or, alternatively, if they were representative of the CYP state (e.g. placement) at a desired time of interest (Redman, 1996). We reviewed data entry logs and assessed whether data were entered into the dataset within an acceptable time limit and whether the data can be considered obsolete.

3.3. Analysis and review of service provider records

Table 2 summarises outcome data available about CYPs and carers referred to LINKS that is routinely collected by the LINKS service provider.

We examined change over time from entry (pre) to exit (post) and post-exit (6 and 12 months follow-up) on the following standardised measures (see Appendix C for more information about each measure): the Trauma Symptom Checklist for Children or for Young Children (TSCC or TSCYC), the Personal Wellbeing Index School Children version (PWI-SC) and Adult version (PWI-A), the Strengths and Difficulties Questionnaire (SDQ), the Health of the Nation Outcome Scales for Children and Adolescents (HoNOSCA), and the Parental Stress Scale (PSS).

In addition, we examined pre to post and follow-up outcomes related to carer-report CYP presentations to emergency, school days missed due to suspensions, time in custody and number of court appearances.

We first ran within-subjects repeated measures ANOVA to examine whether there were pre- to post-intervention differences in scores on outcome measures for the treatment completers only.

We then ran between-subjects repeated measures ANCOVA to examine whether there were differences on key outcomes for treatment completers compared to those who exited prior to treatment completion.

Number of sessions attended was included as a covariate in the first stage of between-subjects repeated measures ANCOVAs.

Prior to running the second stage of between-subjects repeated measures ANCOVAs we ran ANOVA or chi-square (as appropriate, depending on whether variables were binary or continuous/ordinal) on selected pre-test sample demographics to determine whether these variables demonstrated any significant differences between treatment completers and those who exited early. These demographic variables were IRSD deciles[3], child gender, child age, and child Aboriginality.

---

[3] As a broad measure of socio-economic circumstances, we used the Index of Relative Socio-Economic Disadvantage (IRSD) from the Socio-Economic Indexes for Areas (SEIFA) 2001 (Australian Bureau of Statistics, 2001, 2006). The IRSD provides an indication of neighbourhood disadvantage for each family, based on their postcode. Devised by the Australian Bureau of Statistics, this calculation of disadvantage is informed by a range of economic and social conditions of people and households in a geographical area (combining several community-level socio-economic indicators such as income, unemployment, occupation and education of residents in areas). Area scores have been standardised to a distribution with a mean of 1000 and a standard deviation of 100, whereby roughly two-thirds of Australian areas have scores between 900 and 1100 (Pink, 2008). Lower scores indicate more disadvantaged areas and higher scores indicate less disadvantaged areas. Deciles are created by dividing a distribution into ten equal groups. The lowest scoring 10% is given a rank of 1, the second-lowest scoring 10% is given a rank of 2 and so on, up to a highest rank of 10.

The validity of the SEIFA and IRSD scales has been established (Australian Bureau of Statistics, 2001).

As an IRSD value is applied to individuals according to their postcode of residence. The IRSD value can be viewed as an indicator of likely socio-economic disadvantage, acknowledging that within a single postcode there may be variability in the actual socio-economic status of households, and that some postcodes will have a broad range of socio-economic wellbeing while others will be more homogenous.

A just significant gender difference ($p<.05$) was found between clients who successfully completed a program and those who discontinued prior to completion of treatment for these potential covariates (while an even number of male and female CYPs completed treatment, among those who discontinued early there was a greater proportion of males (64%) than females (36%).

Nevertheless, given some differences between the groups on average at entry (i.e. treatment completers were slightly older, lived in suburbs with slightly lower socioeconomic ratings, and were somewhat less likely to be Aboriginal or Torres Strait Islander) we decided to control for IRSD, child gender, child age, and child Aboriginality in the second stage of ANCOVAs, in addition to controlling for the number of treatment sessions attended. Note that in all of the between-subjects repeated measures ANCOVAs pre-intervention outcome measure scores were also controlled for.

In addition to repeated measures ANOVA and ANCOVA to examine pre to post change over time, we also report effect size scores, which allow comparison of the magnitude of intervention effects on different outcomes and compared to other studies of trauma-focused interventions, as standardised effect size calculations give an indication of the relative strength of the effect of an intervention, compared to other similar interventions.

Follow-up data is analysed descriptively, as sample sizes were too small to justify statistical analysis (e.g. within ANOVA/ANCOVA).

For the process evaluation the following routinely collected administrative data (individual client level data) from the service provider were analysed: CYP and carer demographic information (e.g. age, gender, Aboriginality), treatment details (e.g. program received, sessions attended, completion data), satisfaction ratings, and referral information.

We also report on treatment fidelity data from the service provider. Specifically, we describe data about staff training in each program, and data about each staff persons' adherence to program elements as recorded using fidelity checklists or other measures rated either by the therapist themselves or by another staff person.

Table 2. Measures used to report against client outcomes from service provider administrative data

Client Outcomes	Measures	Completed by?	When collected?
Decreased CYP trauma symptoms	Trauma Symptom Checklist for Young Children (TSCYC) (3-12 years); OR	Carer report	On entry; after 6-10 sessions (mid-point); on exit; and 6 & 12 months after exit (for all except HoNOSCA)
	Trauma Symptom Checklist for Children (TSCC) (8-16 years)	Carer report	
Improved CYP psychological wellbeing	Personal Wellbeing Index – School Children (PWI-SC) (12 years and older); OR	CYP report	
	Strengths and Difficulties Questionnaire (2-11 years)	Carer report	
Improved CYP behavioural and emotional functioning	Health of the Nation Outcome Scales for Children and Adolescents (HoNOSCA) (5-18 years)	Clinician report	
	Strengths and Difficulties Questionnaire (SDQ) (2-17 years)	Carer report	
Strengthened caregiver capacity	Parental Stress Scale (PSS)	Carer report	
	Personal Wellbeing Index – Adult (PWI-A (for carers)	Carer report	

Improved CYP physical wellbeing	Presentations to Emergency	Carer report	On entry; on exit; and 6 & 12 months after exit
	Principal emergency department diagnosis	Carer report	
Increased CYP engagement in education	School attendance (total absences)	Carer report	
	School suspensions	Carer report	
	School days missed	Carer report	
Decrease in CYP's contact with the justice system (or stability where already low)	Warning/cautions[a]	Carer report	
	Court appearances	Carer report	
	Time in custody	Carer report	

For the economic evaluation, service provider records and staff interview data were used to measure costs of the LINKS service to the service provider/Government and costs to families.

Measurement of resource utilisation covered the period of service delivery from October 2017 to end December 2019. Resource use was valued in physical units and monetary values where relevant.

Details of cost measurement is summarised in Table 3.

Table 3. Summary of cost measurement for the LINKS economic evaluation

Resource	Cost measurement				
Cost items	Data collection tool	Timing of data collection	Source	Measure	Value in
Program costs to service provider					
Therapists' time	Financial report, consultation with lead agency	2017-2019	Service provider record	Hour	2019
Travel expenses	Financial report, consultation with lead agency	2017-2019	Service provider record	A$	2019
Program materials	Financial report, consultation with lead agency	2017-2019	Service provider record	A$	2019
Overheads	Financial report	2017-2019	Service provider record	A$	2019
Family costs					
Additional costs to families	Family interview	2019	Family interview	A$	2019

Costs were valued in 2019 Australian dollars (A$), where relevant costs were inflated to 2019 A$ using the Consumer Price Index (CPI) of Australia (e.g. 1.6% in June 2019) (ABS, 2019). Details of how the costs are calculated are described below. No discount factor was applied for costs and outcomes.

A. Costs of LINKS to service provider/Government

    i) Costs of therapists' time spent delivering the LINKS programs

        Costs of therapists were estimated using the actual wages (including 21% oncost to reflect work cover, superannuation and leave entitlement) and the total time spent delivering the program at each site each year in 2017-2019, from LINKS service provider's records.

    ii) Staff travel related costs

        Travel related expenses were estimated using LINKS service provider's records and interview with LINKS service provider's managers.

    iii) Costs of professional development (PD) trainings for therapists

        Costs of PD training for therapists were estimated using LINKS service provider's records and interview with LINKS managers. Costs of the training were valued at the market value of the PD trainings attended by LINKS therapists. Staff time involved in the training events and meetings were valued at therapists' actual wage rate (including 21% oncost to reflect work cover, superannuation and leave entitlement).

    iv) Overheads costs

        Overheads costs - including additional costs of building, equipment, total depreciation, amortisation, repair and maintenance of assets and other expenses - were estimated as 20% of total program costs.

B. Costs of LINKS to families

    Families were asked whether participating in LINKS cost them anything and if yes, how much it cost in total. Families were also asked to report whether they accessed services referred by LINKS therapists during the time they participated in LINKS and the overall costs incurred to them.

We aim to estimate the resource use that would be required to repeat LINKS in the future when the service is assumed to be in a 'steady state'. For example, LINKS is assumed to operate with its efficacy potential, as well as having available trained personnel available to deliver the intervention, and infrastructure is available). Thus, we excluded the following costs:

C. Costs relating to the research context of the service: Costs of initial development of the study concepts, research plans, ethical approvals, design survey questionnaires and all related research costs that are not a part of the service are excluded.

D. Given that the service is assumed to operate in a 'steady state', the following costs are excluded from the economics costing:

- The costs of initial development of the intervention materials

- Costs associated with the initial layer of 'training the trainer' (e.g. costs of training the facilitators of the professional development trainings).

- Costs associated with the development and initial education of an adequate number of qualified therapists/support workers to deliver the intervention.

- Cost estimation in this study is limited to the time horizon of the research, therefore we exclude indirect costs such as productivity losses or a change in paid workforce during intervention.

E.   Costs associated with the CYPs' time are excluded by assigning a value of $0 to CYPs' time resource use as there is no available data on the CYP time resource use in practice.

We present the cost-effectiveness associated with LINKS delivery up to end December 2019 from the Government/service provider perspective with an estimate of the incremental benefits of the LINKS service using outcome data collected for LINKS clients and a matched comparison sample at pre and post intervention.

3.4. Analysis and review of DCJ administrative data

We report on data available from DCJ administrative records for LINKS clients and for a matched comparison sample on historical ROSH reports received about the CYP, and placement changes[4]. We report change over time on these outcomes for those LINKS CYPs who started and exited the LINKS service between October 2017 and December 2019, and the matched comparison sample CYPs using repeated measures between-groups ANOVA (and also ANCOVA) to examine variation in the number of placement changes and ROSH report frequency across two time periods – pre October 2017 and October 2017 to December 2019.

The comparison sample was drawn from DCJ data about all CYPs in OOHC at some time between 2017 and 2019, living in locations where LINKS is not available. Propensity score matching was used to match CYPs in the comparison sample to CYPs who had been referred to LINKS, with matching based on Aboriginality, year of birth and reason for first placement.

Propensity score matching allows covariates that may impact treatment effectiveness to be evenly distributed between the 'treatment' and 'comparison' groups. In this way, differences between matched pairs are unlikely to result from differences in baseline characteristics, and are more likely to reflect the treatment's effect. The advantage of propensity matching is its ability to reduce bias due to confounding variables as it forces the baseline characteristics of pairs to be as similar as possible, rather than relying on group-level statistical procedures that seek to 'control' for the influence of a specific covariate.

To match the treatment and comparison groups, we adopted a 'nearest neighbour matching' methodology (Ho et al., 2011) whereby a distance value is calculated based on a logistic regression function predicting group membership (either LINKS or comparison group) based on the matching variables: Aboriginal or Torres Strait Islander status, reason for first placement, and year of birth. Steps followed for the matching procedure were:

1. Using data provided to us from DCJ regarding CYPs in OOHC but who were not in locations where LINKS is available, plus CYPs referred to LINKS, we used logistic regression to estimate propensity scores for treatment and comparison group participants based on Aboriginality, year of birth and reason for first placement. Using logistic regression, group (treatment /comparison) was the dependent variable and the covariates were the independent variables.

2. Next, we matched the comparison and treatment participants through these propensity estimates using the MatchIt R package (developed by Ho et al., 2011). This process resulted in successful matching of 266 LINKS-referred CYPs (representing 100% of the LINKS-referred CYPs with data records in the DCJ file), with propensity scores for those

---

[4] Each ROSH report was treated as a separate incident, so even if they related to the same 'act' of maltreatment, they were counted separately. We did this as it was not possible from the data provided to determine if ROSH reports made a few days (or even less) apart related to the same or separate 'acts'. Often the reasons given in the datafile for each report sounded quite different, even though they occurred closely together (e.g. 'Child inappropriate sexual behaviour' and 'Physical: Hit, kick, strike').

As we have treated ROSH and placement change data the same way for both the LINKS and the matched comparison sample, the potential for 'over-counting' incidents of maltreatment or undervaluing restoration to the family will be the same for each group, and therefore should not impact on the between-groups analyses.

266 cases matching with 311 comparison group CYPs. Figure 1 illustrates the distribution of propensity scores of matched and unmatched CYPs.

3. We then evaluated the covariates for an even spread across LINKS treatment and comparison groups. The scores are good estimates for true propensity scores if the matching process successfully distributes covariates over the treated/untreated groups (Ho et. al, 2007). Findings indicated no significant difference between LINKS and comparison sample CYPs in any of the covariates employed to create propensity scores.

To examine differences between the LINKS and comparison groups on outcomes associated with number of placement changes and ROSH reports, we conducted statistical analysis of changes in the outcomes over time using repeated measures between-groups ANOVA and ANCOVA (controlling for child date of birth and Aboriginal status). We also examined data related to the rates of restoration of CYPs to their birth family (descriptive analyses only).
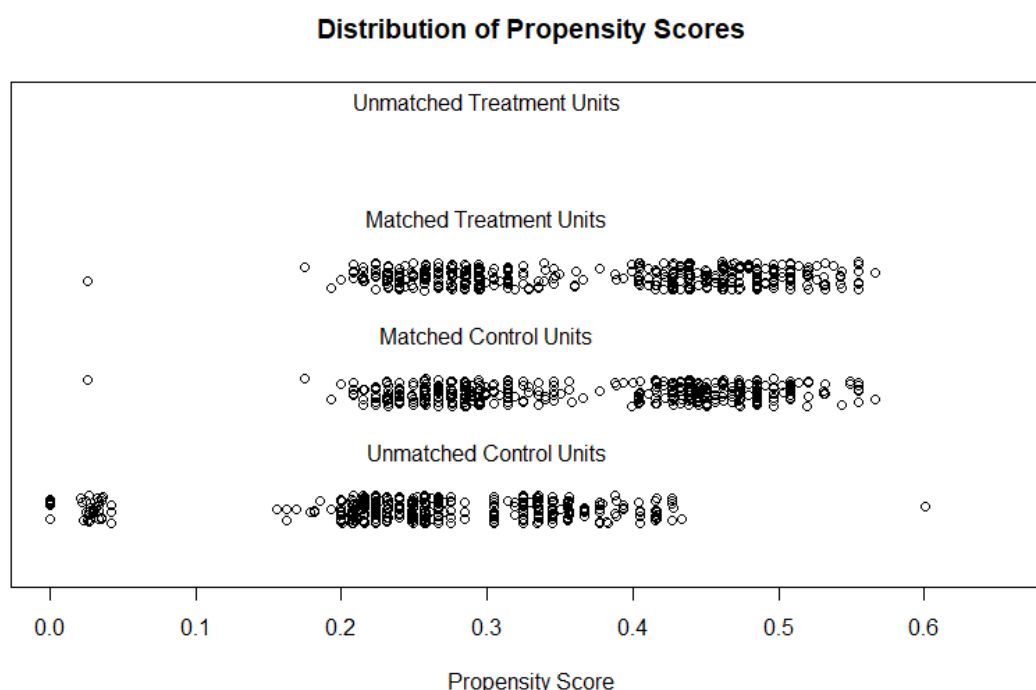
Figure 1. Distribution of propensity scores across matched and unmatched LINKS ('Treatment') and comparison ('Control') group CYPs.

3.5. Interviews

LINKS staff

An iterative process was followed to engage LINKS staff in the evaluation, designed to maximise the likelihood that all LINKS staff would participate in interviews, and thereby reduce the risk of participation bias. TFM introduced the evaluators to agency leads/managers at LINKS via email in August 2018. The message included a letter of endorsement for the evaluation from TFM (including a reminder to managers that supporting an evaluation is part of their service agreement with DCJ). Subsequent emails addressed to each site manager included a one-page introduction to the evaluation, covering a description of all the activities that the evaluation team were undertaking and a general statement on the requirements for each service site. Within one week of sending this email to site managers, the PRC followed up with telephone calls to site managers to introduce the evaluation and outline the specific planned activities for the site. Detailed planning for the staff and family interviews and agency lead/manager consultation commenced with site managers during this and subsequent telephone calls.

Following these initial contacts, PRC sent an email to all managers and agency leads inviting them to participate in a consultation for the evaluation, with a detailed evaluation information sheet and consent form attached to the email. A further email invited LINKS managers to pass a written information sheet and consent form onto staff in their service. Staff were asked to get in contact with the PRC to indicate their willingness to participate in an interview and to arrange a suitable time for this.

Following receipt of signed consent forms, staff, managers and the agency lead participated in interviews either via phone or in person (see Appendix D for a copy of interview questions).

Two sets of interviews were conducted: the first in 2018, which were reported on in the first evaluation report (December 2018); and the second set of interviews were conducted in mid 2019. The intention behind the second set of interviews was to re-interview previously interviewed staff, plus interview new LINKS staff members, specifically addressing issues that emerged as salient in the first report.

In general, the purpose of interviews with managers and the agency lead was to gather detailed information from management perspectives to understand how implementation support elements (e.g. resources, training and leadership), had contributed to the delivery of LINKS and it's four treatment programs with fidelity, and to understand the degree to which these factors may have impacted client outcomes.

In general, the purpose of interviews with service delivery and administrative staff was to gather detailed information from a range of informants to understand: how implementation support elements (e.g. training and supervision) had contributed to the delivery of a program with fidelity; the degree to which these factors may have impacted client outcomes; and the extent to which the programs are viewed as useful, acceptable and appropriate.

The purpose of the second set of interviews with managers, the agency lead and service delivery staff was to examine aspects of the implementation of LINKS that had been identified in Report 1 as needing further exploration. The additional questions (marked as 'new' in Appendix D) were broadly grouped under the following themes:

- Fidelity and adaptation

- Carers' engagement

- Referral barriers and what has been done to overcome initial barriers

- Goal and fidelity monitoring

- Aboriginal engagement.

For both sets of interviews, we developed interview schedules using questions adapted from the Consolidated Framework of Implementation Research (CFIR). Questions were delivered in semi-structured interviewing style, addressing topics of staff experience of the service (satisfaction, engagement of clients and carers, retention, cultural appropriateness), effectiveness of implementation elements (adoption, reach and penetration, feasibility, organisational readiness, stage of implementation, training, supervision, referral processes, implementation fidelity and adaptation, and sustainability), and effectiveness (goal attainment, treatment completion, early discontinuation).

The initial set of interviews (2018) were conducted with two managers and one agency lead (Director) and with 10 mental health clinicians, psychiatrists, speech therapists, and administrative support staff. The majority of these interviews were conducted in person with four occurring via telephone. All 18 staff at each site were invited to participate, with 14 consenting to be interviewed and 13 actually available for interviews within the timelines of this report.

The second set of interviews (2019) were conducted with two managers and one agency lead (Director) and with seven mental health clinicians, occupational therapists and speech therapists. These interviews all occurred over the telephone. All managers/agency leads and any new or previously missed staff at each site were invited to participate, with ten consenting to be interviewed and ten actually available for interviews within the timelines of this report.

Qualitative data capture methods (e.g. interviews) always carry an element of potential bias associated with participants' desire to give socially acceptable answers. To ameliorate this risk, the participant information sheets, consent forms, and statements made by interviewers prior to interviews made it clear that the evaluators were independent of the service providers and that their individual responses would remain non-identifiable. Another potential bias was that the types of participants who agreed to interviews could be those who felt more positive about discussing their experiences. However, bias in one direction is often counterbalanced by the likelihood that participants who have had negative experiences will also take the opportunity to give feedback.

A single interviewer conducted all interviews. Written summaries of each interview were created by the interviewer in situ during the interviews to capture key emerging themes and concepts. In addition, interviews were audio-taped to enable the confirmation of information collected and to provide examples of participants' comments in the reporting of findings.

Data were analysed thematically by an evaluator who was not the interviewer, to identify common themes in relation to implementation of LINKS. We adopted a two stage approach to thematic analysis using deductive reasoning based on CFIR constructs to reduce and organise the data to support the analysis. An initial categorisation of staff data was completed using themes from the evaluation questions (for instance, themes about LINKS acceptability, appropriateness and fidelity). The initial themes and coding were reviewed by the evaluation team and the Project Board to confirm relevance of generated themes and to generate further themes (for instance "initial acceptance of LINKS" or "barriers to acceptance of LINKS").

The qualitative data collected from staff and from the agency lead and managers were generally combined in thematic analysis and are reported as a collective in the Results section below. Where relevant we have also separated out findings that specifically relate to the different informant types.

A third set of interviews were conducted with the two site managers and the agency lead in 2019, with the specific purpose of collecting quantitative information about the costs associated with delivery of LINKS. The focus of these interviews was clarification of expenses (e.g. staff salaries, training attended). These interviews were conducted by the lead economic evaluator at DHE.

Families

CIRCA conducted semi-structured, open-ended qualitative interviews with carers who had participated in the LINKS Trauma Healing Service program in 2018 and/or 2019. Ten of these interviews with carers occurred in September 2018 and seventeen interviews occurred between March and July 2019. The interviewees comprised a mix of foster and relative/kinship carers.

The purpose of the interviews was to explore the experiences of carers and families in relation to LINKS, focusing on their views about program delivery (to asses fidelity), appropriateness, outcomes, and effectiveness of the LINKS Trauma Healing Service in supporting their role as parents, and in meeting the therapeutic needs of the children in their care. All interviews were guided by an agreed upon interview schedule (see Appendix E). Interviews captured the experiences of carers/families across the two LINKS sites: the greater Newcastle region in Hunter New England District (n=8); and Penrith/St Marys of the Nepean region (n=19). The length of time carers interviewed had been engaging with LINKS varied from 2 to 12 months.

Recruitment of carers and families occurred over two stages, using a purposeful sampling technique. Purposeful sampling was employed in preference to other approaches to sampling interview participants (e.g. probabilistic or random sampling), in order to focus recruitment on families who are especially knowledgeable about and experienced with LINKS. Purposeful sampling allows for capture of rich information from participants who can provide detailed insights about LINKS given the duration of their engagement (Palinkas et al., 2015). After knowledgeable and experienced participants were identified, the first stage of recruitment involved the service provider informing carers about the research and gaining in-principle consent to be contacted by CIRCA for interview. Next, CIRCA consultants made contact with each carer, explained the voluntary and confidential nature of the research, and gained formal consent to proceed with each interview.

Interviews conducted in 2018 with families caring for non-Aboriginal children (n=7) were conducted over the phone, while families caring for Aboriginal children (n=3) were interviewed by local Aboriginal research consultants either over the phone or in person, depending on the preference of the family. Of the interviews with families caring for Aboriginal children, one interviewee was an Aboriginal carer of an Aboriginal child and two interviewees were non-Aboriginal carers of Aboriginal identified children. Acknowledging there is potential for bias related to the cultural appropriateness of programs when the carer of an Aboriginal child is not Aboriginal themselves, the second stage of this evaluation sought to recruit a larger number of Aboriginal carers in order to further investigate questions of the cultural appropriateness of LINKS from Aboriginal perspectives.

Interviews conducted in 2019 with non-Aboriginal families caring for non-Aboriginal children (n=8) and with non-Aboriginal families caring for Aboriginal children (n=6) were conducted over the phone. Aboriginal families caring for Aboriginal children (n=3) were interviewed by local Aboriginal research consultants either over the phone or in person, depending on the preference of the family.

All interviews conducted in 2018 and 2019 were audio recorded, and interviewees received a $50 grocery voucher for participating in the evaluation.

Deductive thematic analysis of the data was informed by the overarching topics in the discussion guide and the research questions. We used CFIR constructs to reduce and organise the data to support the analysis and to provide a broader context to explain the main findings.

4. Results

4.1. Completeness and quality of data collection

This section discusses the completeness of the service provider administrative dataset and DCJ administrative datasets (including placement and ROSH reports) for CYPs who have had an outcome from LINKS (that is, they've either completed treatment as at end December 2019, or they started but discontinued early), plus for the 311 CYPs in the matched comparison sample. For service provider records, we report here on the completeness and quality of data collected at pre-test (Time 1) and at service exit (Time 3) only, as these are the data points used in the main analyses of treatment effect. Thus, mid-test (Time 2) and follow-up data (Time 4 and Time 5) has not been examined for completeness.

Completeness

Service provider records. The data comprehensiveness, coverage of evaluation needs and completeness[5] of service provider's administrative data varied across data collection timepoints, with less missing data at the start of the program than at the end. Additionally, data completeness was greater for CYPs who completed the program (Time 1 = 97%, Time 3 = 88%), compared to those who exited early (Time 1 = 92%, Time 3 = 30%).

There were 415 referrals recorded between October 2017 and the end of December 2019. There were 108 recorded cases of CYP who had exited the program due to completion of treatment.

DCJ (OOHC placement and ROSH) data. OOHC placement records and ROSH reports were provided for 266 out of 271 CYPs who had started a LINKS program at some point (noting that only 264 of these started prior to the end of December 2019 – the period of interest to this evaluation). Across all 266 records, the data comprehensiveness, coverage of evaluation needs and completeness of placement and ROSH data was presumed to be 100%, assuming that all incidents of placement changes had been recorded accurately.

Table 4. Data completeness

Completeness	Indicator	Percentage Service provider administrative dataset[a]	Percentage DCJ (placement) administrative dataset	Percentage DCJ (ROSH) administrative dataset
Data is comprehensive	Non-missing records (CYP records were accounted for)	NA	98%	98%
Data is complete	Completeness of data at start of program	Completers = 97% Non-completers = 92%	100%	100%
	Completeness of data at end of program	Completers = 88% Non-completers = 30%[b]	100%	100%

[a] For the Service Provider Records, only cases where an outcome was recorded (either treatment completion or early discontinuation) prior to January 1st 2020 were used for this data completion analysis.
[b] It can be difficult for service providers to collect exit data from clients who discontinue early from a program (e.g. if they move out of the service catchment area quickly).
NA = Not applicable.

---

[5] Only cases where an outcome was recorded (either treatment completion or early discontinuation) prior to January 1st 2020 were used for this data completion analysis. If one item in a questionnaire is not answered, the percentage is marked down immediately.

Timeliness

The service provider's dataset and DCJ datasets were found to record between 73% to 100% for data recency and being up-to-date.

Service provider's records. Of the 208 CYPs who completed a program between October 2017 and December 2019, all have a referral acceptance recorded 100% rating for data recency. The updated-ness of the data (indicated by examining records about the number of days from exit to completion of carer PWI at post-intervention) was 96%. Overall, we were satisfied that data collection protocols were implemented within an acceptable period post referral acceptance. There were no obvious 'red flags' in the reported data such as large completion rates reported early in the period within which LINKS was offered or program completions out of proportion to the number of CYPs accepted into the service, or substantial variation in actuals from one site to another.

DCJ (placement) data. Of the 266 LINKS-referred CYP for whom placement data was made available to the evaluators, there was no evidence of records not being up to date[6] (indicating 100% data recency). There was one CYP with number of days from placement start date to placement end date were deemed unreasonable; this suggests 99.9% of the data met recency criteria.

DCJ (ROSH) report. Overall, ROSH data timeliness (including data recency and up-dated-ness) was strong with 100% of the data entered in a timely way.

Table 5. Data timeliness

Timeliness	Indicator	Percentage service provider administrative dataset[a]	Percentage DCJ (placement) administrative dataset	Percentage DCJ (ROSH) administrative dataset
Dates are recent	Reasonable[b] number of days from date of referral to date of acceptance	73%[d]	NA	NA
	Dates are up to end of December 2019	100%	99.9%[g]	100%
Data are up-to-date	Reasonable[c] number of days from date of exit to the date of completion of carer's PWI at exit	96%[e]	NA	NA
	Reasonable number of days from start of treatment date to end of treatment date	100%[f]	NA	NA

[a] For the Service Provider Records, only cases where an outcome was recorded (either treatment completion or early discontinuation) prior to January 1st 2020 were used for this data completion analysis.
[b] Based on staff interviews - the usual turnaround time is expected to be one week (7 days).
[c] Based on staff interviews – the usual turnaround time is less than one week (+/-7 days).
[d] Range was 0 to 71 days.
[e] Excludes cases with missing data or where the start date of completion of carer's PWI at exit is earlier than date of exit to the program.
[f] Range was 21 days to 19 months and 17 days. Average of 6.7 months.
[g] One CYP spent more than 35 months in emergency care.
NA = Not applicable.

---

[6] Data were considered current (timeliness) if they were recorded in the dataset within a reasonable period of time following a valid start date or, alternatively, if they were representative of the CYP placement state at a desired time of interest.

Accuracy

To assess accuracy, we looked for the presence of multiple representations of the same data objects within a given dataset. We also traced the lineage of the data, looking specifically for elements of important relationship linkages such as self-reports provided by CYPs and measures reported by CYPs' carers.

Service provider's records. The overall correctness and accuracy[7] of service provider's administrative data was 100%. All data were deemed 100% accurate in relation to case identification codes matching other dataset codes.

Table 6. Data correctness/accuracy

Correctness or accuracy	Indicator	Percentage service provider administrative dataset[a]	Percentage DCJ (placement) administrative dataset	Percentage DCJ (ROSH) administrative dataset*
Data are correct	No mathematical errors	100%	NA	NA
	No date related mathematical error	100%	NA	NA
	Relationship linkages with LINKS administrative data (TFM linkage IDs)	100%	100%	100%
Data contains very few errors	No report of the same individuals under different program streams	100%	NA	NA
	No report of the same individuals under different exit reason/s	100%	NA	NA

[a] For the Service Provider Records, only cases where an outcome was recorded (either treatment completion or early discontinuation) prior to January 1st 2020 were used for this data completion analysis.
NA = Not applicable.

DCJ (placement and ROSH) data. Of the 266 CYP with placement and ROSH data who had been referred to LINKS, there were no apparent date-related mathematical errors or multiple reports of the same individuals in either the placement or ROSH datasets, and 100% of cases were deemed to be accurate in relation to case identification codes matching other dataset codes. The overall correctness and accuracy of placement and ROSH data is therefore 100% across different indicators of accuracy.

---

[7] Data accuracy can be difficult to assess as it depends on the CYP/carer providing correct data and the intake clinician's ability to document and enter the data accurately. Accuracy is best determined by comparing records in the respective datasets to paper records, or the records of another reliable provider. For example, a referral in question can be compared to a paper case file from CAU.

4.2. Process evaluation - focus on service implementation

Functioning of referrals

LINKS guidelines state that all referrals to LINKS have to be made by case managers/ caseworkers. As specified in the manual the referral process includes the following steps:

- All referrals are initially sent to the Central Assessment Unit (CAU) mailbox where they are registered by the caseworker in the CAU database and then sent to the LINKS mailbox.

- The LINKS Client Service Officer then directs a referral to the relevant LINKS Manager.

- The LINKS Manager assesses suitability and informs the referring caseworker of an outcome.

- An eligible referral is then allocated to a lead clinician.

In October 2019 LINKS managing staff confirmed that this was the referral process adhered to throughout the duration of the evaluation.

Interviews with LINKS staff

Overall, all staff considered LINKS to have an important place in addressing the need for providing evidence-based programs to CYP affected by trauma. LINKS was viewed by staff as filling a perceived gap – specifically a gap in trauma treatment for children in OOHC.

All staff taking part in the interviews confirmed that the above referral steps were used in the daily operations of the service. Eligible referrals are reviewed and discussed in a weekly meeting. LINKS Managers allocate referrals to lead clinicians, and inform the referrer of lead clinician details. In cases when a referral is not eligible, the Service Manager provides a letter to the referring caseworker outlining the reasons for ineligibility.

One limitation identified in 2018 by staff (n=4) in regard to the referral process, addressed gaps in the information provided by caseworkers in relation to CYP history, allied health treatment reports, and family background, and challenges getting access to CYP information held in ChildStory. However, in late 2019 one staff member noted that following conversations with referring agencies throughout 2019, caseworkers are now providing additional background information such as service history, allowing LINKS formulations to be stronger and more comprehensive. During the follow up interviews staff (n=2) also identified speaking with carers as an important step in the referral process to clarify expectations and possible issues. A staff member also mentioned in 2019 that it would be preferable if clients were being referred to LINKS sooner as sometimes clients are in crisis by the time they are allocated.

Changes were made in 2019 that staff reported would aid in the promotion of LINKS. This included improvements to LINKS branding with it becoming more independent from DCJ. Staff (n=2) noted that the branding was consequently less associated with DCJ, resulting in increased referrals.

Additionally, promotion efforts increased over 2019 with two staff members indicating they were presenting at conferences and webinars. Additional avenues of promotion had included meetings with organisations, podcasts, media releases and NAIDOC events. Staff reported they had been partnering with a range of organisations during 2019 which had helped to promote LINKS to a broader network. Two staff members indicated the success of these promotion efforts based on an increase in referrals and enquiries from general practitioners, paediatricians, solicitors and non-government organisations in 2019.

In 2019 staff (n=3) also noted that the recruitment of additional staff resulted in greater diversity of skills within teams. This team expansion eased the workload of individual staff, meaning that staff were more readily available for referrals, improving engagement with referral networks. It was felt

that the availability of a range of professionals also resulted in improved outcomes for CYPs, through a more holistic and multidisciplinary approach.

Service provider records

Administrative data indicated that by end December 2019 LINKS had received 415 referrals about 415 CYP. All referrals (100%) were made by caseworkers. Most referrals were received internally through DCJ (*n*=278, 66%; was *n*=244 or 72% in 2018 and *n*=102 or 70% in 2019). There was a similar ratio of referrals for male and female CYP (*n*=211, 47% and *n*=196, 51% respectively, missing CYP gender data for 8 referrals, 2%). 47% (*n*=193) of referrals were for Aboriginal or Torres Strait Islander families. The greatest proportion of referred CYP (63%, *n*=260) were attending primary school, 23% (*n*=96) were in secondary school, and 9% (*n*=38) were attending childcare or preschool. Of the remaining CYP (5%, *n*=21), 11 were reported as not attending school at all or regularly, one was attending a 'flexible learning' program at school part-time, and nine did not have any data provided about education status.

All of the referrals were for children aged 16 years or younger.

Various reasons for referring CYP were recorded, with multiple referral reasons possible (and given) per client. The most common referral concerns included aggression, challenging behaviours, attachment/relationship issues, attention/concentration difficulties, emotional dysregulation and anxiety (Figure 2).

Most of the 415 referrals to LINKS were accepted to the service (*n*=343, 83% - which was a similar rate of acceptance of 82% in and 83% in 2019), while 7% (*n*=31) of referrals did not meet inclusion criteria or declined the service. Common reasons for families not being offered or taking up a program included that the CYP was not in a placement or was in temporary accommodation or that they were already engaged with another service.

Frequency

Reason for referral	
Challenging behaviours	
Aggression	
Attachment/relationship issues	
Emotional dysregulation	
Attention/concentration (including ADHD)	
Anxiety	
Peer problems	
Sleep disturbances	
Self-harm	
Depression	
Issues with food	
Concerns not otherwise stated	
Intellectual disability	
Disordered thought	
Trauma	
Placement instability	
Dissociative symptoms	
Parentified	
Enuresis/encopresis	
Substance abuse	
Psychological functioning	
Parenting difficulty	
Oppositional defiant disorder (ODD)	
Child deteriorating	
Verbal communication issues	
Paranoia	
Grief and loss	
Auditory hallucinations	
Abuse	
Post-traumatic stress disorder (PTSD)	
Conduct disorder (CD)	
Body issues	
Adjustment disorder	

Figure 2. Reasons given for referral for the 415 CYPs referred prior to end December 2019

Family interviews

Carers reported the CYP in their care were referred to LINKS by their DCJ or OOHC service provider caseworkers. Among carers interviewed in 2018, referrals tended to come at a time carers described as being characterised by 'chaos' and 'instability'; when they reported feeling out of their depth and unable to manage the unique demands of the children in their care who had experienced trauma and were exhibiting behavioural and psychological symptoms associated with their experiences. Among the carers who were interviewed in 2019, however, there was more of a mix of experiences coinciding with referrals. Some did cite referrals coming at a time when they felt unable to manage the challenges the children in their care were presenting, but others cited experiences that indicated more of an automatic or routine process coming from DCJ or OOHC

service provider caseworkers – for instance, carers noted that some children were entering their care with a referral to LINKS already, and other carers noted that their caseworkers strongly encouraged participation without the carer requesting it at all. For other carers, the referral process was initiated less out of desperation and more out of a 'natural' recognition that the complex backgrounds of children in their care would benefit from trauma-informed therapies.

There were two ways by which the referral process commenced. One involved carers making requests to their caseworkers for individualised support that met the specific needs of their children either during a period of instability and 'desperation' or at the onset of their care. In these instances, carers stated that they were provided with little information about LINKS from their DCJ caseworkers during the referral process but that LINKS staff provided greater detail about the service once the referral had been accepted and prior to commencement with the service.

For other carers, referrals to LINKS resulted from suggestions by caseworkers who were attuned to the trauma-related behavioural and psychological issues that the CYP were experiencing and the impact of this trauma for families. Carers, especially those who reported having a good working relationship with their caseworkers, explained that they trusted the recommendation from their caseworkers despite not receiving much information about LINKS from their caseworkers.

Overall, most carers indicated they did not have trouble accessing the service once the referral had been accepted. Carers reported that once they started working with LINKS, accessing the service was easy and consistent. The main concern that carers voiced in relation to accessing LINKS was limited to fear of only having short term access to the service. Carers were worried about their children losing the support they were receiving from LINKS staff, stressing that continuity and stability in the relationships built between children, their families and LINKS staff were vital to long term improvements and stability.

Some carers expressed that they had some difficulty accessing LINKS due to its location and hours of operation. One carer explained that it was difficult to juggle other family demands alongside travelling a long distance to LINKS appointments, while another carer stated that treatment with LINKS had to stop, following the family's relocation to a region where LINKS was not offered. Carers who lived in regional/rural areas, in particular, faced some challenges in attending appointments because significant travel time was required to visit sites where LINKS sessions were held. While some carers indicated they had received travel support, others did not. Carers highlighted that logistical challenges can be associated with managing other children, juggling work and other family commitments. In rural or regional areas, these challenges are intensified.

Several carers noted the additional level of challenge faced by children who have to miss school in order to attend LINKS appointments. For children who have experienced a crisis (such as a removal), school attendance is often impacted. Some carers highlighted the need for flexibility in appointment making, to reduce the amount of missed school time.

"*We were finding it difficult because ... it's an hour trip down there and then an hour session and then an hour trip back. And they had to miss school, … if they went after school they wouldn't be back until 7 o'clock at night … They were already behind in their schoolwork, so it was a bit difficult to try and fit it all in… it was just too much out of their school week.*"

Differences in treatment type implementation (e.g. PCIT, TIK/TIK(T), TF-CBT, EMDR)

Service provider records

Of 343 of referrals accepted, 264 had started LINKS intervention prior to the end of 2019 (as indicated by a 'Start Date' prior to January 1st 2020) and also had Time 1 (on entry) clinical data collected prior to this date. Of those who started LINKS prior to the end of 2019, 226 (85%) were identified as being allocated to one or multiple specific LINKS programs (see Figure 3 and Table 7; Appendix A contains details about each program, including recommended frequency and

duration). The largest subset of these clients were allocated to only TF-CBT, while 14% were assigned to a combination of TF-CBT and TIK(T), 13% to only PCIT and 2% to PCIT and TIK(T) in combination. 10% were allocated to TIK(T) only. Those receiving only EMDR (10%) or EMDR plus TIK(T) (5%) were less common.

Table 7. Allocation of clients to specific programs, N (%)

Program	As at August 2018	As at July 2019	As at December 2019
TF-CBT only	*n*=84, 32%	*n*=74, 37%	*n*=84, 32%
TF-CBT plus TIK(T)	*n*=18, 22%	*n*=39, 19%	*n*=38, 14%
PCIT only	*n*=13, 16%	*n*=27, 13%	*n*=35, 13%
PCIT plus TIK(T)	*n*=0, 0%	*n*=4, 2%	*n*=4, 2%
TIK(T) only	*n*=10, 12%	*n*=25, 12%	*n*=25, 10%
EMDR only	*n*=3, 4%	*n*=20, 10%	*n*=26, 10%
EMDR plus TIK(T)	*n* = 3, 4%	*n*=12, 6%	*n*=14, 5%

There were 38 CYP whose referrals were accepted and who had started a program prior to the end of 2019 (as indicated by Time 1 clinical data having been collected), but who were not (yet) allocated to a specific program within LINKS. Only one of these 38 cases was a very recent referral (i.e. with a program start date of mid-November 2019), who arguably may not have yet been allocated to a program. However, 37 cases had been referred prior to September 2019 were indicated to have started LINKS treatment. While missing data is possible for these cases, given commentary drawn from family and staff interviews, it is also possible that placement instability or other family or CYP issues play a role in decisions to delay treatment commencement or to withdraw CYPs early from treatment, even after collection of Time 1 data.
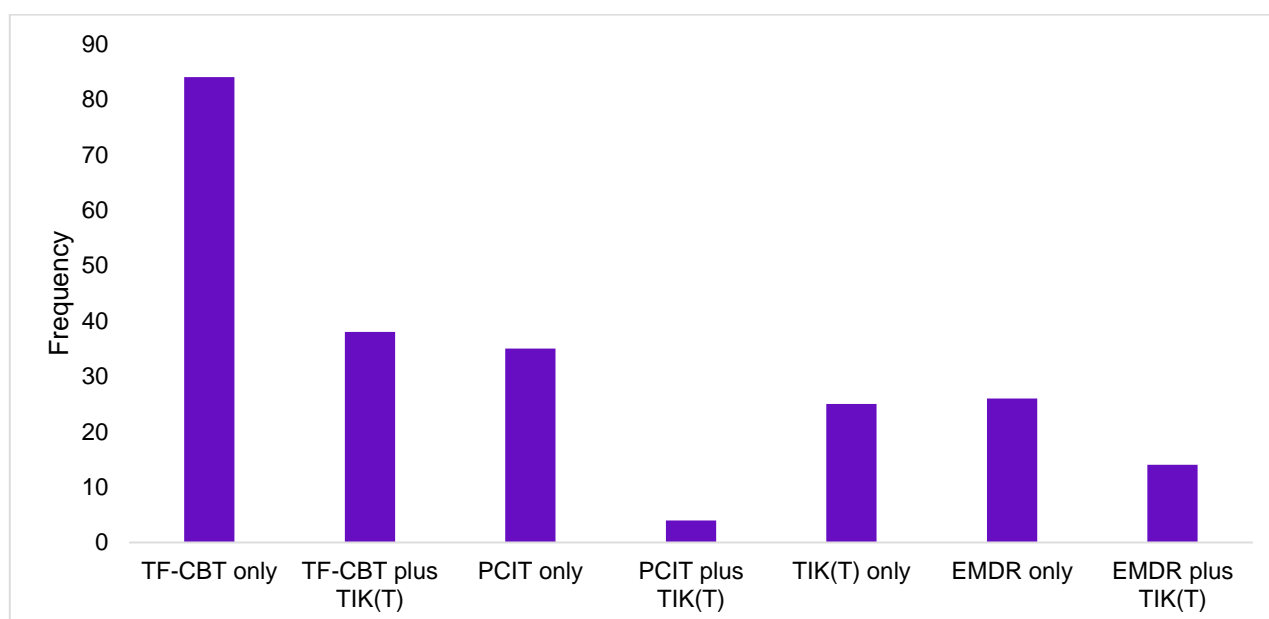

Figure 3. Number of referrals allocated to each program

Interviews with LINKS staff

In general, all staff participating in both the 2018 and 2019 interviews expressed positive views about all four LINKS programs.

TF-CBT was perceived to be flexible since CYP do not have to go through every stage of the program and carers can also be included in sessions depending on CYP needs. Further, the narrative component of the program was viewed as suitable for different cultures, including Aboriginal families. Another positive aspect of TF-CBT was that it could be completed outside the clinical setting (e.g. at family home or in a community setting). One barrier identified by a staff member during the 2019 interviews was that the 6-month program duration is too short for certain CYPs, particularly those with high risk behaviour or a lack of stability.

All 11 staff in 2018 reported that TIK/TIK(T) was also adaptable, so it could be delivered in a culturally appropriate way. The flexibility of the TIK/TIK(T) program was highlighted as a strength by staff in 2019 as well. The group format was believed to assist families to see that there are many others who share similar challenges, which contributed to group members supporting each other. It was acknowledged though that not all carers are willing to take part in a group program. TIK/TIK(T) was perceived as feasible when having sufficient numbers of families participating.

Despite the positive behaviour change observed for most CYPs, it was suggested that PCIT should include more trauma information[8]. Additional time to spend with carers and the CYP was also recommended, particularly for acute cases where progress may take longer. This program was also perceived to be expensive as it required a particular setting and equipment.

Two staff indicated that to take part in EMDR, CYP needed to fit a particular set of criteria. In cases where CYP presented with significant dissociative symptoms or aggressive behaviour, more time was needed to build rapport prior to commencement of the program. Whilst staff suggested that EMDR was particularly beneficial for older adolescents, it was suggested that the program could be more inclusive of carers. Additionally, staff noted that the EMDR resources available to them such as books and other tools were particularly helpful.

Staff (*n*=5) in the 2019 interviews described the positive outcomes they were seeing for CYPs and the positive feedback they were receiving on the programs. They noted that the treatment programs feel well-established and believe they are ready to be rolled out into additional areas. They reported that the programs fulfil an important role in addressing the long-term mental health of young people and hope to see it accessible to a greater number of young people in the future.

Implementation with Aboriginal families

Staff interviews

LINKS aims to provide culturally appropriate service to a range of family types, including Aboriginal CYP and their carers. To achieve this aim with Aboriginal families, staff indicated spending a significant amount of time building networks and connections within the community, including engaging with the Elders and families to build trust and relationships. Emphasis was placed on getting to know families and their cultural values, which was perceived as a crucial step to delivering programs without compromising fidelity.

---

[8] There are versions of PCIT that have included trauma components (e.g. see http://www.traumacenter.org/clients/pcit-a_svcs.php), and there is preliminary evidence supporting the effectiveness of PCIT for trauma associated with domestic and family violence, child maltreatment and loss (Cotter, Wilsie, Bretsan-Knight, 2018; Herschell et al., 2017; Pearl et al., 2012). In Australia, a trauma-focused adaptation of PCIT is being used with reported success, including as a telehealth intervention (Karitane NSW, personal communication), which offers promise as an alternative to in-person treatment during times when social distancing is required (e.g. as is currently the case during the COVID-19 pandemic).

Across both 2018 and 2019, staff reported participating in cultural awareness training and National Aborigines and Islanders Day Observance Committee (NAIDOC) celebrations so that LINKS was introduced to the Indigenous community. Additionally, staff in 2018 noted they found it very helpful having an Aboriginal psychologist on the team with whom they were able to consult when needed.

In 2018, most staff (*n*=10) identified challenges regarding engaging Aboriginal families in the service, with some of the same barriers identified in 2019. A primary concern across both years was the setting where sessions were typically conducted - LINKS shared their offices with DCJ, which was viewed by some staff as a barrier to engaging families. For this reason, some sessions needed to be organised outside the DCJ office where families felt more comfortable. This was seen as essential for building trust - particularly for families experiencing intergenerational trauma.

In 2019, several staff (*n*=4) noted an increased ability to travel to local areas and conduct sessions in a place comfortable for the family. This increased flexibility was seen as a significant strength of the programs and increased engagement with Aboriginal families. Additionally, one staff member spoke at length about the benefits of facilitating tailored events and activities to build relationships and trust within communities, such as scrapbooking workshops and mural creations. It was suggested that events such as these promote LINKS whilst also providing CYPs opportunities to practice their skills and make positive social connections.

Several staff across 2018 (*n*=2) and 2019 (*n*=4) emphasised that the LINKS worker often had to be known in the community, so families knew who to speak to when they were referred to the service. Emphasising that they are part of LINKS and not DCJ was also helpful in engaging families.

Another issue was raised in relation to the time allocated to work with families. Several staff emphasised that Aboriginal families needed more time to build trust and rapport before engaging in a program and this was a consistent theme across 2018 (*n*=5) and 2019 (*n*=6). Specific considerations were recommended such as allowing several sessions to develop a relationship prior to commencing assessments, providing choice to the CYP or carer regarding the initial focus and the clinician taking time to share information about themselves so clients feel more comfortable doing so.

Further, some program materials (such as TIK(T) narratives) were modified to better fit the cultural needs of Aboriginal families. However, staff indicated that these modifications were performed with attention to retaining treatment fidelity.

During 2019 interviews, several staff (*n*=5) also discussed the importance of transparency with the CYP, carer and broader community. Staff reported that this means being open with clients about your role and what the program can offer them, discussing the programs with the Elders and community members, and ensuring that all documentation is written in language that is appropriate for the CYPs and carers. This transparency facilitates trust and ensures the family is able to make informed decisions regarding what is best for them.

Treatment fidelity

Treatment fidelity indicates to what extent a program is delivered as intended. It is suggested that treatment fidelity is essential to effective translation of evidence-based programs into practice (Breitenstein et al., 2010). Notwithstanding the need to attend to fidelity, adaptation of programs is sometimes necessary – researchers cite the frequent commentary of service providers that programs developed overseas require adjustments to ensure they are relevant to the particular context or specific cultural group - for instance Aboriginal Australians - with which they are to be implemented (see Botvin, 2004 and Devieux et al., 2005).

Service provider records

Records about staff training in the four programs indicated most (9 out of 13 staff for whom data was recorded) had been trained in three programs. The most common program to be trained in

was TIK(T), with 12 out of the 13 staff for whom training data was available. Fewer staff had been trained in PCIT (n=3) or EMDR (n=6). This will therefore impact on what programs were available for CYPs at the time they were referred.

Treatment fidelity ratings were provided for 21 therapists in total. Average scores on self- or other-recorded checklist items for the four programs were as follows: EMDR 92.9% (self-rated), PCIT 97.6% (self or other rated), TIK(T) 87.5% (self or other rated) and 80.6% (when rated by themselves) on TF-CBT. While this indicates high fidelity ratings in general overall, there may be room for improvement in fidelity to the TF-CBT and TIK(T) program models.

Another type of treatment fidelity relates to the client's experience of the program. Table 8 provides data about families' satisfaction with LINKS. Overall, carers (n=108-109) were highly satisfied with the help that their child had received from LINKS during the intervention period. 87% of carers agreed or mostly agreed that their child like the service provided by LINKS, 90% of carers said it was easy for their child to get to the service, 90% agreed or mostly agreed that their child felt included by LINKS, 94% felt that LINKS staff spoke with their child in the way they understood, and 91% felt LINKS staff respected their child's culture. CYPs themselves (n=78-79) were also highly satisfied with the service. 91% of CYPs agreed or mostly agreed they liked the service, found the people at the service to be understanding, and that the staff spoke to them in a way they understood. 95% of CYPs said they felt included by the service provider, and 90% felt the service respected their culture. A smaller proportion (84%) indicated it was easy for them to get to the service, and while 8% found it difficult to get to the service, 6% were undecided or had mixed feelings about service accessibility.

Table 8. Client satisfaction survey

Client satisfaction survey (% responding 'agree' or 'mostly agree')		
Question	*N*	**%**
Carers' views		
My child liked the service given by [XXXX]	95	87.2%
My child found the people at [XXXX] understanding	99	90.8%
My child felt included by [XXXX]	97	89.8%
It was easy for my child to get to the service	98	89.9%
[XXXX] staff spoke with my child in a way they understood	102	93.6%
[XXXX] respected my child's culture	98	90.7%
CYPs' views		
I liked the service given by [XXXX]	72	91.1%
I found the people at [XXXX] understanding	72	91.1%
I felt included by [XXXX]	75	94.9%
It was easy to get to the service	66	83.5%
[XXXX] staff spoke with me in a way I understood	72	91.1%
[XXXX] respected my culture	70	89.7%

Evidence base of the programs

LINKS staff interviews

Staff were asked about types of information or evidence they had which suggested that the implementation of LINKS would lead to positive outcomes for CYP and their families. The main sources of evidence reported by all staff included published articles, information from conferences, training and meetings, and discussions with colleagues. Slightly less than half (*n*=5) of the staff interviewed in 2018 indicated that their views about the effectiveness of programs were shaped by their clinical experience. Staff overall reflected positive views about the evidence base of the programs offered through LINKS across both the 2018 and 2019 interviews.

Training and supervision

LINKS staff interviews

All staff reported they had been trained in the programs they were delivering. Although, according to training data provided for the evaluation, no staff person had been trained in all four programs – the average was between two and three programs per staff person.

In relation to training and resources needed for implementing the programs, all staff believed the service was well resourced. They reported having access to toys, assessment materials, treatment manuals, internal communications and discussions with colleagues. They also reported attending relevant conferences, workshops and getting regular supervision to further extend their knowledge and improve their skills. The majority of staff reported feeling supported and satisfied with supervision received, indicating that they can regularly seek formal and informal feedback from colleagues and leadership teams. However, one staff member in 2018 interviews suggested that a process of deciding who is able to attend a particular training could be improved. This person perceived that these decisions were made without discussion with staff members to clarify interests and preferences. Another concern raised in 2018 interviews was related to the supervision process whereby it was suggested that clinical supervision should be provided separately to management supervision, however the 2019 interviews suggested this issue had been resolved with additional external supervision being provided when needed.

In 2019 a staff member noticed a need for additional support for some staff members in delivering TF-CBT as different staff members had received training from different individuals resulting in a discrepancy in confidence and knowledge. As such, to supplement the training sessions, group supervision sessions were implemented, which staff found beneficial to their development and treatment delivery.

Quality assurance

LINKS staff interviews

Staff (*n*=4) identified that increased data collection, program checklists and document auditing implemented throughout 2019 had been helpful in improving fidelity. They identified that such processes allow staff to ensure they were meeting expectations, whilst also maintaining a high completion rate which kept referral networks engaged. Staff noted that these processes were strongly supported by management and administration teams and had been streamlined and improved over the course of service implementation, with one staff member noting that there was a reduction in client drop out in 2019 due to improvements in fidelity checks.

Adaptation

LINKS staff interviews

Staff perceived LINKS to be a flexible service and believed that this flexibility was needed to effectively work with CYP and carers. However, they also indicated that based on their clinical judgement, minor adaptations were sometimes needed (and made) to ensure the program

suitability for the individual client. For example, engaging carers in the service was perceived to be an important factor in successful implementation of the programs to achieve best outcomes for CYP. As such, many staff in 2018 interviews indicated that having additional time and freedom to work with carers would enhance program implementation and outcomes. In 2019 interviews, staff (*n*=3) indicated they were better placed to support carers when required, as well as being more proactive about involving kinship carers and extended family where needed.

Many of the adaptations made over 2019 affected the earliest stages of service delivery to clients, including referral, assessment and initial sessions. Staff reported that these modifications were based on information provided in the 2018 report of the evaluation of LINKS (Parenting Research Centre, CIRCA & Deakin Health Economics, November 2018) and allowed the CYPs and carers to begin the programs better informed. For example, in 2019 education material was created to introduce LINKS to families, with an animated online video and a frequently-asked questions information sheet available for carers of prospective clients. Adapted versions of the information sheets were also made available for CYPs and individuals with limited literacy.

Adaptations were also made to assessment procedures during 2019 to optimise program delivery. Staff (*n*=2) noted a stronger ability to use appropriate assessments for CYPs, for example ensuring language assessments used for an Aboriginal child included norms that were based on an appropriate Aboriginal population. Additionally, an occupational therapist outlined that they were increasingly undertaking home assessments as this provided additional useful information about the CYP's physical and social environment. Extra documents were also introduced in 2019 to ensure clients were being reviewed by all required professionals in an appropriate order. These documents included a priority checklist used by the occupational therapists and speech pathologists and a psychiatry review form.

Across 2019 staff noted they had also adjusted their approach towards goal setting with clients. They described having more direct conversations with the CYP and carer about what they hoped to get out of the program and what would lead to meaningful change in their life. These conversations reportedly led to increased clarity for both clients and staff and facilitated greater motivation and engagement from the CYPs.

Staff also suggested that some modifications to materials had been needed to match CYPs' individual levels of cognitive development so participants could understand program concepts. Staff sometimes changed the format of material presentation to address cultural needs (visual vs. written) or introduce a psychoeducation component on trauma for carers.

Staff (*n*=2) in the 2019 interviews also spoke about the usefulness of modifying the environment where the program was delivered, as the setting of the intervention could also be used as a therapeutic tool. One example of this was when a Tuning into Teens session was run at a local surf club, with the beach environment and view of the water being described as 'extremely relaxing' for participants. Such settings also provided an opportunity to introduce CYPs to local community organisations. One staff member spoke about the importance of assisting CYPs to create meaningful connections within the community as these relationships can facilitate long-term change beyond their engagement with LINKS.

In addition, several staff (*n*=4) in 2018 viewed that difficulties with CYP self-regulation - which was identified as a common concern for those referred to LINKS - were not adequately addressed by every program that LINKS offered. Hence, in some instances, staff provided additional attention to this concern by adapting a program to include sessions on self-regulation of emotions. However, it was noted by several staff (*n*=3) in the 2019 interviews that adaptations such as these would sometimes result in difficulty completing the program within the specified time, particularly for CYPs with substantial behavioural difficulties.

Finally, adaptations to the recommended program delivery format were sometimes needed to address barriers to engagement. During the 2019 interviews, some staff (*n*=6) described an increased awareness of situations that require an alternative approach to facilitate client

engagement. For example, often appointments with different professionals would be merged so that the family was not having to find time for several appointments within the week. Additionally, to ease the travel burden on families and to increase engagement with certain Aboriginal families who did not feel comfortable attending appointments at DCJ, staff are increasingly travelling to meet families at a location in their local area. Staff reported that these adjustments meant greater engagement from families, improving outcomes for CYPs.

In 2019 clinicians discussed how they had developed additional initiatives and programs which have further improved engagement. For example, an incentive program was created whereby clients earned tokens for attending sessions and meeting other expectations, which then allowed them to purchase items at an auction. Such initiatives were encouraged by management and staff, who perceived them to be an excellent way of engaging CYPs and carers.

Nevertheless, all staff reported that any amendments to programs were made in consultation with the manager and 'the program developer' so that fidelity was maintained. In 2019, staff (*n*=2) also highlighted the usability of the manuals as they provided flexibility in outlining indicators and contra indicators for each module, meaning the programs could be tailored to individual children whilst still adhering to guidelines and preserving fidelity.

Ease of use

LINKS staff interviews

Most staff (*n*=9) reported the programs offered through LINKS were not complicated and that they had a clear framework for delivery. Staff perceived that complexity arose from other factors related, for example, to the child's environment (e.g. unstable placement) or when the family needed a mix of services. One staff member added that the programs required many hours of planning in order to be implemented effectively, clearly and simply to families. A common theme in 2019 interviews was also the difficulty in delivering the program within the specified timeframe. Staff noted that due to challenges present among most families and the complex presentations of the clients, six months was often an insufficient timeframe to deliver the program in full, with additional time needed to realise desired outcomes.

Other implementation facilitators

LINKS staff interviews

Across 2018 and 2019 most staff perceived having a multidisciplinary team as a great asset. Staff believed they worked well together, were focused on achieving similar goals and were drawing from each other's experiences and background. Leadership was also appraised as being supportive. While the overall working environment was perceived positively, one staff member in 2018 interviews disagreed with these views and believed that the LINKS work environment was not positive, with people reporting they were experiencing stress related to the collection of data or the number of reports they needed to complete as part of LINKS delivery. In 2019, the workload remained an issue for some staff, with four staff members describing the workload as high. However, two of these staff members acknowledged that the workload had improved from the previous year, describing it as manageable most of the time.

Implementation barriers with CYP and family/carer

LINKS staff interviews

In relation to the CYP's and families' needs and resources, staff identified several barriers to effective implementation of the programs. These included:

- *Carer's own instability, history of trauma and chaotic living environment (discussed as a barrier in both 2018 and 2019)*

Staff indicated that the carer's mental health, traumatic experiences and crisis could make it difficult for them to provide support for their children or to put the CYP's needs first. Staff did indicate that a carers' induction session may be useful to acknowledge and address some of these issues with carers prior to program commencement.

- *Carer motivation level (discussed as a barrier in both 2018 and 2019)*

   Some carers were perceived as not being willing to engage at a level required to achieve positive outcomes.

- *Carers not being aware of the referral to LINKS (discussed as a barrier in 2018 only)*

   Staff reported that at times caseworkers did not advise the carer that a referral had been made to LINKS.

- *Placement breakdown (discussed as a barrier in both 2018 and 2019)*

   Staff reported that stability of placement often needed to be a priority and addressed (sometimes by staff themselves) prior to the program taking place.

- *Distance from service/transportation difficulties (discussed as a barrier in 2018 only)*

   Some families were living up to 1.5 hours away from the service making it difficult to attend treatment sessions. This was further complicated if carers were not able to drive so they had to rely on public transport - which was often not reliable - or rely on caseworkers to transport them to their appointments. These difficulties sometimes contributed to clients missing their appointments. In 2019, staff noted that they were more able to travel to locations closer to families who were experiencing this as a barrier.

- *Carer's other commitments including looking after their other children or working full time (discussed as a barrier in 2019 only)*

   These factors also contributed to many missed appointments since carers did not have alternatives for babysitting other children, or their working hours preventing them to attend sessions.

- *Schools not being open to clinician observation (discussed as a barrier in 2019 only)*

   Staff reported that schools sometimes did not like clinicians observing the client in the school setting which limited their ability to understand the CYPs difficulties and treat them accordingly.

- *Using DCJ offices to deliver programs (discussed as a barrier in 2018)*

   This was perceived as a significant barrier particularly for Aboriginal families with previous history with DCJ. However, increased ability to travel in 2019 meant staff were able to avoid this when they anticipated it may be an issue for a family.

- *Time needed to engage families (discussed as a barrier in both 2018 and 2019)*

   Staff believed that longer time was often needed to build rapport with families and get their trust to be able to effectively engage them in the programs, particularly for clients with more complex needs.

- *Time needed to discharge a client (discussed as a barrier in 2019 only)*

   Staff (*n*=3) noted that often the CYP and carer require several weeks to prepare for discharge however the process in place at the time did not allow for this. Staff suggested

that to meet the needs of each client the discharge process should be reviewed, with either a longer discharge process or the opportunity to provide additional ongoing support on a smaller scale for certain cases.

Family interviews

Carers interviewed in 2018 and 2019 overwhelmingly expressed that LINKS delivered what they had hoped. Carers felt that the information about the service they had received from LINKS staff upon commencement was in line with the services that were delivered to them. There were only two exceptions among those interviewed in 2019 who felt the program was not meeting their expectations, namely two families that had two of their children participating in LINKS – these families felt their youngest children did not get as much out of the program as the older children did.

Regarding the individual programs offered within LINKS, some carers had accessed TIK/TIK(T) and reported that the program involved weekly two hour group workshops over six to eight weeks. Carers described how, as part of this program, they were provided with information about how to communicate more effectively with children who have experienced trauma and how to support their emotional needs.

Across programs, the majority of carers reported they were accessing support services for their children from a LINKS psychologist and/or occupational therapist. CYPs typically had weekly, one-hour sessions with a LINKS therapist. Carers were generally aware of the kinds of activities their children were participating in during sessions, for example, play therapy and talking through feelings and experiences. This was particularly the case for carers who were present during sessions and were actively participating in a treatment alongside their children, for example in PCIT. Carers who were not participating in sessions alongside their children were less likely to know the specific details of the treatments or the name of the program being accessed. Family involvement in programs was identified as an important element of program success.

Meeting the needs of children and families

Family interviews

Some carers in 2018 discussed how they were initially sceptical about whether LINKS could decrease severe trauma symptoms, and were wary of the techniques and treatments employed to achieve this. In these instances, carers were pleasantly surprised and felt that their expectations of LINKS were exceeded because they were able to see significant improvements in the behaviour of the child(ren) in their care.

LINKS was viewed as fitting well with the needs of the CYP it was servicing. Carers believed that the CYP in their care needed specialised, trauma-informed assistance and believed that LINKS psychologists were meeting this need. Carers stressed the importance of children having access to support outside of the home so that they could work through their experiences of trauma with someone who has the right level of expertise.

LINKS was deemed appropriate and suitable by carers in that it largely fit well with the routines of their families, particularly as psychological, occupational, and speech therapy services were all available in one place. Most carers found the service to be flexible to the demands of their schedules and the needs of their children, and appreciated the consistent and scheduled nature of their weekly appointments. Three Aboriginal or Torres Strait Islander carers were interviewed in 2019 voiced their appreciation for the flexibility of the services and their appropriateness for their children. Two of the three families explained that the LINKS providers adjusted their delivery times and locations to accommodate the scheduling needs of the family and the negative associations with DCJ offices.

In terms of meeting the cultural needs of Aboriginal and Torres Strait Islander CYP and families, it was noted among 2018 interviewees that carers were unaware of whether any Aboriginal workers were involved in delivering LINKS, but among 2019 interviews carers did not explicitly mention any awareness, unawareness, or concerns about the presence of Aboriginal LINKS therapists. What was clear from the 2019 interviews was a mixed experience with respect to the extent to which LINKS providers explicitly addressed the cultural needs of Aboriginal or Torres Strait Islander children and families. Three Aboriginal carers of Aboriginal children spoke to the culturally appropriate way their children's LINKS therapists addressed them and their needs. One of these carers described:

'[The] child is Aboriginal. We were asked about our heritage and religion. [The] child identifies as Christian. [The] child is very spiritual, and the therapist shaped the therapy about this.'

Among non-Aboriginal carers of Aboriginal children, however, some voiced confusion over the role LINKS should or could play in meeting the cultural needs of the children in their care. The following interview excerpts are included to illustrate the nature of the uncertainty faced by carers in this context.

Interviewer: "*Do you know if there has been any consideration to the kids' cultural needs?*"

Carer: "*I'm not, I'd have to say, sure on that one*".

And:

Interviewer: "*…if you could shed light at all, do you think that the program has taken into account [child's] cultural needs?*"

Carer: "*I don't, oh, God, see, I don't think culture has come into it outside of individual needs, see, I don't – see, this is terrible, I don't actually look at people by race or culture or anybody, at work or otherwise, I don't know if other people – I presume other people do, have his cultural needs been met?*"

Another non-Aboriginal carer of an Aboriginal child commented, however, that she believed her LINKS worker was attuned to the child's cultural needs. It is apparent that for non-Aboriginal carers of Aboriginal children there are complex perspectives and perceptions of how cultural needs of the children in their care are being met.

Comparison with other services

Family interviews

Carers often compared their experiences with LINKS to their experiences with their current or previous DCJ caseworkers. While many carers reported having positive relationships with their caseworkers, some carers felt they received more frequent and personalised support from LINKS staff, compared to their caseworkers. Some carers appreciated that this was due to a lack of resources and/or a lack of awareness about trauma symptoms among caseworkers. Other carers noted that it was due to the specialised nature of LINKS and its delivery of tailored trauma-informed supports for children and families.

Moreover, many carers had accessed support services to address the trauma-based needs of the children in their care in the past. When comparing LINKS to other previously engaged support services, carers overwhelmingly indicated that LINKS was better able to meet the specific needs of their families. An important aspect of LINKS identified by carers was that they felt they were being heard and had greater input in relation to their involvement with LINKS when compared to other services. Carers emphasised that their input was taken on board by LINKS staff and resulted in better outcomes for their children and families. Other reasons why carers believed LINKS was superior to other services included that they formed better relationships with LINKS staff, were given better strategies to use in the home and found the environment to be more relaxed. These

carers made special mention of LINKS as particularly effective in helping the children in their care to develop techniques for emotional regulation, improve behavioural management strategies and in the building of positive relationships with peers and adults (particularly at school), as these quotes demonstrate:

> "*She's able to not be as upset about things and being able to talk about things a bit more openly. The counsellor there at LINKS actually helped her to feel better about herself.*"

> "*…he was able to identify emotions and just sort of say, he needed to take a break, or he was really frustrated, which he really couldn't do before. He had no sort of self-regulation at all*".

> "*I've had the children in my care for about two and a half years now and we've pretty much had psychology on a weekly basis since the two and a half years and we've had nothing happening at all with progress or no help whatsoever and just been going there to waste time in my opinion, and I often feel like what's the point of doing it? This is the first time I've felt like we're getting something achieved finally and something's happening and to know that it's only a 20-something session…*"

Relationship between children and LINKS staff

Family interviews

Carers commended the capacity of LINKS staff to form strong and positive relationships with the children in their care. Carers believed that a sense of connectedness and trust had been established and that LINKS staff were invested in improving the wellbeing of the children in their care. Carers reported that their children looked forward to meeting with their LINKS therapist. One carer described how the child in her care became more engaged in therapy as a result of the connection she made with her LINKS counsellor:

> "*She went once a week. She started off going half an hour because she said, oh, I didn't want to go for any longer. In the end she asked to go for an hour because she was so comfortable with the lady that she was talking to and she said that she was helping her so much that she ended up going for an hour.*"

Carers felt that the trust and understanding that had been built between their children and LINKS staff meant that their children were happy and comfortable during sessions and were more likely to have honest and open discussions with their LINKS therapist. Carers stressed that this was a crucial aspect of the success they were seeing.

Relationship between carers/families and LINKS staff

Family interviews

Carers interviewed in 2018 and 2019 all emphasised that they had developed strong and positive relationships with LINKS staff and that this in turn strengthened their capacity to cope with the trauma symptoms exhibited by the children in their care. Carers viewed LINKS staff as a fundamental part of their support system, taking comfort in knowing that LINKS staff were there to assist and listen to them whenever they were experiencing difficulties in the home. Carers reported that LINKS staff were available to them not just during sessions, but over the phone, and praised LINKS staff for their responsiveness. LINKS staff were also praised for keeping carers informed about the treatments their children were engaged in and seeking their input.

Many carers reported that their contact and rapport with LINKS staff had been positive because they felt able to gain the information they needed. Carers noted that LINKS professionals were accessible and approachable. The qualitative commentaries offer insight on the types of additional support valued by carers. These supports highlight that it is not just what happens within the context of therapeutic sessions that carers value, but also the ways in which conversations with professionals are managed in and around therapy. While the circumstances of each family

differed, some common narrative threads emerged on this issue. In particular, carers valued the opportunity to be able to talk to professionals about challenges as they emerged, from week to week. Across the pool of interviewees, the vast majority of the carers highlighted that the way in which LINKS was conducted had been different to their engagement with other frontline services, and the opportunities for more immediate communication were valued. Two quotes emblematic of this type of feedback provided by carers are provided below.

> "*I definitely – I got more out of the LINKS thing than I did the different parenting courses and what not. I guess because it was that ongoing sort of support. How the week had been and all that sort of stuff.*"

> "*I've only dealt with [name removed], and she's great. She answers my questions. She explains things in detail if I'm not sure what it's for… it was really helpful*".

The interviews also provided an opportunity to glean insights on why carers perceived the communication strategies used to engage with them were effective. Carers consistently noted that conversations with therapists 'out of session' provided an opportunity to deepen their understanding of the issues faced by children who have experienced trauma. In addition, the ability to engage in this dialogue week to week, offered reciprocal benefits to both frontline professional and carer. Carers argued that they appreciated the opportunity to provide additional information to the professional on the ever-changing context of family life, and in turn they appreciated the ability to gain more transparency and understanding of the purpose and meaning of the services being provided.

> "*…they were ringing up and spending quite a lot of time on the phone explaining things to me, and so it was really good. Like, they really explained things well and it wasn't like I have done this before, this is it and I will send it to you, that's it. It was more like, look these are the reports, this is what I have put in it, and is there anything else that you think that I have missed so it was sort of including me in it*".

> "*…I think that's the most supportive role for me at the moment because a lot of the time it's, oh we can't talk to you about it, and we can't do this. … I just love that she is on the other end of an email. Like, I'll email her and she will email me back either the same day or by the next day with, yeah, this is how it's going, or you know, if you need anything from me, or any documents, or here's a strategy*".

> "*We had a lot of discussion around the activities …they would undertake in the sessions and then I'd provide feedback on how it impacted on [child's name removed] at home or her schooling…*".

One carer described the real-time, and immediate way they could raise issues with the LINKS contact as very impactful by simply saying "*They're my sounding board.*"

In addition, carers valued the non-judgemental nature of LINKS staff. Carers explained that LINKS staff understood the unique demands of caring for children who have experienced trauma and that this was lacking in their regular support systems or other generalist support services. This meant that carers were able to speak openly about their challenging experiences because they felt free from judgement. As such, LINKS staff were viewed as better positioned to provide support that was relevant to their experiences.

Connecting with other carers

Family interviews

Carers who had participated in the TIK/TIK(T) programs reported that they appreciated the opportunity to connect with other carers who were also caring for children with trauma symptoms. Carers valued being able to learn and hear stories from other carers, discussing how this in turn

strengthened their insight into how to manage and cope with their children and how it made them feel less isolated.

Improving LINKS

Family interviews

When prompted about what could be improved about LINKS, a number of suggestions were proposed. The most common ways carers believed LINKS could be improved was through increasing the awareness of LINKS among carers, providing LINKS services to more families, and ensuring that access to the service is offered and facilitated as early on in placements as possible.

Other recommendations included improving communication between DCJ caseworkers and LINKS staff to aid information sharing, and providing treatments to children in less formal and sterile environments.

One carer suggested providing ongoing support groups for carers because they had found the opportunity to connect with carers to be a rich and beneficial experience. This also inspired the carer to suggest a similar support program where teenagers could connect with peers who have had similar trauma related experiences.

Many families accessed a mix of funding supports and subsidies (including NDIS) to source therapies for the children in their care, and some carers recommended improvements to the way those mixes are handled. One carer described the lack of transparency in the cross-over points in the DCJ/NDIS systems and argued that this confusion ultimately delayed access to very necessary treatments for their children.

Recommending LINKS

Family interviews

Across both interview periods, carers were asked whether they would recommend LINKS to other families and they overwhelmingly responded in the affirmative. Carers believed that other families could benefit greatly from having the same level of support from LINKS staff that they had been afforded, including their responsiveness and capacity to provide trauma informed psychological support that produced tangible changes in the behaviours and overall wellbeing of their children. Carers also believed that other carers could benefit from learning about how trauma impacts children and strategies to manage trauma symptoms in the home.

4.3. Outcome evaluation

Figure 4 indicates reasons for exits from LINKS. Overall, 208 of the 264 CYP who had started intervention with LINKS (even if they had not been allocated to a specific program/s) had exited the service as at end December 2019. Of those who exited, 108 (52%) were determined to have completed treatment (which is higher than in 2018 (15%) when the implementation of LINKS was in its earliest stages, but close to the figure in 2019 (54%)). Of these 108, 59 (55%) had achieved their treatment goals, 39 (36%) had made some progress towards achieving treatment goals and for 10 families no information about goal achievement was provided.

The remainder of the CYPs (*n*=100, 48%) who had exited LINKS as at January 1st 2020 had discontinued treatment prior to completion of a program, for various reasons, including:

- families terminated service (26)

- families moved out of area (14)

- unable to engage families (18)

- unable to contact/client dropped out (19)

- other (e.g. placement breakdown, the child is seeing therapist elsewhere, family declined service) (23).

Note that for some of these CYPs who exited prior to treatment completion, goals may have been partially or fully met, even despite not completing the full complement of intended program sessions. For instance, of the 100 who discontinued prior to treatment completion, while none had *fully* achieved treatment goals, 40 CYPs (40%) had made *some* progress towards their treatment goals (a lower rate than in 2018 - 48%).
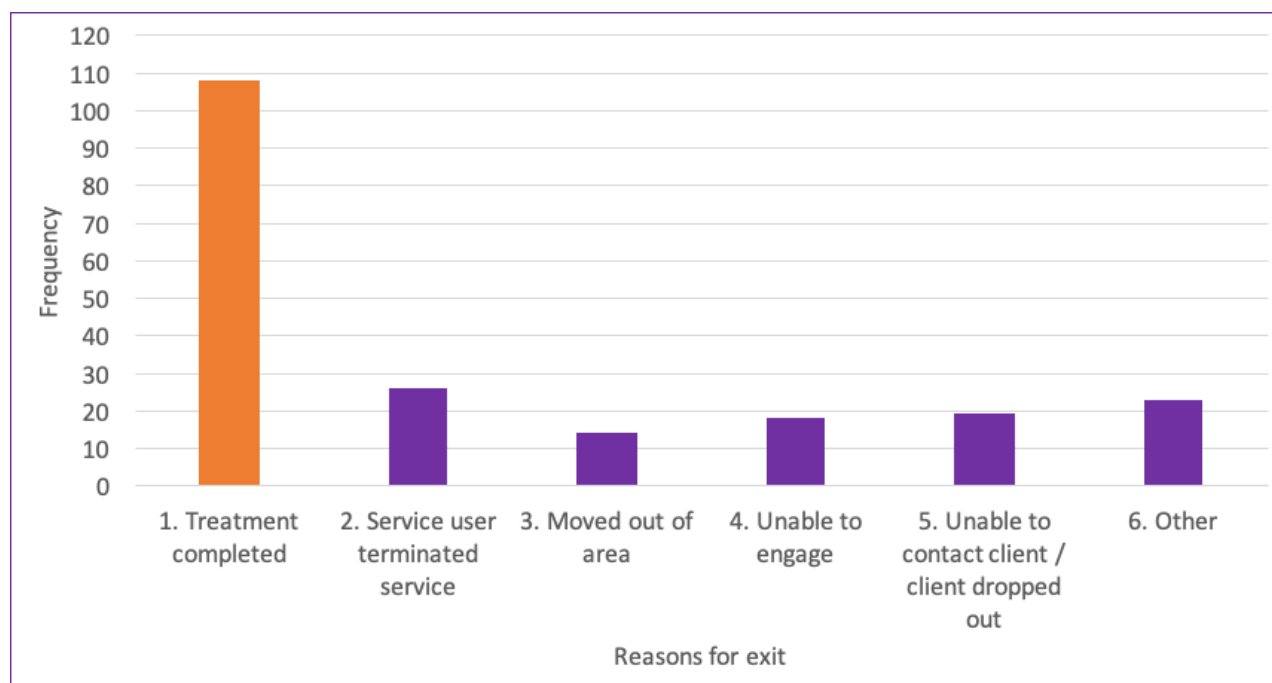
Figure 4. Reasons for exit from LINKS

Is LINKS more effective at increasing placement stability than Business as Usual[9]?

Table 9 reports the mean total number of placements recorded for LINKS CYPs who entered and subsequently exited (may have been an early discontinuation without treatment completion) LINKS between October 2017 and December 2019, and for comparison group CYPs who were successfully matched using propensity score matching to LINKS-referred CYPs. The table shows the mean number of placement changes for each group over two time periods: (1) any time prior to October 2017[10] when LINKS first started accepting clients and (2) 1st October 2017 to 31st December 2019.

A significant treatment effect was detected for changes in the mean number of placements over time, favouring the LINKS CYPs, $F(1, 502) = 58.086$, $p<.001$, with a moderate to large effect size ($\eta^2=.104$). For both groups the mean number of placement changes during the October 2017 to December 2019 time period was higher than prior to October 2017, although the magnitude of the increase for LINKS CYPs was lower than it was for the comparison sample. Even though LINKS CYPs had a slightly lower mean number of placements historically prior to October 2017, their mean increased by less than one additional placement during the period of LINKS' existence, compared to a mean increase of over two additional placement changes for non-LINKS CYPs. The treatment effect held when covariates for CYP Aboriginal status and date of birth were added to the repeated measures analysis, with only child age contributing a significant unique amount of

---

[9] Business as usual refers to children in OOHC not receiving LINKS. This sample was drawn from DCJ data about all CYPs living in OOHC between 2017 and 2019, living in locations where LINKS is not available.
[10] Placement histories are available for CYPs in the sample for as early as July 2003.

variance to the analysis. The effect also held when the analysis was performed just using LINKS CYPs who had completed treatment (n=98 of whom were successfully matched to a comparison sample CYP) compared to the matched comparison sample (n=311), F(1, 407) = 47.513, p<.001, η^2=.105 indicating a moderate to large effect size. The mean number of placement changes during the LINKS intervention period (October 2017 to December 2019) for those who completed a LINKS program was 0.93 (SD = 1.731), which is lower than the mean number for those who exited treatment with or without actually completing a program (M = 1.40, SD = 2.221). Thus it would seem that completing a program in LINKS was associated with better outcomes than both no LINKS or some LINKS treatment.

Table 9. Number of placements for matched LINKS CYPs and comparison CYPs over time and associated test of repeated measures between-groups ANOVA.

	Matched CYPs who exited LINKS		Matched comparison sample CYPs		Homogeneity p at pre (p at post/exit)[a]	Test of between-subjects effects	η^2
	N	*M*(*SD*)	*N*	*M*(*SD*)			
Before October 2017	193	0.79 (1.191)	311	1.06 (1.659)	.275 (<.001)	F(1,502) = 58.086, p<.001***	.104
1st Oct 2017 to 31st Dec 2019	193	1.41 (2.221)	311	3.81 (3.950)			
	Matched CYPs who completed a LINKS program		Matched comparison sample CYPs				
Before October 2017	98	0.72 (1.338)	311	1.06 (1.659)	.627 (<.001)	F(1,407) = 47.513, p<.001***	.105
1st Oct 2017 to 31st Dec 2019	98	0.93 (1.731)	311	3.81 (3.950)			

***p<.001
Partial eta squared (η^2) values are considered to be small when around 0.01, medium around 0.06, and large around 0.13 (Cohen, 1988).
[a] Given violation of the assumption of homogeneity, we also ran a non-parametric alternative to the repeated measures between groups ANOVAs, and results of both of the independent sample Mann-Whitney U Tests were significant (p<.001).

Is LINKS more effective at reducing re-reported Risk of Significant Harm than Business as Usual?

Table 10 reports the mean total number of ROSH reports recorded for LINKS CYPs who entered and subsequently exited (may have been an early discontinuation without treatment completion) LINKS between October 2017 and December 2019, and for comparison group CYPs who were successfully matched using propensity score matching to LINKS-referred CYPs. The table shows the mean number of reports for each group over the two time periods: (1) any time prior to October 2017 when LINKS first started accepting clients and (2) 1st October 2017 to 31st December 2019.

While no statistically significant between-groups effect was found for changes in the mean number of ROSH reports over time, the decrease in mean ROSH reports was greater for the LINKS cohort than for the matched comparison group. While a significant effect did result when tested using non-parametric analyses (given violation of the assumption of homogeneity), the effect size revealed in the parametric test was very small (η^2= .003), so a marginal treatment effect is concluded. There

was no influence on the analysis when CYP date of birth and Aboriginal status were included as covariates.

When running the matched samples analysis just using those who completed a LINKS program (*n*=98 of whom could be successfully matched to a comparison sample CYP) a just non-significant treatment effect was detected (*p*=.061). Despite non-significance and the small effect size, the results are in the desired direction, with CYPs successfully completing a LINKS program realising a larger reduction in mean ROSH reports during the time of the LINKS intervention compared to those not referred to LINKS. Furthermore, the average number of ROSH for treatment completers was less than half that of the matched comparison sample, for the October 2017 to December 2019 period. Thus, LINKS treatment completers had a lower rate of ROSH reports during this time than both the matched comparison sample and those who discontinued LINKS prior to treatment completion.

Taken together, these findings - while not statistically significant - are encouraging, particularly given the likelihood that CYPs engaged in an intervention receive more ROSH reports while in receipt of services, because they are more 'visible' to the child welfare system (i.e. services/ professionals are more aware of what's going on for this child on a day-to-day basis, and therefore any perceived risks are more likely to be observed and reported than if a child was not currently engaged in an intervention or program).

Table 10. Number of ROSH reports for matched LINKS CYPs and comparison CYPs over time and associated test of repeated measures between-groups ANOVA.

	Matched CYPs who exited LINKS		Matched comparison sample CYPs				
	N	*M(SD)*	*N*	*M(SD)*	Homogeneity *p* at pre (*p* at post/exit)[a]	Test of between-subjects effects	η^2
Before October 2017	193	14.03 (10.757)	311	12.95 (10.724)	.864 (<.01)	$F(1,502) = 1.344$, *p*=.247	.003
1st Oct 2017 to 31st Dec 2019	193	3.84 (4.704)	311	6.27 (6.556)			
	Matched CYPs who completed a LINKS program		Matched comparison sample CYPs				
Before October 2017	98	13.87 (10.485)	311	12.95 (10.724)	.759 (<.001)	$F(1,407) = 3.540$, *p*=.061	.009
1st Oct 2017 to 31st Dec 2019	98	2.62 (3.167)	311	6.27 (6.556)			

Partial eta squared (η^2) values are considered to be small when around 0.01, medium around 0.06, and large around 0.13 (Cohen, 1988).
[a] Given violation of the assumption of homogeneity, we also ran a non-parametric alternative to the repeated measures between groups ANOVA, and results of the independent samples Mann-Whitney U Tests were significant (*p*<.001).

Restoration to the birth family

Rates of CYP restoration to the birth family during the October 2017 to December 2019 period was also examined (descriptively – not statistically), with 4% (that is 10 out of 271 cases) of LINKS referred CYPs being restored to family during that time, compared to 5% of matched comparison sample CYP (that is 26 out of 476 cases).

Analysis of secondary outcomes with standardised outcome measures

Service provider records

Repeated measures ANCOVAs were conducted to determine where statistically significant differences existed between treatment completers and those who exited without completing a program (discontinued early) on key outcomes measures (see Table 2) for pre-intervention to post-intervention scores, controlling for relevant factors. Appendix C outlines scoring conventions and clinical cut-offs (where relevant) for each measures. Follow-up data were available for a small number of treatment completers (at 6 and 12 months post-exit) for most outcomes measures, and while statistical analyses of these data is precluded by the small sample sizes, follow-up results are discussed as early indicators of longer term outcomes associated with LINKS.

Child psychological wellbeing and behavioural and emotional functioning

When examining pre- to post-intervention change in carer-completed SDQ Total Problem Scale and subscale scores **for treatment completers only**, ANOVA detected significant differences over time in mean Total Problem scale scores, $F(1,99) = 33.908$, $p<.001$, $\eta^2=.255$, in mean Emotional Symptoms subscale scores, $F(1,104) = 30.574$, $p<.001$, $\eta^2=.227$, Conduct Problems subscale scores, $F(1,104) = 22.467$, $p<.001$, $\eta^2=.178$ and to a lesser extent, although still significant at $p<.01$ in mean Hyperactivity/Inattention subscale scores, $F(1,104) = 8.149$, $p<.01$, $\eta^2=.073$ and in mean Peer Relationship Problems scores, $F(1,102) = 9.882$, $p<.01$, $\eta^2=.088$. The only subscale not to show pre- to post-intervention significant change when looking at only the treatment completers was Prosocial Behaviour. Nevertheless, for those who completed a program, all post-intervention SDQ mean scores showed improvement on pre-intervention scores (see Figure 5), with many of these showing large effect sizes (>.13).

When **comparing treatment completers with those who exited LINKS prior to treatment completion**, a significant effect of treatment completion was found for mean scores on the SDQ Total Problem Scale, $F(1,85) = 6.826$, $p<.05$, $\eta^2=.074$ and for the Conduct Problems subscale, $F(1,90) = 8.766$, $p<.01$, $\eta^2=.089$, when controlling for the number of sessions attended. Both of these significant treatment effects held when adding child age, gender, Aboriginality, and IRSD to the ANCOVA as covariates (see Table 11). In addition to treatment completion ($p<.01$) and the number of sessions completed ($p<.01$), IRSD scores were also found to contribute significantly ($p<.05$) to the effect of treatment on change in mean SDQ Total Problem scores. For Conduct Problems, the significant treatment effect ($p<.01$) held, although only number of sessions attended ($p<.05$) contributed significantly to the effect of treatment.

There were no significant treatment effects for the Emotional Symptoms, Hyperactivity/Inattention, Peer Relationship Problems or the Prosocial Behaviour subscales, when accounting only for the number of sessions completed. And for Hyperactivity/Inattention and Prosocial Behaviour this lack of evidence of treatment effect held when child age, gender, Aboriginality, and IRSD were added to the ANCOVA as covariates. However, when adjusting analyses for these additional covariates, a significant treatment effect was detected for Emotional Symptoms, $F(1,86) = 5.234$, $p<.05$, $\eta^2=.057$, with child age contributing significantly ($p<.01$) to the effect of treatment on this variable in addition to the number of sessions attended ($p<.01$). A significant treatment effect was also detected for Peer Relationship Problems, $F(1,83) = 6.641$, $p<.05$, $\eta^2=.074$, with child age ($p<.01$) and IRSD ($p<.01$) contributing significantly to the effect of treatment on this variable in addition to the number of sessions attended ($p<.05$).

Despite some areas of non-significance, the results are in the desired direction for both treatment completers and early exiters on all subscales, and in most cases it seems there are greater relative change in SDQ scores for the treatment completer group compared to those who discontinued early (see Figure 5).
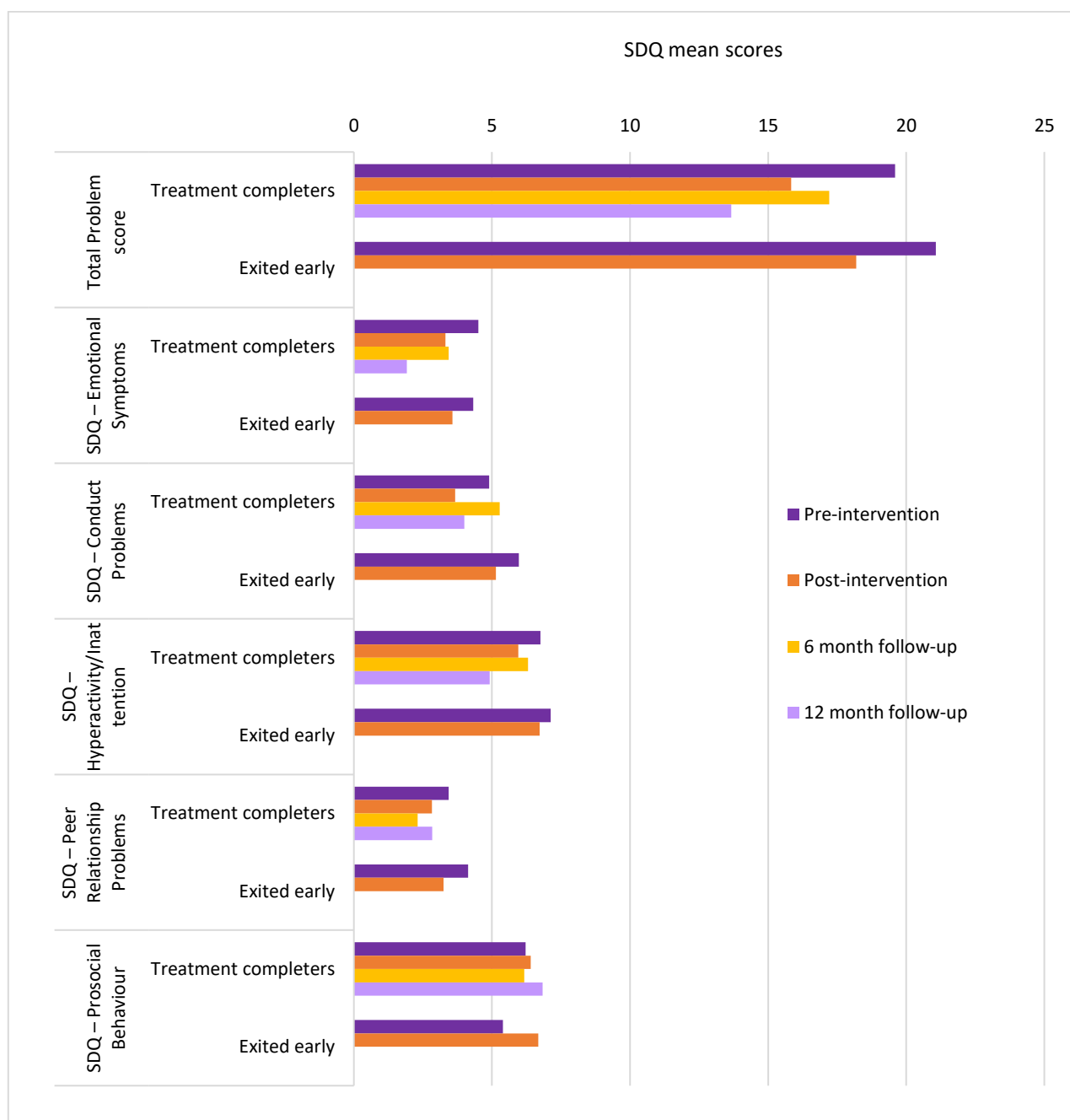
Figure 5. Pre-, Post- and follow-up SDQ mean scores for treatment completers and those who exited early.

Follow-up data was available for 30 (6 month follow-up) and 12 (12 month follow-up) CYPs who completed a program in LINKS. With some variability across subscales (e.g. mean Conduct Problems scores show an increase since post-test), the trend suggests gains have been generally maintained at follow-up (see Figure 5).

The observation that mean scores on entry (for both treatment completers and early exiters) were high (e.g. an SDQ Total Score over 20 indicates clinically significant challenges) suggests LINKS is reaching the intended target group of children experiencing behavioural, emotional and psychological difficulties.

Table 11. Between-subjects repeated measures ANCOVA for pre- and post-intervention subscale and total scores for the SDQ[a]

	N	Pre-intervention M (SD)	Post-intervention/exit M (SD)	Homogeneity p at pre (p at post/exit)	Test of between-subjects effects[b]	η^2
Total Problem score						
Treatment completers	100	19.60 (6.372)	15.83 (6.067)	.707 (.334)	$F(1,81) = 8.937$, $p=.004^{**}$	.099
Not completed	27	21.07 (7.359)	18.19 (7.104)			
SDQ – Emotional Symptoms						
Treatment completers	105	4.51 (2.382)	3.32 (2.483)	.956 (.358)	$F(1,86) = 5.234$, $p=.025^*$	.057
Not completed	28	4.32 (2.389)	3.57 (2.574)			
SDQ – Conduct Problems						
Treatment completers	105	4.90 (2.596)	3.67 (2.156)	.317 (.225)	$F(1,86) = 8.540$, $p=.004^{**}$	.090
Not completed	29	5.97 (2.946)	5.14 (2.656)			
SDQ – Hyperactivity/Inattention						
Treatment completers	105	6.76 (2.559)	5.95 (2.363)	.977 (.925)	$F(1,88) = 1.281$, $p=.261$	.014
Not completed	30	7.13 (2.460)	6.73 (2.392)			
SDQ – Peer Relationship Problems						
Treatment completers	103	3.43 (1.877)	2.83 (2.073)	.255 (.613)	$F(1,83) = 6.641$, $p=.012^*$	.074
Not completed	28	4.14 (2.549)	3.25 (2.137)			
SDQ – Prosocial Behaviour						
Treatment completers	104	6.22 (2.251)	6.40 (1.905)	.565 (.219)	$F(1,88) = 2.021$, $p=.159$	.022
Not completed	30	5.40 (2.358)	6.68 (2.044)			

$^*p<.05$, $^{**}p<.01$, $^{***}p<.001$

Partial eta squared (η^2) values are considered to be small when around 0.01, medium around 0.06, and large around 0.13 (Cohen, 1988).

[a] Relevant only for children 2-17 years of age.

[b] Covariates = number of sessions attended, socioeconomic status of the family and for child age, gender and Aboriginality. Means in table are unadjusted.

Data for the clinician-completed HoNOSCA showed consistently downward trends in ratings of problems across subscales and for the Total Score, in the desired direction for both treatment completers and those who discontinued early (see Figure 6).
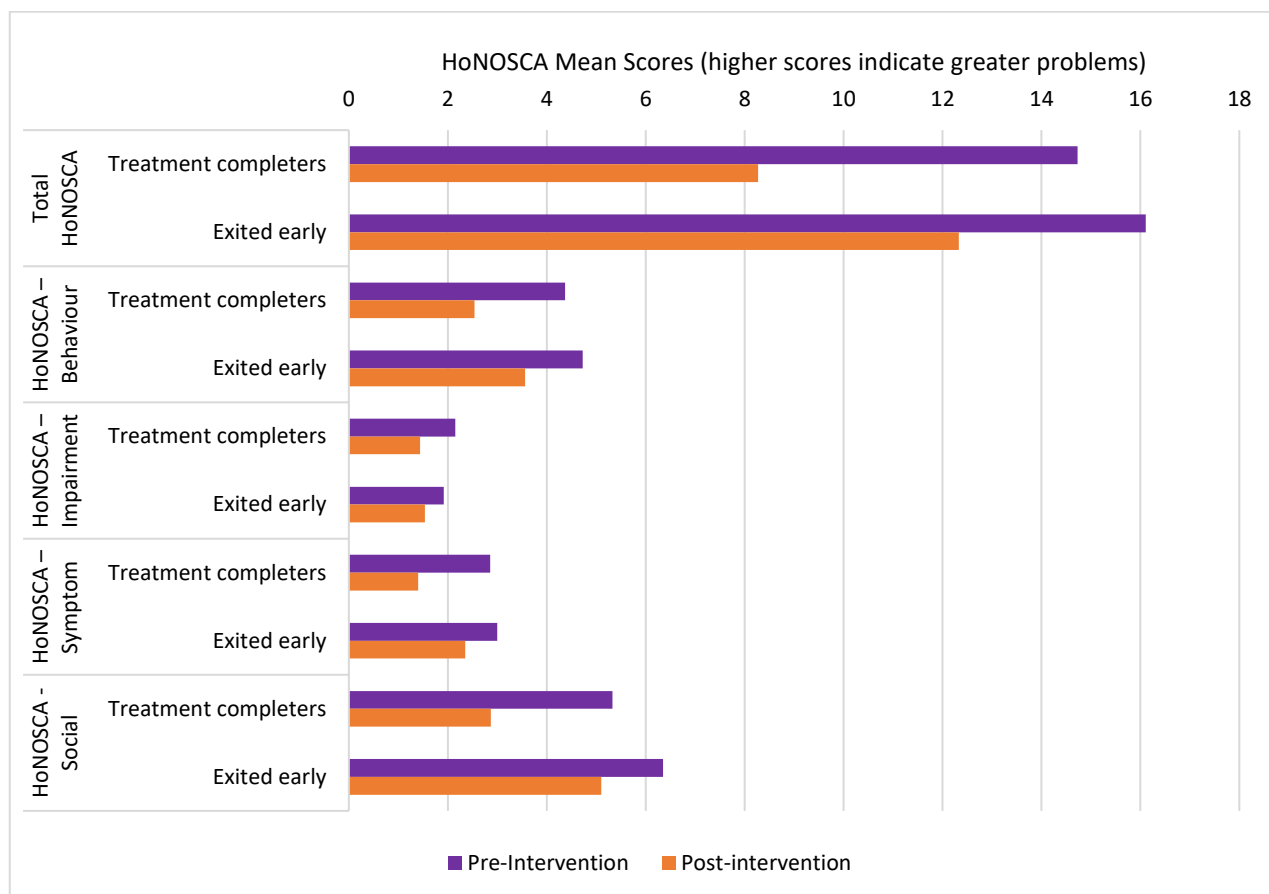
Figure 6. Pre- and post-intervention HoNOSCA mean scores for treatment completers and those who exited early.

When examining pre- to post-intervention change in HoNOSCA scores **for treatment completers only**, ANOVA found significant differences on the Total Score, $F(1,94) = 89.777$, $p<.001$, $\eta^2=.489$, and all subscales: the Behaviour subscale, $F(1,102) = 65.4401$, $p<.001$, $\eta^2=.391$, the Impairment subscale, $F(1,100) = 23.689$, $p<.001$, $\eta^2=.192$, the Symptoms subscale, $F(1,102) = 71.538$, $p<.001$, $\eta^2=.412$, and the Social subscale, $F(1,100) = 58.833$, $p<.001$, $\eta^2=.370$. All of these showed large effect sizes ($\eta^2>.13$).

While this trend towards improvements was observable for both the **LINKS completer group and the exit early group**, the magnitude of change over time was greater for treatment completers in all cases (as illustrated in Figure 6), significantly so for the Total Score, $F(1,96) = 14.564$, $p<.001$, $\eta^2=.132$, the Behaviour scale, $F(1,102) = 7.879$, $p<.01$, $\eta^2=.072$, the Symptoms scale, $F(1,103) = 6.439$, $p<.05$, $\eta^2=.059$, and for the Social scale, $F(1,103) = 18.894$, $p<.001$, $\eta^2=.155$ when analysed in ANCOVA controlling for the number of treatment sessions attended.

The treatment effect held for all of these scores when analysed in ANCOVA controlling for number of treatment sessions in addition to child age, gender, Aboriginality, and IRSD. For the Total HoNOSCA , $F(1,92) = 15.623$, $p<.001$, $\eta^2=.145$, child age ($p<.05$) was the only covariate found to significantly contribute to the treatment effect. The treatment effect held for the Behavioural subscale when accounting for these additional covariates, $F(1,98) = 6.756$, $p<.05$, $\eta^2=.064$, with child gender the only covariate significantly ($p<.01$) contributing to this treatment effect. The treatment effect for the Symptoms subscale when accounting for these additional covariates, $F(1,99) = 10.083$, $p<.01$, $\eta^2=.092$, showed that child age was the only covariate to significantly

contribute to this treatment effect (*p*<.01). And for the Social subscale, the significant treatment effect when controlling for number of treatment sessions in addition to child age, gender, Aboriginality, and IRSD, $F(1,99) = 23.143$, *p*<.001, η^2=.189, also showed child age to be the only covariate to significantly contribute to this treatment effect (*p*<.05). See Table 12 for a summary of the between-subjects repeated measures ANCOVA for HoNOSCA scores, controlling for all named covariates.

The effect size was large for the Total Score, and for the Symptoms Subscale and the Social subscale. For the Total HoNOSCA score 15% of the total variance in scores could be explained by treatment, and for the Social subscale this was 19%.

Follow-up data for HoNOSCA was not collected.

Table 12. Between-subjects repeated measures ANCOVA for pre- and post-intervention subscale and total scores for the HoNOSCA[a]

	N	Pre-intervention M (SD)	Post-intervention/exit M (SD)	Homogeneity p at pre (p at post/exit)	Test of between-subjects effects[b]	η^2
Total HoNOSCA						
Treatment completers	95	14.73 (6.409)	8.27 (4.653)	.885 (.629)	$F(1,92) = 15.623$, *p*=.000***	.145
Not completed	45	16.11 (5.769)	12.33 (5.377)			
HoNOSCA – Behaviour						
Treatment completers	103	4.37 (2.314)	2.54 (1.539)	. 354 (.287)	$F(1,98) = 6.756$, *p*=.011*	.064
Not completed	48	4.73 (2.161)	3.56 (1.844)			
HoNOSCA – Impairment						
Treatment completers	101	2.15 (1.609)	1.44 (1.252)	.813 (.837)	$F(1,98) = .136$, *p*=.713	.001
Not completed	48	1.92 (1.674)	1.54 (1.304)			
HoNOSCA – Symptom						
Treatment completers	103	2.86 (1.692)	1.40 (1.49)	.549 (.130)	$F(1,99) = 10.083$, *p*=.002**	.092
Not completed	48	3.00 (1.584)	2.35 (1.480)			
HoNOSCA - Social						
Treatment completers	101	5.33 (3.086)	2.87 (2.067)	.149 (.302)	$F(1,99) = 23.143$, *p*=.000***	.189
Not completed	49	6.35 (2.463)	5.10 (2.903)			

**p*<.05, ***p*<.01, ****p*<.001, partial eta squared (η^2) values are considered to be small when around 0.01, medium around 0.06, and large around 0.13 (Cohen, 1988).
[a] Relevant only for CYP 5-18 years of age.
[b] Covariates = number of sessions attended, socioeconomic status of the family and for child age, gender and Aboriginality. Means in table are unadjusted.

Little can be said about CYPs' own ratings about their personal wellbeing using the PWI-SC, due to insufficient data (*n*=13 in total at pre; *n*=6 in total at post – all of whom at post were treatment completers, see Table 13). Given that mean entry scores for both treatment completers and others is below the developer-recommended cut-off of 73.4, the CYP receiving LINKS do seem to be experiencing concerning levels of personal wellbeing upon referral, and those who have completed treatment in LINKS showed a mean increase in PWI-SC scores, even though the mean post-intervention score for treatment completers remained below the clinical cut-off (i.e. their wellbeing was still poorer than desirable).

Follow-up data was available for six CYP (6-month follow-up) and two (12-month follow-up) CYPs who completed a program in LINKS. The data suggest continuing improvements in wellbeing for CYP at follow-up for treatment completers (see Table 13).

Table 13. Pre-, Post- and follow-up mean total scores for the PWI-SC[a]

		Pre-intervention *M (SD)*		Post- intervention/exit *M (SD)*		6 month follow-up *M (SD)*		12 month follow-up *M (SD)*
Treatment completers	*n*=7	49.00 (6.272)	*n*=6	63.67 (7.339)	*n*=6	70.50 (8.019)	*n*=2	73.00 (9.899)
Not completed	*n*=6	48.50 (19.756)	*n*=0	NA		NA	*n*=0	NA

[a] Relevant only for CYP 12+ years of age.

Trauma Symptoms

Pre- and post-intervention data collected using the self-report Trauma Symptoms Checklist for Children (TSCC; for 8-16 year olds) and Trauma Symptoms Checklist for Young Children (TSCYC; for 3-12 year olds[11]) were analysed to measure change in trauma symptomatology among LINKS CYPs. Raw scores for each measures were transformed into age- and sex-appropriate T scores which were used in analyses.

When examining pre- to post-intervention change in subscale scores of the TSCC and TSCYC **for treatment completers only**, ANOVA found a number of significant differences in TSCYC and TSCC subscale scores.

On the TSCYC, there were significant pre- to post-intervention change for treatment completers on the Depression subscale, $F(1,69) = 32.388$, $p<.001$, $\eta^2=.319$, the Anger/Aggression subscale, $F(1,69) = 37.657$, $p<.001$, $\eta^2=.353$, the Posttraumatic Stress (Avoidance) subscale, $F(1,69) = 20.600$, $p<.001$, $\eta^2=.230$, the Posttraumatic Stress (Arousal) subscale, $F(1,69) = 30.654$, $p<.001$, $\eta^2=.308$, the Post-traumatic Stress (Total) scale, $F(1,69) = 31.964$, $p<.001$, $\eta^2=.317$, the Dissociation subscale, $F(1,69) = 21.014$, $p<.001$, $\eta^2=.233$, and to a lesser, though still statistically significant extent the Posttraumatic Stress (Intrusion) subscale, $F(1,69) = 9.554$, $p<.01$, $\eta^2=.122$, the Anxiety subscale, $F(1,69) = 12.858$, $p<.01$, $\eta^2=.157$, and the Sexual Concerns subscale, $F(1,69) = 12.372$, $p<.01$, $\eta^2=.152$. Many of these show large effect sizes (i.e. $\eta^2>.13$) for treatment completers. Mean score changes for treatment completers were in the desired direction across all TSCYC subscales (see Figure 7).

---

[11] The child's assigned therapist made the decision about which version to use, and for 8-12 year olds, it could have been either version of the Checklist, but was always the same version pre- and post-intervention for an individual CYP.

For older children, using the TSCC, there were significant pre- to post-intervention changes for treatment completers on the Posttraumatic Stress subscale, $F(1,26) = 9.470$, $p<.01$, $\eta^2=.267$, and to a lesser extent – though still with large effect sizes – on the Depression subscale, $F(1,26) = 7.701$, $p<.05$, $\eta^2=.229$, the Anger subscale, $F(1,26) = 5.025$, $p<.05$, $\eta^2=.162$, and the Sexual Preoccupation subscale, $F(1,19) = 5.907$, $p<.05$, $\eta^2=.237$.

There were no significant differences on the Anxiety, Dissociation, Overt Dissociation, Fantasy, Sexual Concerns and Sexual Distress TSCC subscales, possibly due to the smaller sample size ($n=27$) available for analysis of pre to post-intervention changes for treatment completers compared to the sample available for analyses involving younger children using the TSCYC ($n=70$). The other possible explanation is the fairly low pre-intervention scores on TSCC subscales - none of the mean T scores for TSCC subscales on entry were in the clinically concerning range (i.e. 60+).

When examining **differences between treatment completers and those who discontinued early**, it is evident from consideration of Figure 7 and 8 that early exiters also saw changes from pre to post (with the exception of the Overt Dissociation subscale of the TSCC).

ANCOVA revealed significant differences between treatment completers and non-completers for only one subscale (Posttraumatic Stress - Intrusion) of the **TSCYC** after controlling for the number of sessions attended, $F(1,63) = 4.757$, $p<.05$, $\eta^2=.070$. Thus, given the lower post-intervention scores on this subscale for the treatment group compared to the early exit group, we can conclude that there is evidence of a treatment effect for this domain of the TSCYC, as the repeated measures ANCOVA controls for the effect of pre-intervention scores plus the number of sessions attended.

There were no significant treatment effects for Depression, Anxiety, Anger/Aggression, Posttraumatic Stress (Avoidance), Posttraumatic Stress (Arousal), Posttraumatic Stress (Total), Dissociation or Sexual Concerns, when accounting for the number of sessions attended by treatment completers and early exiters. ANCOVAs for these same subscales of the TSCYC remained non-significant with the addition of child age, gender, Aboriginality, and IRSD as covariates in the analysis (see Table 14).

Furthermore, with the addition of child age, gender, Aboriginality, and IRSD as covariates, the treatment effect for Posttraumatic Stress (Intrusion), $F(1,59) = 4.689$, $p<.05$, $\eta^2=.074$, did hold up, and showed a moderate effect size, although none of the included covariates contributed significantly to the effect of treatment on these scores (see Table 14 for a summary of the TSCYC ANCOVAs that include all covariates).

Conversely, there were no significant between-group ANCOVA differences for **TSCC** mean scores for older children, controlling for number of treatment sessions attended, and with the exception of Posttraumatic Stress subscale scores, the absence of differences held when additional covariates of child age, gender, Aboriginality, and IRSD were added to the analyses. For Posttraumatic Stress, a significant between groups difference was found when controlling for number of sessions, child age, gender, Aboriginality, and IRSD, $F(1,17) = 4.638$, $p<.05$, $\eta^2=.214$ (a large effect size), although none of the covariates contributed significantly to this effect. It appears from Figure 8 that the magnitude of change on the Posttraumatic Stress subscale of the TSCC was greater for those who completed treatment, although it should be noted that their pre-intervention scores were higher than those who discontinued early.

Pre to post changes on the TSCC were in the desired direction across all subscales for treatment completers. For those who exited early this was also true for all subscales except the Overt Dissociation subscale - mean scores for these five CYPs increased slightly at exit.

While none of the mean T scores for TSCC subscales on entry were in the clinically concerning range (i.e. 60+), a number of pre-intervention TSCYC subscale mean scores were above the cut-off suggestive of sub-clinical symptomatology (i.e. 65+).
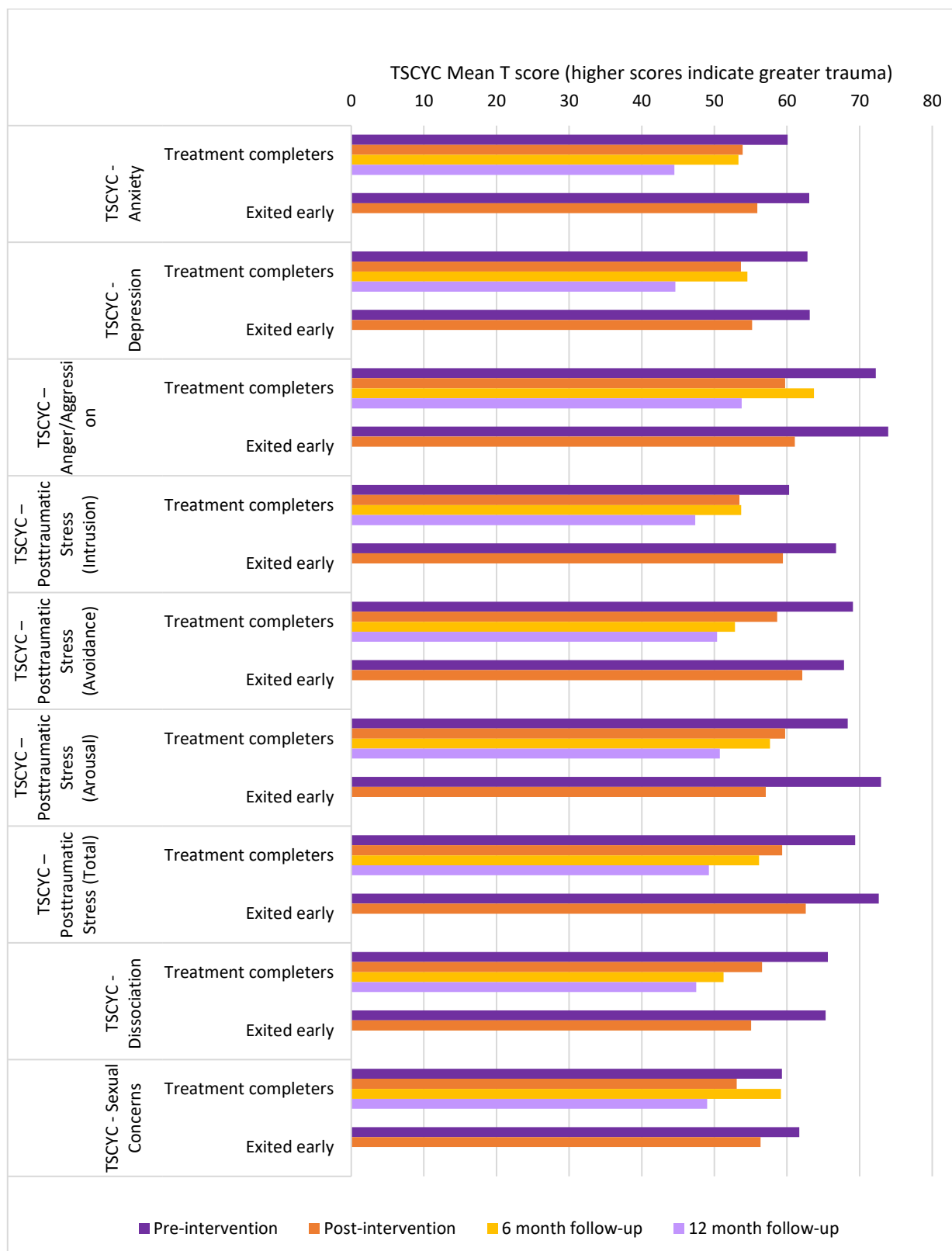
Figure 7. Pre-, post- and follow-up mean TSCYC T scores for treatment completers and those who exited early.
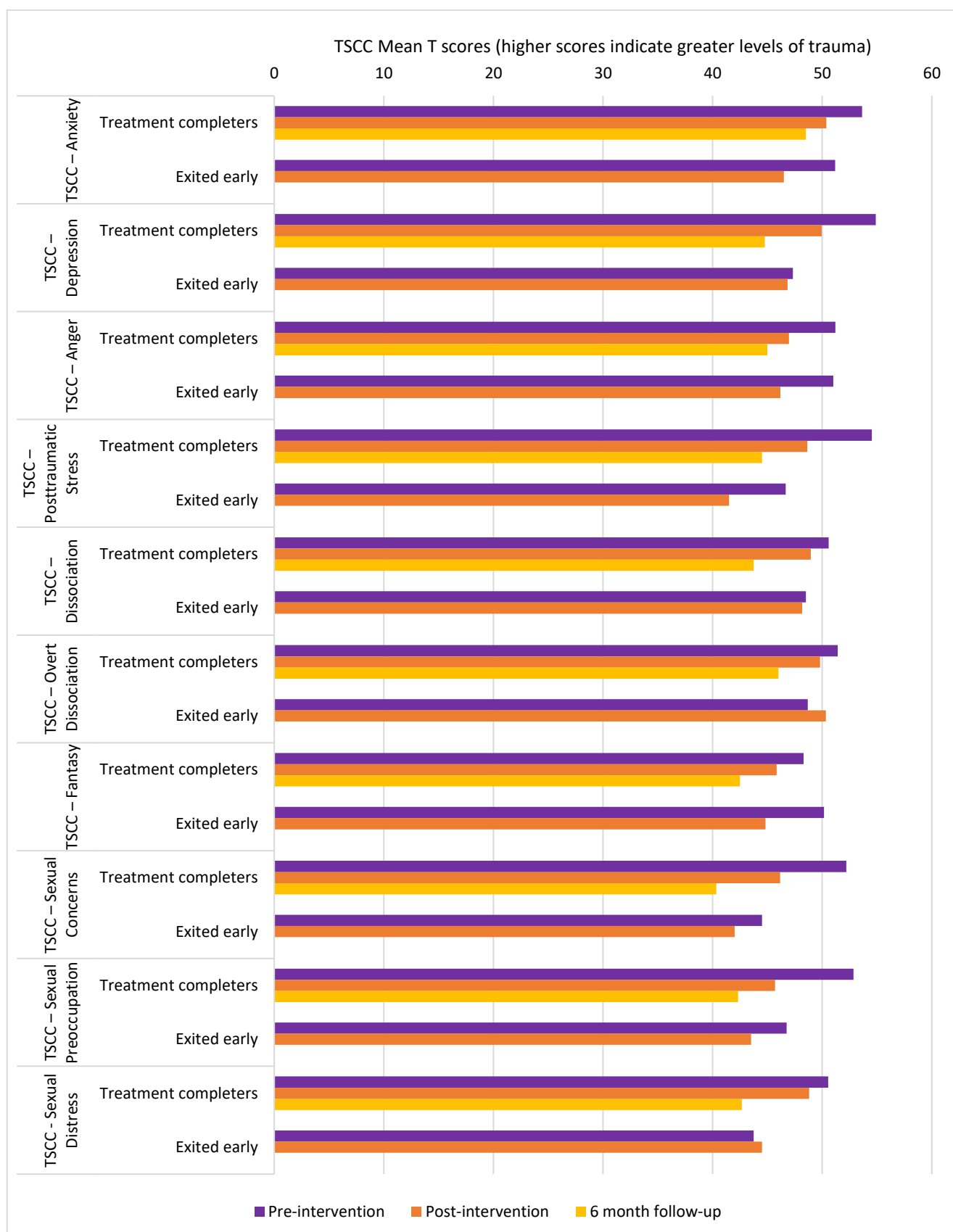
Figure 8. Pre-, post- and follow-up mean TSCC T scores for treatment completers and those who exited early.

Table 14. Between-subjects repeated measures ANCOVA for pre- and post-intervention subscale scores for the TSCYC[a]

	N	Pre-intervention M (SD)	Post-intervention/exit M (SD)	Homogeneity p at pre (p at post/exit)	Test of between-subjects effects[b]	η^2
TSCYC - Anxiety						
Treatment completers	70	60.10 (15.997)	53.90 (14.485)	.052 (.452)	$F(1,59) = 3.025$, $p=.087$	.049
Not completed	22	63.05 (11.499)	55.91 (12.212)			
TSCYC - Depression						
Treatment completers	70	62.81 (14.824)	53.64 (13.965)	.693 (.150)	$F(1,59) = 1.440$, $p=.235$	.024
Not completed	22	63.14 (15.422)	55.18 (11.363)			
TSCYC – Anger/Aggression						
Treatment completers	70	72.21 (19.522)	59.74 (15.935)	.738 (.786)	$F(1,59) = 1.882$, $p=.175$	.031
Not completed	22	73.95 (18.809)	61.09 (14.606)			
TSCYC – Posttraumatic Stress (Intrusion)						
Treatment completers	70	60.29 (18.790)	53.46 (13.298)	.567 (.120)	$F(1,59) = 4.689$, $p=.034*$	.074
Not completed	22	66.77 (17.345)	59.45 (14.398)			
TSCYC – Posttraumatic Stress (Avoidance)						
Treatment completers	70	69.09 (22.119)	58.66 (16.258)	.695 (.493)	$F(1,59) = 1.107$, $p=.297$	.018
Not completed	22	67.86 (23.586)	62.09 (16.012)			
TSCYC – Posttraumatic Stress (Arousal)						
Treatment completers	70	68.37 (16.456)	59.73 (14.237)	.534 (.376)	$F(1,59) = 2.540$, $p=.116$	.041
Not completed	22	72.95 (15.419)	57.09 (12.821)			
TSCYC – Posttraumatic Stress (Total)						
Treatment completers	70	69.40 (18.794)	59.34 (13.988)	.215 (.766)	$F(1,59) = 3.794$, $p=.056$	.060
Not completed	22	72.64 (15.924)	62.59 (12.443)			
TSCYC – Dissociation						
Treatment completers	70	65.64 (18.928)	56.57 (15.475)	.363 (.320)	$F(1,59) = 0. 046$, $p=.831$	.001
Not completed	22	65.32 (21.530)	55.05 (13.538)			

TSCYC – Sexual Concerns						
Treatment completers	70	59.30 (19.897)	53.09 (15.782)	. 315 (.706)	$F(1,59) = 0. 363$, $p=.549$	.006
Not completed	22	61.68 (21.766)	56.36 (15.117)			

*p<.05, **p<.01, ***p<.001, partial eta squared (η^2) values are considered to be small when around 0.01, medium around 0.06, and large around 0.13 (Cohen, 1988).
a For 3-12 year olds only
bCovariates = number of sessions attended, socioeconomic status of the family and for child age, gender and Aboriginality. Means in table are unadjusted.

Table 15. Between-subjects repeated measures ANCOVA for pre- and post-intervention subscale scores for the TSCC[a]

	N	Pre-intervention M (SD)	Post-intervention/exit M (SD)	Homogeneity p at pre (p at post/exit)	Test of between-subjects effects[b]	η^2
TSCC – Anxiety						
Treatment completers	27	53.63 (11.965)	50.37 (10.172)	.562 (.732)	$F(1,17) = 1.652$, $p=.216$	.089
Not completed	6	51.17 (13.556)	46.50 (8.361)			
TSCC – Depression						
Treatment completers	27	54.89 (12.690)	49.96 (10.237)	.543 (.256)	$F(1,17) = 2.063$, $p=.169$	.108
Not completed	6	47.33 (9.092)	46.83 (7.910)			
TSCC – Anger						
Treatment completers	27	51.19 (10.262)	46.96 (7.041)	.721 (.467)	$F(1,17) = 0.049$, $p=.827$	.003
Not completed	6	51.00 (8.626)	46.17 (5.811)			
TSCC – Posttraumatic Stress						
Treatment completers	27	54.52 (10.963)	48.63 (9.950)	.475 (.213)	$F(1,17) = 4.638$ $p=.046*$	.214
Not completed	6	46.67 (11.587)	41.50 (5.128)			
TSCC – Dissociation						
Treatment completers	27	50.59 (10.222)	48.96 (9.936)	.259 (.307)	$F(1,17) = 0.819$, $p=.378$	.046
Not completed	6	48.50 (9.731)	48.17 (9.936)			
TSCC – Overt Dissociation						
Treatment completers	27	51.41 (10.191)	49.81 (10.314)	.526 (.632)	$F(1,17) = 0.003$, $p=.954$	.000
Not completed	6	48.67 (8.383)	50.33 (10.577)			

TSCC – Fantasy						
Treatment completers	27	48.30 (9.148)	45.85 (7.695)	.413 (.722)	$F(1,17) = 0.014$, $p=.908$	.001
Not completed	6	50.17 (10.206)	44.83 (5.382)			
TSCC – Sexual Concerns						
Treatment completers	20	52.20 (19.105)	46.15 (12.696)	.666 (.539)	$F(1,14) = 0.028$, $p=.871$	.002
Not completed	4	44.50 (4.041)	42.00 (4.243)			
TSCC – Sexual Preoccupation						
Treatment completers	20	52.85 (19.511)	45.70 (11.017)	.484 (.862)	$F(1,14) = 0.183$, $p=.676$	.013
Not completed	4	46.75 (5.188)	43.50 (4.726)			
TSCC – Sexual Distress						
Treatment completers	20	50.55 (16.779)	48.80 (16.542)	.219 (.672)	$F(1,14) = 0.100$, $p=.756$	.007
Not completed	4	43.75 (0.500)	44.50 (3.317)			

*$p<.05$, **$p<.01$, ***$p<.001$, partial eta squared (η^2) values are considered to be small when around 0.01, medium around 0.06, and large around 0.13 (Cohen, 1988).
[a] For 8-16 year olds only
[b] Covariates = number of sessions attended, socioeconomic status of the family and for child age, gender and Aboriginality. Means in table are unadjusted.

Follow-up data for the TSCYC was available for 20 (6-month follow-up) and eight (12-month follow-up) CYPs who completed a program in LINKS. At 6 months, mean T scores on each of the TSCYC subscales remained below the cut-off suggestive of sub-clinical symptomatology (i.e. 65+), although the mean T Scores for some subscales had increased slightly from exit to 6 months follow-up, but all subscale scores had decreased again by the 12 month follow-up (see Figure 7),

Follow-up data for the TSCC was available for just four CYPs at the 6-month follow-up and only one CYP at the 12 month follow-up – therefore only 6 month follow-up data are reported here. At 6 months, mean T scores on each of the TSCC subscales remained below the cut-off suggestive of sub-clinical symptomatology (i.e. 60+), and mean T Scores for all subscales had decreased from exit to 6 months follow-up (see Figure 8).

Carer functioning

According to the scale developers, Personal Wellbeing Index (PWI) scores (CYP and adult) between 73.4 and 76.4 represent the average range of wellbeing within an Australian context and scores below 73.4 suggests poorer wellbeing and an increased risk of depression (Mead & Cummins, 2010). Given that mean pre-intervention scores across both treatment completers and non-completers were below this cut-off, the carers of CYP receiving LINKS do seem to be experiencing concerning levels of distress upon referral.

When examining pre- to post-intervention change in carer-completed PWI-A and PSS scores **for treatment completers only**, ANOVA found small and just significant pre- to post-intervention improvements on both the PWI-A, $F(1,85) = 5.802$, $p<.05$, $\eta^2=.064$, and the PSS, $F(1,98) = 4.628$, $p<.05$, $\eta^2=.045$. For those who exited early there was no change over time in PWI-A or PSS scores

(see Figure 9. Pre-, post- and follow-up mean PWI-A scores for those who completed a program and those who exited early. and Figure 10).

Repeated measures ANCOVA found a just significant ($p<.05$) difference in mean PWI-A scores **between the treatment completers and those exiting prior to treatment completion**, controlling for the number of sessions attended, $F(1,66) = 4.217$, $p<.05$, $\eta^2=.060$. This effect remained significant when additional covariates of socioeconomic status of the family and for child age, gender and Aboriginality were added, $F(1,62) = 4.207$, $p<.05$, $\eta^2=.064$ (see Table 16), although the number of sessions attended was the only covariate found to exert a significant influence on treatment effect.

Despite an apparent reduction in parent stress for carers of treatment completer but not for those exiting early (see Figure 10), repeated measures ANCOVA found no significant difference in mean PSS scores **between treatment completers and those exiting prior to treatment completion**. This was the case when controlling only for the number of sessions attended and when additional covariates of socioeconomic status of the family and for child age, gender and Aboriginality were added to the ANCOVA (see Table 16).
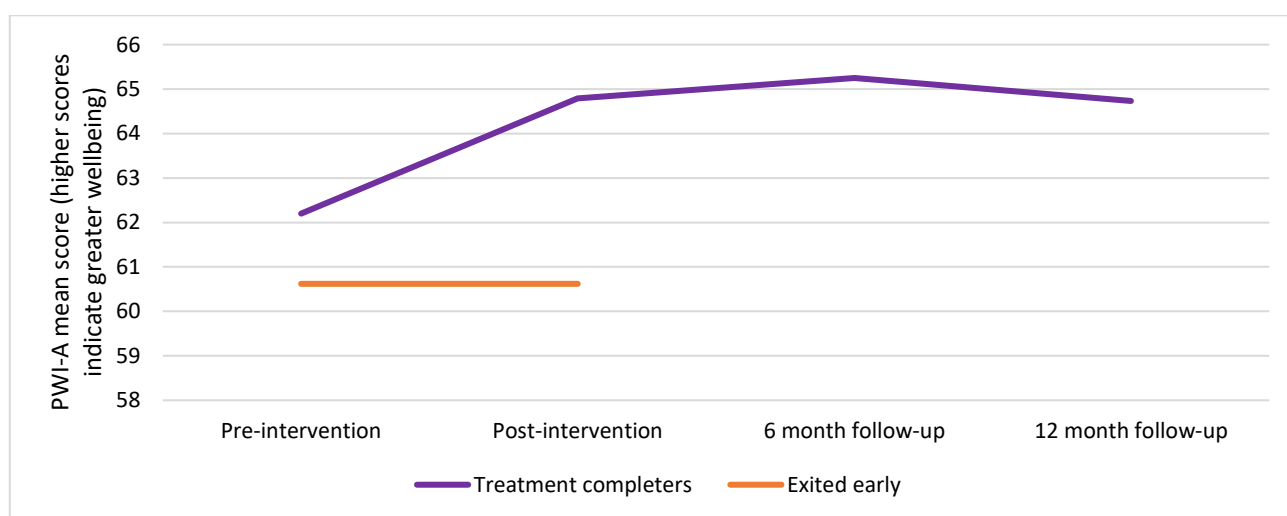

Figure 9. Pre-, post- and follow-up mean PWI-A scores for those who completed a program and those who exited early.
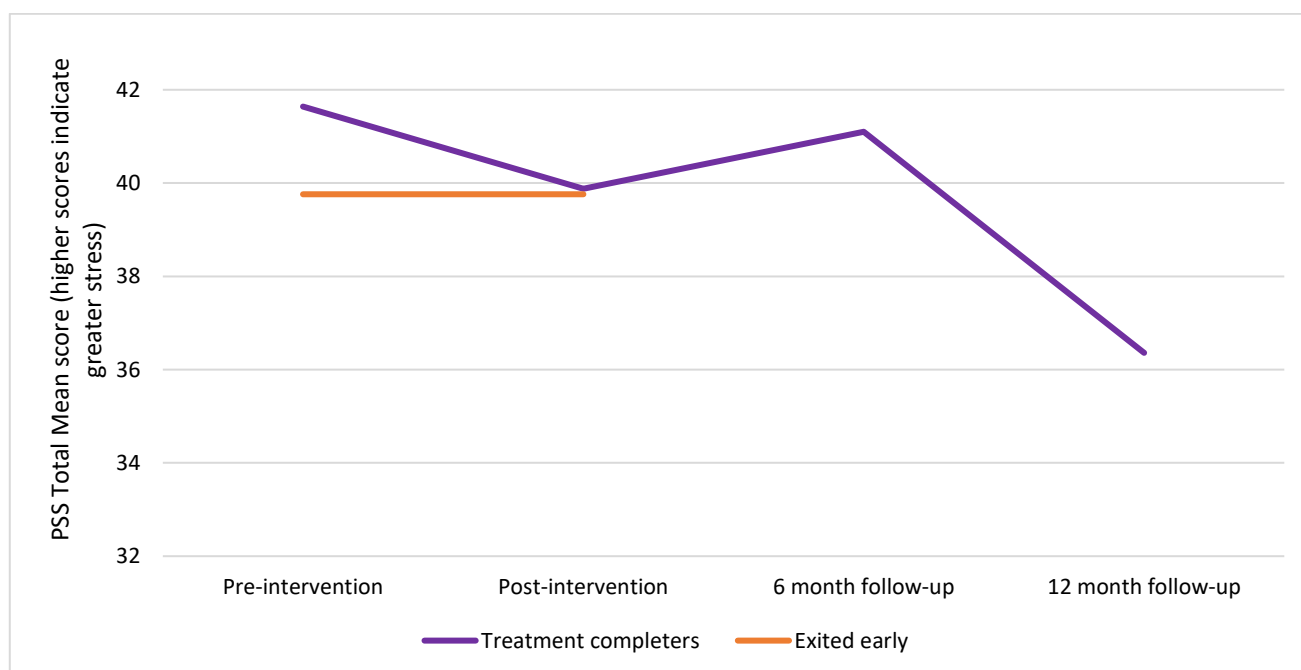
Figure 10. Pre-, post- and follow-up mean PSS scores for those who completed a program and those who exited early.

Table 16. Between-subjects repeated measures ANCOVA for pre- and post-intervention scores for the PWI-A and PSS

	N	Pre-intervention M (SD)	Post-intervention/exit M (SD)	Homogeneity p at pre (p at post/exit)	Test of between-subjects effects[a]	η^2
PWI-A						
Treatment completers	86	62.20 (10.881)	64.79 (9.974)	.298 (.895)	$F(1,62) = 4.207$, $p=.044$*	.064
Not completed	21	60.62 (11.792)	60.62 (11.985)			
PSS						
Treatment completers	99	41.64 (11.556)	39.88 (9.754)	.804 (.524)	$F(1,79) = 0.008$, $p=.931$	.000
Not completed	25	39.76 (11.166)	39.76 (11.118)			

*$p<.05$, **$p<.01$, ***$p<.001$, partial eta squared (η^2) values are considered to be small when around 0.01, medium around 0.06, and large around 0.13 (Cohen, 1988).
[a] Covariates = number of sessions attended, socioeconomic status of the family and for child age, gender and Aboriginality. Means in table are unadjusted.

Follow-up data for the carer PWI was available for 24 (6 month follow-up) and 11 (12 month follow-up) carers whose CYP in their care had completed a program in LINKS (see Figure 9. Pre-, post- and follow-up mean PWI-A scores for those who completed a program and those who exited early.). At both the 6 and 12 months follow-ups, mean carer PWI scores remained below the population average and within the concerning range (i.e. below 73.4), although the improvements in carer wellbeing observed for the cohort with intervention did appear to be maintained at 6 months, with only a small decline in wellbeing for the cohort at 12 months follow-up.

Follow-up data for the PSS was available for 29 (6 month follow-up) and 11 (12 month follow-up) CYPs who completed a program in LINKS (see Figure 10). At 6 months follow-up, mean PSS scores had increased by almost three points, but for those completing 12 month follow-up assessments, the average levels of parental stress were much lower than pre-intervention levels.

Self-reported Emergency Department use, school attendance and justice outcomes

Regarding CYP's emergency department presentations, the CYPs who had achieved an outcome (either completed a program or discontinued prior to treatment completion had an average of 0.24 presentations to the emergency department in the six months prior to the program starting (range = 0 to 6, SD = .677). CYPs had an average of 0.16 presentations to the emergency department during the time they were participating in a LINKS program (range = 0 to 2, SD = .424). For treatment completers the average number of presentations to the emergency department while participating in LINKS was 0.17 (range = 0 to 2, SD = .455). For those who discontinued from a program early there were fewer presentations to emergency during LINKS (M = .11, SD = .305, range = 0-1), although it should be kept in mind that this may reflect the shorter engagement period for many early exiters. Nonetheless, despite a decrease in the mean number of emergency department visits from before LINKS to during LINKS, there was no treatment effect found for emergency department visits in the repeated measures ANCOVA when also accounting for the effects of number of treatment sessions attended, IRSD, Aboriginality, child age at referral and gender.

Regarding CYP's school suspensions, the school-attending CYPs who had achieved an outcome (either completed a program or discontinued prior to treatment completion) had an average of 2.95 days of suspension from school in the six months prior to the program starting (range = 0 to 50, SD

= 7.718). CYPs had an average of 1.55 days of suspension from school in time they were participating in a LINKS program (range = 0 to 32, SD = 5.381). For treatment completers the average number of days of suspension from school while participating in LINKS was 1.18 (range = 0 to 32, *SD* = 4.925), and for those who discontinued from a program early the average number of days suspended while engaged with LINKS was 2.88 (*SD* = 6.723, range = 0-25). There was a significant treatment effect found for suspensions from school in the repeated measures ANCOVA which also accounted for the effects of number of treatment sessions attended, IRSD, Aboriginality, child age at referral and gender, $F(1,70) = 4.446$, $p<.05$, $\eta^2=.060$. Only child gender contributed significantly ($p<.05$) as a covariate to this treatment effect.

Regarding CYP's contact with the justice system, the CYPs who had achieved an outcome (either completed a program or discontinued prior to treatment completion) had an average of 0.02 court appearances in the six months prior to the program starting (range = 0 to 1, *SD* = 0.122). CYPs had an average of 0.05 court appearances in time they were participating in a LINKS program (range = 0 to 3, *SD* = 0.313). None of the treatment completers had any court appearances before participating in LINKS, while during treatment, two had one court appearance and one had three court appearances. For those who discontinued early, three CYPs had each had one court appearances in the six months prior to referral to LINKS, while two had each had a single court appearance during their time engaged with LINKS. A significant treatment effect for court appearances was found in the repeated measures ANCOVA which also accounted for the effects of number of LINKS sessions attended, IRSD, Aboriginality, child age at referral and gender, $F(1,86) = 8.440$, $p<.01$, $\eta^2=.089$, with child gender being the only covariate which contributed significantly ($p<.05$) to this treatment effect.

None of the CYPs who had achieved an outcome (either completed a program or discontinued prior to treatment completion) had spent any days in police custody in the six months prior to the program starting, and only one CYP who discontinued a LINKS program early spent time (half a day) in custody during the LINKS program. Between-subjects repeated measures ANCOVA could not be computed for this analysis.

During the 6 month follow-up period, four of the 28 CYPs who completed a program in LINKS who were contacted for follow-up assessment had visited emergency at the hospital during that period, five had been suspended from school (for 3 to 16 days), but none had appeared in court or spent time in custody. Over the 12 month follow-up one additional CYP (of the 12 interviewed at the 12 month follow-up) had visited the emergency department, four additional children had been suspended (for period between 12 and 40 days), but again, none had appeared in court or spent time in custody.

Interviews with families

While conclusions about outcomes associated with the LINKS programs were drawn largely from the administrative data sources (DCJ and service provider records), we also asked questions about perceived outcomes for CYP and others in the family when we interviewed carers who were nearing treatment completion. Notwithstanding the potential for participant bias due to self-selection into the interviews, information from this qualitative data source is summarised below.

Carers' reported outcomes for CYP

Improved behaviour and wellbeing

All 27 of the interviewed carers reported seeing a marked reduction in the trauma symptoms exhibited by their children, including improved behaviours and psychological wellbeing, following the delivery of treatments from LINKS therapists. Carers reported that many of the difficult or concerning behaviours of the CYP in their care were occurring far less frequently. Carers described the CYP in their care as being more settled and relaxed, happier and better behaved in comparison to before they started treatment, for example:

"*She can handle her feelings a bit better. She's not as angry.*"

"*He had no sort of self-regulation at all. It was just, I'm really angry and I don't know why. Now he says, I'm frustrated, or I'm agitated, or I'm annoyed because blah blah blah. So, he's been really good with that. So, she [the LINKS counsellor] sort of made him stop and think.*"

"*… from the LINKS program [child's name removed]'s learnt how to calm down, how if she is angry about anything she knows how to deal with it. She couldn't deal with it before. Her only way when she first started there of dealing with, and this is why we asked for help, was to stand toe-to-toe with me and argue and she would never walk away, she would just stand there and argue and argue and argue and argue and I'd just, no. In the end it just was too much and I couldn't take it but now [child's name removed] will say, "Mum, I'm not going to argue. We've had a misunderstanding, I'm going to go away, I'm going to sort it all out in my head and then I'll come back," and we can sit down now and have a conversation about what happened and we can get an outcome from it so it's better than having [child's name removed] rage and go really crazy whereas now she calmly goes away, thinks about it, talks it out in her head and comes back.*"

Some carers went on to talk about the positive impacts the improved behaviour and wellbeing of children in their care had on them as carers and on the rest of the family. One carer cited improved sleep and thus less exhaustion, another explained that the rest of the family was learning how to communicate better and be more open about their emotions, and another cited their families were feeling more settled and relaxed as a result of the changes in the child in their care who received LINKS.

Improved capacity to communicate

Carers reported that LINKS allowed CYP in their care to overcome barriers to communicating with others, which they were experiencing as a result of their trauma. Carers saw the capacity of their children to communicate improve dramatically after working with a LINKS therapist. Carers highlighted that this resulted in improved communication with their children and noticed that the CYPs were more willing to open up to them or their therapist about their trauma and feelings as a result.

The following examples demonstrate how communication has improved according to carers, but also the diverse circumstances and needs of children and their families.

"*They give you the right advice and it's actually helped her living in our household too as well, kind of thing, to be able to not be worried and get things out and talk about things that are bothering [child's name removed].*"

"*So [counsellor] been very good in being able to break that down into appropriate language for [child's name removed] and for me as well, dummy it down for me a bit as well, when it comes to understanding how [child's name removed]'s thinking and feeling. So, yes, we've had previous experience, but we've really been able to – this has worked for a lot of reasons with [counsellor].*"

Improved capacity to manage and cope with trauma

Carers stressed that LINKS had assisted their children to better deal with their trauma. In addressing their traumatic experiences in sessions with LINKS staff, carers believed that their children were able to gain a better understanding of their own trauma which in turn reduced the symptoms associated with it.

Moreover, LINKS staff were credited with equipping CYP with strategies to manage and regulate their feelings and by doing so, their behaviours and wellbeing were positively impacted and their capacity to cope with the trauma they have experienced increased.

Making CYP feel safe

The behavioural improvements carers were witnessing were further attributed to the way in which LINKS staff had formed trusting relationships with the CYP they were treating and had fostered greater trust between carers and the CYP in their care. Carers believed that this had the effect of making CYP feel safer in their placements.

Referrals to medical treatments and support

Another significant outcome of LINKS was that CYP and families gained facilitated and supported access to psychiatrists, occupational therapists, and speech therapists for often undiagnosed or untreated psychological or cognitive conditions and disorders. Carers saw or were hoping to see improvements to the wellbeing of their children following supported psychiatric treatment. Carers were impressed with the assistance of LINKS staff in ensuring their children were able to gain access to the ongoing support they needed in order to improve their long term wellbeing and many had already seen significant improvements. Though one carer reported seeing a degradation in their child's motor skills as a result of switching them from one occupational therapist to a LINKS occupational therapist, most carers saw improvements based on access to these ancillary therapies.

Carers' reported outcomes for carers and families

Improved capacity to manage and understand trauma affected CYP

While we do not always know to what extent each carer was involved in the treatment program offered to their CYP, carers reported they had learned many important skills and strategies that assisted them to support and care for their trauma affected children. Carers reported having a deeper understanding of how trauma impacts CYP and manifests itself in certain behaviours after engaging with LINKS. In gaining a deeper understanding of trauma related issues, carers felt that their ability to understand their children improved. Carers believed that learning about trauma and being equipped with strategies to manage trauma symptoms had flow on effects for the overall wellbeing of their children.

> "*I mean, the girls still have their moments, but my biggest problem is they fight a lot. And they're yelling at each other and I start yelling, and just – I would say the emotion coaching and stuff has been good. Yeah. Everything in general has improved.*"

> "*I was a person who thought I could do it all myself. When I took on the children I thought, well, they're my children and I should be able to deal with them but not understanding the deep-seated trauma that [child's name removed] had been through because when I got them I didn't know really the deep seated part of it, the part that was really in-built in [child's name removed] from birth actually but it all came out while she was talking to this worker and through that we could handle more of [child's name removed]'s problems. But she's perfectly okay with saying now, well, you're my mum, I only need my mum, I don't need anybody else so [child's name removed] and I now have a very, very strong relationship.*"

Increased stability in placements

Carers indicated that participating in LINKS increased stability in their homes and placements and gave them more hope in the future of their family. Carers expressed this in three different ways. Firstly, and importantly, some carers asserted that their current placements would have likely fallen apart had they not received the support they did from LINKS.

Secondly, some carers suggested that without the support they received from LINKS, their family and home lives would be a lot more challenging and unstable. Carers believed that without LINKS, it would have been harder to continue as a carer for their children, and while they wouldn't have given up, they would have been less hopeful about the future of their family.

Thirdly, carers reflected about their previous failed placements and considered whether LINKS could have altered or made a difference to that outcome. Some carers indicated that if they had received support from LINKS, they might have been better placed to continue as carers of CYP from their previous failed placements.

Goal setting and achieving

Carers were asked to rate how much input they and their CYP had in the goal setting processes, and the degree to which they believed the goals were achieved. In relation to how much input carers and CYP had in goal setting, 0 indicated 'no control' and 5 indicated 'complete control'. In relation to achieving goals, 0 indicated 'did not achieve my goals at all' and 5 indicated 'completely achieved my goals'.

Overall, carers reported high levels of input into goal setting and high levels of goal achievement, and there was an improvement in reported levels of input into goal setting between the 2018 and 2019 interviews. Among the ten carers interviewed in 2018 the average and most common rating given in response to how much input carers had in setting goals was 4. Among the 17 carers interviewed in 2019, however, the average had shifted slightly upwards to 4.2. Among 2018 interviewees, the average rating given in response to how much input CYP had in setting goals was 3.5 and among 2019 interviewees the average was 4.2. With respect to goal achievement there was a slight decrease between 2018 and 2019 interviewees: the average among 2018 interviewees was 4.2, but was 3.9 among 2019 interviewees. These are all very small sample sizes, however, so any differences should be interpreted cautiously. Most important, however, are the generally high ratings respondents gave to their and their children's' ability to input into their LINKS experience and achieve their goals as a result of LINKS.

Some carers discussed the level of input they had towards goal setting in more depth. One carer did not have knowledge of what the specific goals were but understood why they were undergoing LINKS treatments and that they trusted the LINKS team. Carers commonly reported high levels of success in achieving program goals and gave specific examples. Some carers commented that long term results were not necessarily measurable as yet because of the short length of time they had been engaged in the service but they nonetheless believed they would see positive results in the long-term based on what they have experienced in the short-term.

4.4. Economic evaluation

In health economics, economic evaluation is a technique in which a health program is compared to an alternative in terms of both costs and benefits. Cost-effectiveness or cost-consequences analysis is often used in economic evaluation of a health intervention whereby costs and outcomes ("effectiveness" or benefits) of a specific health intervention are compared to their alternative (e.g. business as usual). The economic evaluation of the LINKS service was conducted as a cost-effectiveness analysis, comparing the incremental costs and the incremental benefits of the LINKS service to current practice (i.e. in the absence of the LINKS service), from the Government/service provider perspective. Incremental benefits of the LINKS program were estimated using outcome data collected for LINKS clients and the matched comparison sample over the period from October 2017 to end 2019, and data were available for both costs and outcomes (see Section 4.3. Outcome evaluation above for outcome analysis). Costs were measured using the aggregated financial data for LINKS service providers and are valued in 2019 Australian dollars. The economic evaluation methods were detailed in Section 3.3. Analysis and review of service provider records above.

As noted in the discussion of outcomes from LINKS above (Section 4.3. Outcome evaluation), of the 208 CYPs who were accepted into LINKS between October 2017 and end December 2019 and who had exited the service at the end of December 2019, 108 (52%) had completed a program within LINKS. Service costs were estimated for families who participated in the LINKS program (i.e. were referred and these referrals were accepted by the service as eligible and started a LINKS

program) regardless of program completion, to reflect the time and resources spent on engaging with all LINKS participants.

Estimated economic costs of LINKS delivery to system/service provider

The total estimated economic costs of LINKS in 2017-2019 are presented in Table 17. These estimates are primarily derived from records and information obtained from the service provider and may be different to budgeted expenses. The average overall economic cost estimate of the LINKS service to government/service provider was A$27,303 per CYP over the 26 months period or A$12,410 per CYP per annum. This comprised the cost of staffing (average of A$21,388 per CYP), the cost of professional development and staff training (average of A$830 per CYP), program resources (average of A$394 per CYP), travel related expenses (average of A$141 per CYP), and overhead costs (average of A$4,551 per CYP). Given the intensity of staff contact time with CYPs during the program, it is unsurprising to see staffing costs were the biggest spending in the overall cost of LINKS delivery. It is noted that the estimated economic costs presented in Table 17 reflect the estimated costs of resources associated with delivery of the LINKS service. As indicated above, these economic costs may not be necessarily the same as the budgeted expenses for LINKS. For example, the staffing costs in Table 17 are derived from the actual staffing costs included in service provider records and reports of additional staff time spent over and above the budgeted costs (estimated from responses received during interview with LINK service provider managers) in order to achieve the LINKS targeted outcomes. The overheads costs (estimated by service provider to be approximately 20% of total program cost) were also included to reflect the operating expenses to run the service/business, e.g. office building, computers and telephones. It is also noted that the economic costs are higher than the budgeted expenses, which aligns with the information obtained from the service provider records and interviews.

In addition, as mentioned in Methods section above (page 15), we aimed to estimate the resource use that would be required to roll out the LINKS service in the future when the service is assumed to be in a 'steady state' with its efficacy potential and available trained personnel and infrastructure. Therefore, the estimated economic costs presented in Table 17 below reflect the specific economic costs of LINKS delivery within the 26 month period given the funding for service delivery was already available; administrative expenses from TFM or DCJ related to securing the LINKS funding, selecting service providers and so on were not included.

Table 17. Total estimated economic cost (2019 A$) of the LINKS service across two sites in 2017-2019

Cost items	Annual overall economic cost estimate			Total LINKS delivery economic cost estimate	
	2017/18[a]	2018/19[b]	2019[c]	Overall cost[d]	Cost per child
Cost to service provider (n=208)					
Staffing costs	$ 851,446	$ 2,423,490	$ 1,160,176	$ 4,448,734	$ 21,388
Professional development	$ 6,144	$ 137,919	$ 28,417	$ 172,579	$ 830
Program resources	$ 3,729	$ 75,880	$ 2,321	$ 81,989	$ 394
Travel Costs	$ 8,589	$ 13,632	$ 6,875	$ 29,233	$ 141
Overheads	$ 173,982	$ 530,184	$ 299,447	$ 1,006,397	$ 4,838
Total cost to service provider	**$ 1,043,889**	**$ 3,181,106**	**$ 1,497,236**	**$ 5,738,933**	**$ 27,591**
Cost to families (n=51)					
Cost of LINKS participation	n/a	$ 1,400		$ 1,400	$ 28

Costs of additional service use	n/a	$	450		$	450	$	9
Total cost to families		$	**1,850**		$	**1,850**	$	**37**

[a]Time period from October 2017 to end June 2018.
[b]Time period from 1st July 2018 to end June 2019.
[c]Time period from 1st July 2019 to end December 2019.
[d]Costs of service delivery in the 2017-2018 period were inflated to A$2019 using a CPI rate of 1.6% (refer to Methods section, page 15).
Note: Costs were estimated in 2019 Australian dollars for the period from October 2017 (when LINKS was first implemented) to end December 2019. The number of children referred and accepted to participate in the LINKS and who had exited the service by the end of December 2019 was 208. Costs were rounded to the nearest dollar.

The average estimated economic costs per CYP presented in Table 17 were based on the aggregated overall funding data and the total number of LINKS CYPs referred, accepted and exited from LINKS within the period specified above. Therefore, cost data available for this evaluation were not sufficiently detailed to allow for estimating robust individual level comparative figures. The short-term cost-effectiveness of the LINKS service is presented in the following section. Longer term cost-benefits of the LINKS service are out of the scope of this evaluation.

Costs to families

Most families (82%) reported there were no additional costs to them in attending LINKS. A small proportion of families (18%) reported additional costs of an average of $28 to families during their participation in LINKS (also presented in Table 17).

Regarding costs of other services accessed by families during their participation in LINKS, 24% of families reported accessing services but did not have to pay anything. Only one family reported a cost of $450 to access services.

Short-term cost-effectiveness of the LINKS service compared to business as usual (e.g. without the LINKS service)

Table 18 presents the cost-consequences of LINKS. As we did not have secondary outcome data from the matched comparison group, we only present below information associated with the primary outcomes of interest to LINKS in the cost-consequences analysis in Table 18. As noted in Section 4.3 above, for these primary outcomes we compared variation in the number of placement changes and ROSH report frequency across two time periods - (1) pre October 2017 and (2) October 2017 to December 2019, where the groups compared were the CYPs who had completed treatment in LINKS and CYPs matched to LINKS-referred CYPs using propensity score matching (see findings in Table 9 and Table 10 earlier).

Table 18. Cost-consequences analysis of the LINKS service

Outcomes	LINKS	Matched comparison group[3]	Mean difference in outcomes between LINKS and matched comparison group
Average costs of LINKS to service provider ($)[1]	$12,410[4]	$0	**$12,410**
Primary outcomes[2]			
Placement changes[5]	1.4	3.8	**-2.40**

Report of risk of significant harm (ROSH) made to child protective services	2.6	6.3	**-3.84**

Significant differences in bold.

[1] Average estimated economic cost of LINKS to service provider over the 2 years and 2 month period = cost per CYP over 2.2-year period / 2.2 = $27,303/2.2 = $12,410; costs were estimated in 2019 Australian dollars, average for the period 1st October 2017 to 31st December 2019.

[2] Primary program outcome: placement changes and ROSH made to Child Protection Helpline, measured during 1st October 2017 to 31st December 2019. Outcomes were compared between LINKS CYPs program completers and matched comparison group.

[3] Also referred to as 'Business as usual': CYPs in the matched comparison group were assumed to not receive any services including a LINKS program.

[4] Refer to Table 17.

[5] Refer to Table 9, which shows the number of placement changes during the period from 1st October 2017 to 31st December 2019 was a mean of 1.4 for LINKS CYPs who completed the program and 3.8 for matched comparison group CYPs.

[6] Refer to Table 10, which shows the number of ROSH reports during the period from 1st October 2017 to 31st December 2019 was a mean of 2.6 for LINKS CYPs who completed the program and 6.3 for matched comparison group CYPs.

In cost-effectiveness analysis, the incremental cost-effectiveness ratio (ICER) is often used to assess the cost-effectiveness of the chosen program and its comparator. The ICER is calculated as the incremental costs (in dollars) dividing the incremental benefits (in their natural units) (Drummond et al., 2010). The ICER is often calculated for the primary outcomes which show a significant difference between intervention and control. For example, using the incremental costs and benefits in Table 18, the ICER of the LINKS service is estimated as $11,376 ($27,303/2.4) per an increase of placement stability. In other words, it costs an additional $11,376 per CYP for an increase of placement stability. It is noted that the estimated ICER was calculated based on the primary outcomes (e.g. placement stability) measured from the cohort of CYP who accepted the LINKS and exited the program by end of 2019. These CYP did not necessarily complete the LINKS treatment as intended. When we considered the treatment effects specifically for the cohort of LINKS completers, the effects were stronger (as seen in Section 4.3 above). Using outcome comparison for the treatment completion cohort, the ICERs were $9,447 for placement stability. In other words, it costs an additional $9,447 for an improvement in placement stability.

In economic evaluation, program benefit presented as a common unit, that is, quality-adjusted-life-year (QALY). QALY is often required to allow comparison across multiple programs. For QALY to be calculated, a multi-attribute utility (MAU) instrument of quality of life is needed. As a MAU instrument to capture CYP's quality of life was not available in this evaluation, judgment on the cost-effectiveness of the LINKS service cannot be made against a common cost-effectiveness threshold (e.g. $50,000 per QALY). Instead, the value for money of the LINKS service needs to be judged in terms of whether the additional investment by Government is worth the benefits of the LINKS service (e.g. whether an increase of placement stability outweigh the additional costs of LINKS per CYP).

Out-of-home care and its costs in Australia

A descriptive cost study reported the average annual payment to foster carer payment/ subsidies across Australia and New Zealand in 2001 was $8,361 (roughly around $10,591 in 2019 dollars) (Bray & Boyd, 2001). McHugh (2002) found that the costs of caring for children in OOHC is on average 52% higher than the costs associated with caring for children not in OOHC. This was proposed to be mainly due to the range of specialist needs that children in OOHC may have such as specialist medical, educational, developmental and psychological needs (Bray & Boyd, 2001; McHugh, 2002).

Furthermore, the FACSIAR Economics team has estimated that the average weighted cost for a placement breakdown was $14,682 per CYP or $6,080 for each ROSH report made to Child Protection Helpline (Department of Communities and Justice, 2019). These costs represent the total future cost of casework and maintaining the child for the duration of stay in OOHC as well

as the legal costs borne by the Department of Communities and Justice. Costs borne by other agencies such as future health costs and income support were not included. Costs of psychological issues and/or emotional behavioural difficulties associated with placement breakdown were also not included. Therefore, the societal costs of an avoided placement breakdown or a ROSH report made to protective services could be much higher than these estimates. Based on these figures, it can be seen that the benefits achieved by LINKS could potentially outweigh the additional costs invested into the program as presented above (e.g. ICER=$3,305 per an improvement in placement stability) from either a Government or societal perspective in the long-run (Table 19).

Future economic evaluation should collect data on the economic impact of placement instability on CYPs and their caregivers including impact on CYPs and their caregivers' quality of life to enable a robust longer-term cost-effectiveness analysis of the LINKS program.

Table 19. The potential economic cost-saving estimate of LINKS

	Cost of a placement stability achieved by LINKS[a]	Average weighted saving of a placement breakdown[b]	Potential cost-saving estimate for LINKS[c]
OOHC placement stability	$11,376	$14,682	$3,305

[a] Economic cost estimate invested into the LINKS service to achieve a placement stability (refer to Table 17).
[b] Potential cost of a OOHC placement breakdown estimated by the FACSIAR economic team in 2019.
[c] Potential cost-saving estimate for LINKS (in A$2019).

5. Discussion

5.1 Summary of findings

Completeness and quality of data

Data accuracy and completeness ratings about data for CYPs who had an outcome from LINKS (either treatment completion or early exit) were generally high. Ignoring missing post-intervention data for early exiters, data completeness ranged from 88% to 100%. There was minimal missing data in the service provider datafile (i.e. for outcome measures and incidents of juvenile justice contacts, etc), and ratings of data accuracy, recency, non-obsoleteness and being up-to-date ranged from 73% to 100% indicating adequate data collection protocols were implemented within an acceptable period.

Process evaluation

Functioning of referral system

There were clear indicators that referral pathways had become more streamlined over the duration of implementation of LINKS. Interviews with carers in 2019 reflected a sense that referrals were more 'automatic' compared to during early implementation of LINKS. Therefore, some of the concerns raised by carers of CYPs in the earliest stages of the evaluation regarding a lack of clarity around making referrals to LINKS (as reported in Report 1[12]) appear to have reduced over time. It seems also that caseworkers are now more likely to make referrals to LINKS themselves, often times prior to the carer becoming involved with the CYP. This suggests improved awareness of the existence of LINKS and better understanding about the processes associated with referral into the service. The onus was not on the carer to refer, which has seemed to help alleviate some of the earlier concerns identified in Report 1 that carers felt unsure about the referral options and processes, and that chaos in the home at this time impacted their capacity to make, accept or facilitate referrals to LINKS. Staff noted also that changes to the branding of LINKS (specifically, which have increased the perception of its independence from DCJ), and increased networking and promotion about LINKS has led to increased referrals and improvements in the suitability of referrals. Staff also felt that staffing additions in 2019 had improved referral processes (appropriateness of referrals, speed of processing referrals) by freeing up staff to manage referrals and engage with referring agencies.

Whereas in the earliest stages of the evaluation carers noted that their caseworker was often unable to provide them with much information about LINKS (such as information about the likely duration of treatment and expectations about carer involvement), in 2019 the overwhelming majority of families reported positive experiences in referral to the LINKS service. Carers provided positive feedback about ease in accessing the service, and observed that staff quickly established good rapport with CYPs and families. It was felt that providing more information to carers at referral may positively influence rates of appropriate referrals, reduce the number of families declining a service post referral, increase carer engagement with service delivery, and result in improved maintenance of treatment effects. Staff interviews suggested that carer engagement improved over the course of the evaluation, so evidence of the effectiveness of this strategy (providing more information to carers at referral) may indeed exist.

Nevertheless, the continuing high rates of exit prior to treatment completion (44% of those allocated to a program; was 45% in mid 2019 and 36% in 2018) may indicate ongoing issues with the appropriateness of referrals made into LINKS. While early discontinuation from EBPs is commonly reported in the peer-reviewed literature (e.g. Skale, Perez & Williams, 2020), it is nonetheless possible that many of these LINKS CYPs who discontinued prior to completing treatment did make progress toward treatment goals (this was the case for 40% of those who

---

[12] Parenting Research Centre, CIRCA and Deakin Health Economics (November 2018)

discontinued prior to treatment completion), the observation that 60% of those who discontinued early had made either no progress towards program goals, had shown deterioration away from these goals or had no information about progress suggests retention of CYPs may be an issue for at least 12% of those accepted into LINKS. While an early discontinuation rate of well above 12% is not unusual for voluntary programs involving highly vulnerable populations, there may be some explanations (and therefore solutions) that are relatively straightforward and yield improvements in relation to service efficiency. For example, referral criteria may need further review, or additional efforts undertaken to clarify and promote eligibly criteria to potential referrers. In support of this, for many CYP – especially those over 12 years of age – trauma symptoms on entry into LINKS continue to remain below the clinically elevated range. Therefore the question remains: are the right children – those intended to benefit from the four programs, and those demonstrated in previous research to benefit from the programs – actually being referred into LINKS? On the other hand, ultimately only 7% of those referred were deemed not to have met inclusion criteria or declined the service – this is an improvement on previous rates of ineligibility or non-acceptance, which were 18% in earlier reports from this evaluation. Thus it seems there have been improvements in the targeting of CYPs most likely to benefit from LINKS.

A recommendation for consideration offered in 2018 was to improve documentation requesting referral information about the family. Staff interviews in 2019 suggested such improvements had been made, with additional background information about CYPs allowing stronger and more comprehensive formulations by LINKS staff upon initial assessment. Successful strategies noted by staff were having discussions with referring agencies and with carers as a way of clarifying expectations and identifying possible concerns or barriers to engagement early.

There was some ongoing concern among staff in 2018 and again in 2019 that referral to LINKS did not always occur early enough in a new placement, prior to 'crises' occurring. Staff also noted challenges to LINKS delivery when a CYP's placement was unstable, with impacts on the time required to deliver a program and the ease of implementation. Yet one of the key eligibility criteria for LINKS is placement instability (two or more placements in the last six months). Given this issue of appropriateness of LINKS for those in highly unstable placements continues to be raised by evaluation informants, it is imperative that attention is given to the suitability of referral/eligibility criteria. Alternatively, it may be that additional initial family supports are required prior to starting a LINKS program, to aid identification of families most likely to benefit from the program, that is, those with relatively stable placements, but with evidence of emotional or behavioural disturbance at the time of referral. It is important to note, however, that this would change the intended client group from the original intentions of the LINKS model.

Nevertheless, other data provide evidence that referrals to LINKS are meeting expectations about who would benefit from the trauma healing service. For instance, the vast majority of referrals were for children in OOHC, close to half of all referrals were for Aboriginal CYPs, and many had pre-intervention SDQ, TSCYC and HoNOSCA scores in excess of clinical cut-offs. However, many did not have excessive trauma symptoms as indicated by the TSCC and TSCYC, suggesting the need for further communication about eligibility requirements to potential referrers.

Most referrals (66%; was 72% in 2018 and 70% in 2019 70%) continue to be from DCJ. As noted in previous reports for this evaluation, the service provider database continues to provide limited information about who is making non-DCJ referrals[13]. Such information may provide useful information to help understand whether there are links between referrer type and program uptake or early termination.

Another issue in relation to referrals that emerged in interviews with carers in 2018 and 2019 was the accessibility of the service, specifically with regards to location and hours of operation. Rural

---

[13] According to TFM (personal communication December 2019), there has previously been an attempt made to make changes to the database but logistical issues related to the size of the file has prevented this change occurring to date.

families faced some unique challenges in accessing LINKS. The logistical challenges faced by families in geographically more remote locations paired with the demands associated with juggling work and family, and the responsibilities of other children, meant that travelling longer distances to attend appointments at LINKS sites posed challenges for some families. While it may be feasible to explore the viability of different modes of service delivery (e.g. tele-health, online program support), attention to the evidence-base of such options is advised, with ongoing monitoring of both dosage and treatment effect necessary.

Differences in treatment type

Across 2018 and 2019 interviews, staff reported high levels of satisfaction with the suite of programs offered through LINKS, noting that the service and programs:

- are filling a gap in service for CYP in OOHC exposed to trauma

- are valued by carers

- are leading to positive outcomes for CYPs

- can often be delivered in culturally appropriate ways

- are often flexible in the way they can be delivered and thus can be tailored to families' needs and preferences

- are ready for scale up to other locations.

Acknowledging that the carers (n=27) interviewed for this report may be those who have more favourable views about LINKS, carers also cited high levels of satisfaction with LINKS, noting that it:

- meets and, in most cases, exceeds expectations

- meets the unique and specific needs of trauma affected CYP and their families

- is perceived by carers as much more effective than other previously accessed support services

- develops and maintains strong and positive relationships between LINKS staff and CYP and their families.

TF-CBT was again the most commonly used program (54% of cases), perhaps reflecting the higher number of staff who had been trained in TF-CBT (10 out of the 13 staff for whom this training data was available) compared to PCIT (3 trained) and EMDR (6 trained). TIK and TIK(T) were commonly used (36% of cases, and 12 out of 13 staff trained), often in combination with TF-CBT and EMDR. Although used less frequently than other programs in the LINKS suite, EMDR was being increasingly used (18% at as end December 2019, compared to 16% of clients at end June 2019, and just 8% in 2018). Feedback from a LINKS Manager suggested this increase was due to having more staff now trained to deliver EMDR (personal communication, March 2019). Thus, ensuring staff are trained to deliver a broader range of programs will help to ensure the needs of CYPs are being met with the right treatment program(s).

PCIT was used in 17% of cases. However, some staff in 2018 reflected that PCIT does not include enough focus on trauma and that due to the resources and delivery setting required could be expensive to deliver. Clinicians often reported that they wanted to (and in some cases did) adapt PCIT using their clinical judgement as a guide.

The length allowed for an episode of LINKS treatment was noted by staff as problematic in some cases – 6 months was viewed as too short for CYPs displaying high risk behaviour or a lack of stability. PCIT in particular could be challenging to deliver within 6 months.

Implementation with Aboriginal families

Almost half (47%) of CYP referred to LINKS were Aboriginal, in line with expectations for the service.

Staff have built relationships with local services and community representatives (e.g. Aboriginal Elders) to enhance the acceptability and cultural suitability of LINKS. Staff described using a range of strategies specifically with Aboriginal CYPs, families and communities to communicate about the service, including having documentation available in language appropriate to the CYPs and carers. The presence of an Aboriginal psychologist in the LINKS team was viewed as a key strength of the service.

Staff discussed the need to modify delivery of LINKS for Aboriginal families. Broadly these modifications were about allowing more time to foster the client-therapist relationship, using appropriate normative information during assessment and making adjustments to some treatment materials to better fit the cultural needs of Aboriginal CYP and families. Many staff across 2018 and 2019 also discussed the limitation of the length of service allowed for each CYP, noting that more time was typically needed when the CYP was Aboriginal, primarily to establish trust and rapport.

While staff noted that cultural competency training had been attended by LINKS staff, the exact nature and extent of cultural competencies required and obtained by staff is not well understood and is a possible area of future evaluation.

An area of concern by staff in relation to suitability of LINKS for Aboriginal CYPs was co-location of the service with DCJ. Although, several staff noted that by mid 2019 an increased ability to travel meant that sessions could be delivered in settings that were more comfortable for family members. This increased presence 'in community' was viewed as aiding family engagement with LINKS and improving referrals into the service.

Diverging from staff views, carers were less clear of the role that LINKS could or should play in the delivery of culturally appropriate care for Aboriginal or Torres Strait Islander CYPs. Carers gave a mix of positive and ambivalent responses to questions about the suitability of LINKS programs and providers to meet the cultural needs of CYPs. In particular, non-Aboriginal carers were unsure about whether LINKS could or should be aiming to meet the cultural needs of CYPs. While the LINKS service offers opportunities for flexible practice and for programs and therapies to be adapted in light of cultural considerations, for many carers, cultural considerations (at least in the context of therapy) were not front of mind. While interviews with staff suggest that professionals are consciously making adjustments to ensure cultural appropriateness in program delivery, carers showed low levels of awareness of the steps taken to this effect.

Treatment fidelity

Fidelity ratings reflecting staff adherence to program models were generally high – over 92% for EMDR and PCIT, and 81-88% for TIK(T) and TF-CBT.

Over the duration of the evaluation some improvements in the routine collection of treatment adherence data were evident. Staff in 2019 described how increased data collection, completion of treatment fidelity checklists and document auditing, as well as improved and more streamlined processes in collating such information, have been helpful in improving fidelity to program models. Further improvement to the routine monitoring of fidelity by individual therapists is advised, given not all therapists had assessment data available, and - accepting the possibility that some data about program adherence and staff training may have been missing – it may be that additional staff training is needed and that fidelity assessments, and use of that fidelity data become increasingly routinised as part of ongoing staff competency building.

Training and supervision were rated favourably by staff, and concerns that staff had identified with supervision arrangements regarding the unavailability of external clinical supervision and

variations in delivery of TF-CBT depending on who had trained individual staff members, had both been resolved by mid 2019.

However, recommendations about increased use of coaching as a staff competency monitoring and competency enhancing strategy, do not appear to have been adopted. Coaching involves use of a specific set of teaching, prompting and feedback skills to support use of a program with fidelity. While staff report using treatment adherence checklists to monitor treatment integrity, there was no evidence that these checklists or other data was used to guide coaching of individual staff to enhance skill development. While coaching can be considered optional as a skill enhancement strategy, with compensatory strategies such as individual or peer supervision and top-up training perhaps filling needs, data-informed coaching could be adopted as a reliable and acceptable offering to LINKS staff.

Fidelity versus adaption

Over the course of this evaluation, staff described making adaptations to the LINKS service approach to improve CYP engagement with the service and with the wider community, to provide necessary psychoeducation and to adjust materials to better fit a client's developmental level, family circumstances, or their cultural needs. Staff noted that while these modifications were made based on clinical judgements, they were typically conducted in consultation with the manager and the developer of the program.

However, most of the adaptations described by staff were in relation non-core elements of the four individual programs themselves. The adaptations described were more likely to reflect changes to introductory or assessment materials, session location or engagement strategies rather than adaptions to the teaching strategies or content covered in each program. Thus, it seems that the core elements of the program models as intended remain intact, although further and ongoing interrogation of this through sustained monitoring and evaluation using the program fidelity checklists is advised.

Staff interviewed in 2019 commented that many of the adaptions made to the delivery of LINKS in 2019 were based on findings from the 2018 evaluation report. For instance, the creation of educational material to introduce LINKS to families including an animated online video and a frequently-asked questions carer information sheet (including a version for those with limited literacy) had reportedly allowed CYPs and carers to begin a program better informed. Enhancements to the way goal setting conversations were being undertaken with clients had reportedly led to increased clarity for all, and greater motivation and engagement of CYPs to participate in LINKS.

The imposed service constraint of six months of intervention with a client was commonly described as a barrier to the delivery of programs with fidelity, with additional time needed to observe desired outcomes.

Carers were overwhelmingly positive about the treatment offerings within LINKS, comparing LINKS favourably compared to previous supports they had accessed. In addition, carer engagement in programs appears to be somewhat improved since the earliest stages of LINKS implementation, in respect of the widespread acknowledgement by families and staff that family involvement in programs was an important element of program success. Many carers (36%) participated in TIK. And for PCIT, carer involvement is essential. And there was other evidence of carer engagement in service delivery. Some carers in 2019 commented on the accessibility and approachability of LINKS staff, even beyond therapeutic sessions. Regular contact, and the availability of LINKS staff outside weekly program sessions was highly valued by carers, with reflections on the role that played in helping carers better understand the impact of the trauma experienced by the CYP in their care.

Many staff noted that modifications to the LINKS service model were required to engage and involve carers more in the programs. Arguably, treatment effects for the CYP will be best sustained if carers are equipped at exit with the skills they might require to support the CYP effectively. Supporting this, staff in 2018 noted that carers' involvement and learning was not

adequately addressed by every LINKS program, so clinicians sometimes added a component to their treatment plan addressing carer learning and skill development. While in 2018 staff indicated a need for greater time and flexibility to engage with carers, this was not a concern raised by staff during 2019 interviews.

In relation to the ease of use and implementation of LINKS and of the individual treatment programs, staff reported:

- Multidisciplinary teams were an asset to LINKS

- Leadership associated with LINKS was supportive

- Additional engagement and trust-building work was often needed to use the programs with Aboriginal families

- Client complexity and carers' own mental health and motivation sometimes impacted on staff reports about how easy the programs were to use

- Challenges achieving program requirements within the 6 months allowed per client

- High workloads of staff at times presented challenges for staff, although the work was described as manageable most of the time.

Some suggestions for the future were made by carers. For instance, carers felt that it was important to ensure LINKS is offered early in a new placement. This would need to be balanced with placement stability, which was noted as critical by staff interviewees.

A further challenge to the implementation of LINKS was apparent in situations where children experience significant and complex disabilities. Carers advocating for children who were NDIS-eligible reported that a lack of transparency around access to NDIS support had compromised the timeliness of their decisions about how best to access LINKS. One carer described the complexity of this system in detail by noting that the economic pressures faced by the respective departments can lead to a situation where one agency assumes the other agency is responsible for the provision of funding to support. In this confusion, delays for the child ensue. If better system coordination could be achieved between NDIA and DCJ, this would minimise the lags experienced by children in accessing essential support programs.

Carers also noted that:

- LINKS should be available on a more widespread basis

- They would strongly recommend LINKS to other families

- They often did not want to exit the program because of the value they saw in participating.

Previous carer concerns about the location of the service were ameliorated in 2019 through the extension of travel allowances and home/community visiting to deliver programs.

Examination of service outcomes

Service provider records

Findings about treatment outcomes from LINKS support the effectiveness of the model. Treatment effects were evident across a range of intended outcomes, whereby as a group, the children and young people who engaged in LINKS achieved improved socio-emotional functioning, peer relationships, and health/wellbeing, along with reduced behaviour problems, posttraumatic stress, school suspensions and contact with the justice system of the child or young person. And the effect of LINKS on placement stability over time was greater for children and young people who participated in LINKS than for children in OOHC who were not referred to LINKS. Evidence of a treatment effect on reports to the Kids Helpline was less clear, although the impact of LINKS on ROSH was in the desired direction, with promising early evidence of the likely longer-term impact and cost-effectiveness of LINKS.

In summary:

- The number of placement changes during the period in which LINKS was operational was significantly lower ($p<.001$) for the matched LINKS CYPs who exited prior to 2020 compared to the 'business as usual' matched comparison sample, and this analysis showed a moderate to large effect size. Child age (but not Aboriginality) had an effect on this difference between LINKS and comparison group CYPs.

- LINKS CYPs had a smaller mean number of ROSH reports between October 2017 and December 2019 than the matched comparison group, although this difference was not statistically significant when comparing treatment completers (and not including those who discontinued LINKS early) with the 'business as usual' matched sample.

- Of the 108 CYPs who had completed a program in LINKS by end December 2019, 59 were described by staff as having achieved their treatment goals, 39 had progressed towards achieving treatment goals and for ten families no information about goal achievement was provided.

- Of the CYPs who did not 'complete a program', many (40%) had made progress toward their treatment goals by the time they exited the service.

- Controlling for relevant covariates (i.e. number of sessions completed, pre-intervention scores, Aboriginality, child age, gender and socioeconomic status), there were a number of significant effects of treatment identified though repeated measures between-groups ANCOVA comparing clients allocated to a program who had either completed a program or exited early. Specifically, statistically significant treatment effects were found in a number of measures, specifically:

  ➢ There was a significant reduction in disruptive behaviour problems among children and young people who completed a program, as indicated by change in scores on the SDQ Total Problem Scale ($p<.05$ and a moderate effect size) and the SDQ Conduct Problems subscale ($p<.01$ and a moderate effect size), along with significant reductions in ratings of problems on the HoNOSCA Behavioural subscale ($p<.05$ and a moderate effect size).

  ➢ There was a significant reduction in socio-emotional difficulties among children and young people who completed a program, as indicated by change in SDQ Emotional Symptoms subscale scores ($p<.05$ and a moderate effect size).

  ➢ Children and young people who completed a LINKS program achieved significantly improved relationships with peers, as indicated by scores on the SDQ Peer Relationships problems subscale ($p<.05$ and a moderate effect size), as well as reduction in ratings of problems on the HoNOSCA Social subscale ($p<.001$ and a large effect size).

  ➢ There were significant improvements in general health and social functioning for children and young people who completed a LINKS program, as indicated by a decrease in HoNOSCA Total scores ($p<.001$ and a large effect size) and HoNOSCA Symptoms subscale scores ($p<.01$ and a moderate to large effect size).

  ➢ There was a significant reduction in posttraumatic stress among children and young people who completed a program, as indicated by reductions in both the TSCYC Posttraumatic Stress (Intrusion) subscale scores ($p<.05$ and a moderate effect size) and for older children, reductions in TSCC Posttraumatic Stress subscale scores ($p<.05$ and a large effect size)

➢ Those who successfully completed a LINKS program had on average close to two full days less suspended from school during their engagement with LINKS compared to the six months before they started with LINKS ($p<.05$ and a moderate effect size).

➢ Those who successfully completed a LINKS program had fewer court appearances during LINKS treatment than those who discontinued early ($p<.01$ and a moderate to large effect size).

➢ There was a significant improvement in carer wellbeing for those caring for a child/young person who successfully completed a LINKS program, as indicated by carers' PWI-A scores ($p<.05$ and a moderate effect size).

- Despite some areas of non-significance, and no evidence that LINKS is associated with an increased chance of restoration to the birth family at this point, the results are generally in the desired direction for treatment completers.

- Consideration of the limited follow-up data available for CYPs at 6 and 12 month following exit from successful completion of a LINKS program was encouraging, with generally stable or improving outcomes at 6 and 12 months post-exit.

- Those who discontinued a LINKS program early also saw improvements on many clinical measures, although in most cases the change for these CYPs appeared to be smaller in magnitude compared to the treatment group. However, it should be noted that for some measures (e.g. most subscales of the HoNOSCA and the TSCYC), early exiters may have had further to fall – their pre-intervention scores were often higher than treatment completers, so it may not always be surprising that their scores on exit were not as low as post-intervention scores for treatment completers.

In addition to the evidence from the standardised measures about treatment effect, the reports of staff, carers and CYPs alike attest to changes in LINKS recipients which may not be captured by quantitative measures. Around nine in 10 carers who completed client satisfaction survey at exit (including those whose CYP did not complete a program) indicated high levels of satisfaction with the service. Similarly, around nine in 10 CYPs who completed the client satisfaction survey on exit endorsed positive ratings of the service. Furthermore, in a discussion with one LINKS manager it was noted that the capture of data about school attendance, justice contacts and placement changes/respite are important indicators of the CYP's functionality. It could be that symptomatology on a measure like the TSCC or SDQ still suggest the child is in the clinical range, but the CYP may, through therapy, have developed more functional ways of dealing with those symptoms. For instance, the manager described a case of a boy who in the past would have acted on his anger at school by punching other children and leaving home/disappearing for five days. Now, with treatment he reacted to being punched in the face by another student by tearing up a packet of pretzels, scattering them on the classroom floor and telling the teacher she can 'pick them up'. While this behaviour resulted in a five day suspension from school, the boy's previous typical reaction of disappearing for five days would have been more dangerous and dysfunctional (personal communication, March 2019).

Interviews with families

Almost universally positive feedback was provided by the 27 carers interviewed for this evaluation about the outcomes associated with LINKS. Carers observed that the CYP in their care typically developed better coping strategies as a result of LINKS interventions and simultaneously, trauma-readiness within families was also lifted. LINKS was believed to enhance the skills of carers through the development of trauma-informed parenting techniques. Carers described how LINKS had offered them opportunities to develop a more extensive suite of trauma-informed parenting skills which strengthened their ability to both understand and respond appropriately to the CYPs in their care.

The carers we spoke to strongly believed that LINKS assisted children in their recovery from trauma. In the first wave of interviews, carers commended the capacity of LINKS professionals to develop good rapport with the children in their care. The second wave of interviews with carers continued to affirm the high level of professionalism and competency demonstrated by LINKS professionals in working effectively with and building rapport with the CYP and family. Carers consistently reported their children to be positive and relaxed about attending LINKS sessions. Carers universally applauded the strong rapport that LINKS therapists managed to establish with the CYPs in their care. All of the carers interviewed indicated strong support for the continuation of the LINKS service, and for the service to be extended to more families.

Economic evaluation

The cost to deliver LINKS to each CYP is around $27,303 over the 26 months period of this evaluation (or around $12,400 per annum), with minimal additional costs incurred by families. Compared to business as usual without the LINKS service, it costs an additional $11,376 to achieve an increase (one fewer change) in placement stability for CYPs who started and exited LINKS; and it costs an additional $9,447 to achieve an increase in placement stability for CYPs who successfully completed a LINKS program compared to business as usual CYPs. Based on recent literature, the benefits achieved by the LINKS program could potentially outweigh the additional costs invested in the program. Future economic evaluation with available outcome measures such as a multi-attribute utility measure would confirm the cost-effectiveness of the LINKS program.

5.2. Successes and strengths of LINKS

In general, LINKS staff appear to have been 'ready to implement' the programs. Staff reported they were equipped to implement each program through understanding of the evidence base for each, and by receiving training and supervision. Thus, the programs selected for inclusion in LINKS are built on a good evidence base and are acceptable to most stakeholders, including carers. Some programs were more utilised than others (e.g. TF-CBT and TIK/TIK(T) were the most common), perhaps indicating higher levels of staff confidence in using these programs, or greater confidence that they were a good fit for referred clients.

It was widely acknowledged by staff that a strength of the service is the use of multidisciplinary teams, including Aboriginal clinicians. Aligning staffing needs with actual recruitment is a challenge for many services, and attention to the ongoing maintenance of well trained, appropriately supervised and highly engaged staff will be needed if the recognised strengths of this multidisciplinary team is to continue, and if scale up to other locations is desired.

There is flexibility in the delivery of the LINKS service to individual clients, with allowances for adaptions to suit context, including cultural considerations. Nevertheless, it seems that for the most part, the evidence-based programs (EBPs) themselves are not affected by adaptation to the point where fidelity to the model as intended by the developer (and as demonstrated with prior evidence to be effective) is at risk. The use of established EBPs is a true strength of the LINKS approach and should be commended.

LINKS staffs' efforts to adopt and apply the EBPs with fidelity should also be commended. Use of fidelity checklists and adherence to program protocols are evidence of commitment to the integrity and background evidence that a program, if delivered in a way that is reliably consistent with recommended methods, will produce the best possible outcomes for families and young people.

A further strength of the LINKS service model lies in its relationship-based approach. In particular, carers reported exceptionally positive feedback about the relationships they established with LINKS professionals in and beyond therapeutic sessions. The opportunity to provide feedback, consult with professionals 'out of session' and to respond to issues in a timely way were listed as some of the most important benefits associated with the LINKS model. Carers described a sense of partnership and collaboration with the therapist, with both parties working together to share

information in ways which strengthened the family unit and supported the wellbeing of the CYP in care.

In the first stage of the evaluation, carers described the relationships with LINKS staff very positively and argued that the professional and emotional support provided by LINKS staff was a key part of the program's success. During the second round of interviews, carers continued to affirm the positive role that LINKS staff play in supporting CYPs, their carers and the wider family. Thus, carers consistently emphasised that this family-focus represents an important part of the success of LINKS, as the approach strengthens the capacity of a family system to cope with the trauma symptoms experienced by CYPs.

Carers highlighted that LINKS offered personalised support which was qualitatively different to the support they had received from caseworkers and other services. LINKS staff seemed more willing to discuss issues of concern as they arose, to take the time to work with carers to develop appropriate parenting strategies and exhibited commitment to deepening carer understanding of the legacy of childhood trauma. According to the carers interviewed, the LINKS professional played a vital role, akin to an interlocutor, who translated higher level psychometric concepts into everyday techniques which carers could understand.

5.3. Areas for continuing improvement

This report outlines findings about implementation and outcomes associated with LINKS that provide important understandings that will help inform ongoing sustainment of the services in the two locations under assessment, but that will also guide scale up efforts beyond existing sites. Accordingly, we have identified a number of refinement opportunities which would further enhance implementation and outcomes associated with LINKS.

Addressing early discontinuation and referral appropriateness

- Referrals to LINKS should occur early in a new placement, with clear guidelines about the requirements for placement stability.

- Additional efforts (e.g. pre-screening assessments, information to referring agencies about how to recognise trauma symptoms) may be needed to improve reach of the service to the intended client group, in particular in relation to on-entry experiences of trauma symptomatology.

- Consider need for a specific intake/triage process for those with highly unstable placements at referral (e.g. initial family support to stabilise the placement prior to starting a LINKS program, induction session for carers to address mental health or other issues that might impact on placement stability or induce household disruption).

- A carers' induction session, suggested by staff, may be useful to acknowledge and address some of the issues identified under point 1.3 above, regarding household disruption and carers' wellbeing prior to program commencement.

- Routine collection of data about who is making referrals into LINKS will assist understanding about where further promotional targeting may be needed.

Fidelity and adaptation

- Treatment fidelity to be assessed regularly for all therapists and associated data used routinely to drive practice improvement.

- Routine use of the documented enhancements to program materials will ensure the service is ideally suited to fit the cultural needs of Aboriginal and Torres Strait Islander clients into the future.

- Consider staff coaching as a specific skill-development approach to enhancing practitioner skill in using each of the treatment programs, in addition to peer and/or clinical supervision.

Service integration and enhancement

- Explore ways to improve the system interface between NDIS and DCJ to better (e.g. more promptly) cater to LINKS clients who have disabilities.

- Ensure ongoing demand is being met by scaling up staff training in the four EMPs offered through LINKS.

- Review the appropriateness of imposed service duration restrictions (i.e. up to 6 months) in light of client complexity, mid-point increases in some symptomatology (as noted in Report 1), time needed to effectively engage with clients (particularly for Aboriginal and Torres Strait Islander clients where initial trust and rapport building may need additional time), and the demands of the programs (e.g. delivery of PCIT often requires more than six months – mastery of skills is determined by client's pace of learning)

Continue routine data collection for continuous practice improvement and longer term evaluation

- Adopting a continuous practice improvement (CPI) approach to client data collection and consideration of program fidelity data, we recommend the establishment of mechanisms for sharing data routinely with clinicians to guide implementation decisions and to promote accuracy and sustainment of data recording.

- Conclusions about the cost-effectiveness of LINKS would be strengthened through consideration of longer-term effects. Monitoring the likely health and welfare benefits and associated cost-savings associated with participation in the service will contribute to the evidence about the value of LINKS in terms of the lifetime wellbeing of participants.

Scale up

- Given evidence of the effectiveness (including cost-effectiveness) of LINKS, extension of the service beyond the two current locations seems viable. Despite some evidence that the demand on the OOHC system in NSW is decreasing, CYPs continue to enter this system with significant trauma histories. EBPs offer the best therapeutic solution for these highly vulnerable young people, and the LINKS model demonstrates evidence-based practice in service delivery for this target group, including for the large numbers of Aboriginal and Torres Strait Islander young people living in care.

5.4. Strengths and limitations of the evaluation

This evaluation draws on a mix of primary and secondary qualitative and quantitative data, triangulated, and robustly analysed against valid alternatives (e.g. the 'business as usual' matched comparison sample). The evaluation extends beyond a consideration of outcomes, to assess aspects of the implementation and costs of the service, and through the staged sharing of progressive findings, has allowed data-driven decision making to enhance service delivery over the course of the evaluation.

Despite reliance on mixed measures with little missing or incorrect data, there are some limitations associated with the current evaluation. For instance, some of the findings in the current report are based on a small number of LINKS recipients (e.g. TSCC and PWI-SC data, and follow-up data).

For intervention-specific outcomes (i.e. standardised measures of clinical outcomes plus emergency department and juvenile justice contacts, and school suspensions and attendance) there were limitations in the ability to establish an appropriate comparison condition. For the

current report we compared treatment completers with those who discontinued early from LINKS, controlling for pre-intervention sociodemographic factors which may (theoretically) be related to reasons why clients may discontinue early. Thus, the analytical approach used to compare treatment completers with early exiters (repeated measures ANCOVA) did take into account pre-test differences between treatment completers and early exiters, and the number of sessions attended by both treatment completers and early exiters. Thus, our analyses have taken into account treatment exposure. Nevertheless, a proportion (40%) of CYPs who exited prior to treatment completion did make progress towards their treatment goals, and may have exited LINKS because their progress was sufficient to meet need and expectations.

Our analyses of service provider data are limited in the current report to LINKS treatment completers and those who exited early for whom exit data was collected. LINKS staff do attempt to get exit data from families who discontinue prior to completing a program in LINKS, and to get 6-12 month follow-up data from those who successfully completed a program, but this is not always possible (e.g. missing cost data for those who exited prior to 2019, small set of follow-up data). The limited data from those exiting early may introduce some bias in analyses, although the repeated-measures ANCOVA employed herein did account for pre-intervention scores for both the treatment completer and the early discontinuation group.

A limitation of the analyses undertaken for this report is that examination of treatment outcomes was limited to examination of all programs combined. The small number of participants involved in some of the program, along with the tendency for many families to participate in more than one single program type, prohibited comparison of individual programs.

Regarding the economic evaluation, as the long-term cost-benefit of the LINKS service was out of scope of this evaluation, the economic evaluation presented in this report only reflects the short-term cost-effectiveness of the LINKS service. Based on available evidence, the LINKS service deems to achieve specified interim primary outcomes (i.e. increased placement stability and ROSH reduction) compared to business as usual. Based on the evidence from the literature, the benefits achieved from LINKS service could potentially be worth the invested money. However, this needs to be confirmed in future long-term economic evaluation with available data.

5.5   Conclusion

At the time of this final report (June 2020) from the evaluation of the LINKS Trauma Healing Service, LINKS has been in operation for over two years. The evidence supporting the effectiveness of LINKS in relation to targeted CYP outcomes is very encouraging, with multiple indications that improvements are greater for those completing a program in LINKS than for CYPs who exit early, alongside evidence that LINKS is associated with reductions in the number of placement changes a child experiences, and in reports of significant harm when compared with children receiving 'business as usual'. There is also evidence that the LINKS service is likely to be a cost-effective solution to reducing the impacts of OOHC placement instability to the system. While assessment of the longer-term sustainability of these effects is required, early indicators of maintenance of effects over the 6 or 12 month follow-up assessments are encouraging. The service appears to have been implemented with consideration to the types of activities that are associated with quality implementation (e.g. quality staff training and supervision, data driven decision making), with good evidence of fidelity to each of the four program models that are delivered through the service. This report identifies facilitators and barriers to the implementation of LINKS, and outlines how these have been considered and addressed over time, to improve implementation of the service and to promote its value to children and young people in NSW into the future.

6. References

Asimakopoulou, K.G., Hampson, S.E. and Morrish, N.J. (2002). Neuropsychological functioning in older people with type 2 diabetes: the effect of controlling for confounding factors. *Diabetic Medicine, 19*(4), 311-316.

Australian Bureau of Statistics. (2001). *Socio-Economic Indexes for Areas, Australia. Information paper*. Australian Bureau of Statistics, Canberra.

Australian Bureau of Statistics. (2006). *Analysis of the Regional Distribution of Relative Disadvantaged Areas using 2001 SEIFA*. Retrieved from http://www.ausstats.abs.gov.au/ausstats/subscriber.nsf/0/3F98BA340A2BDF76CA25718D0017ACB5/$File/1351055013_jun%202006.pdf

Australian Bureau of Statistics (2019). *Consumer Price Index (June quarter 2019).* Available at: https://www.abs.gov.au/ [Accessed date 20/09/2019].

Bernet, A.C., Willens, D.E., & Bauer, M.S. (2013). Effectiveness-implementation hybrid designs: implications for quality improvement science. *Implementation Science, 8*(1), S2, 52.

Botvin, G. J. (2004). Advancing prevention science and practice: Challenges, critical issues, and future directions. *Prevention Science, 5*(1), 69-72.

Bovee, M.; Srivastava, R.P.; and Mak, B. A conceptual framework and belief-function approach to assessing overall information quality. As cited in Pierce, E. M., & Katz-Haas, R. (Eds.) (2001). *Proceedings of the Sixth International Conference on Information Quality*. Massachusetts Institute of Technology.

Bray, J. & Boyd, D. (2001), *Comparative analysis of care provider payments across Australia and New Zealand 2000*. Brisbane, QLD.

Breitenstein, S. M., Gross, D., Garvey, C. A., Hill, C., Fogg, L., & Resnick, B. (2010). Implementation fidelity in community-based interventions. *Research in Nursing & Health, 33*(2), 164-173.

Briere, J., Johnson, K., Bissada, A., Damon, L., Crouch, J., Gil, E., Hanson, R. and Ernst, V., 2001. The Trauma Symptom Checklist for Young Children (TSCYC): Reliability and association with abuse exposure in a multi-site study. *Child Abuse & Neglect, 25*(8), 1001-1014.

Coast, J. (2004). Is economic evaluation in touch with society's health values? *British Medical Journal, 329*(7476), 1233-1236.

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences*. New York: Routledge Academic.

Cotter, A., Wilsie, C., & Brestan-Knight, E. (2018). Parent–Child Interaction Therapy for families with a history of child maltreatment. In L. N. Niec (Ed.), *Handbook of Parent-Child Interaction Therapy: Innovations and Applications for Research and Practice* (pp. 45-70). Cham, Switzerland: Springer Nature Switzerland AG.

Damschroder, L. J., & Lowery, J. C. (2013). Evaluation of a large-scale weight management program using the consolidated framework for implementation research (CFIR). *Implementation Science, 8*(1), 51.

Deblinger E., Cohen J. A., Mannarino A. P., Murray L. A. & Epstein C. (2008*). TF-CBT Fidelity Checklist (Unpublished instrument).* Stratford, NJ: UMDNJ-SOM CARES Institute.

Department of Communities and Justice. (2019). *Benefit per person per lifetime calculation for a reduction in out-of-home care entry and report of risk of significant harm*. FACSIAR, NSW Department of Communities and Justice.

Dévieux, J. G., Malow, R. M., Rosenberg, R., Jean-Gilles, M., Samuels, D., Ergon-Pérez, E., & Jacobs, R. (2005). Cultural adaptation in translational research: field experiences. *Journal of Urban Health, 82*(3), iii82-iii91.

Drummond, M., Sculpher, M., Claxton, K., Stoddart, G., & Torrance, G. (2015). *Methods for the Economic Evaluation in Health Care Programmes*, 4th Ed. Oxford: Oxford University Press.

Drummond, M.F., Sculpher, M.J., Torrance, G.W., O'Brien, B.J., & Stoddart, G.L. (2005). *Methods for the Economic Evaluation of Health Care Programmes.* 3rd ed. Oxford: Oxford University Press.

Herschell, A. D., Scudder, A. B., Schaffner, K. F., & Slagel, L. A. (2017). Feasibility and effectiveness of Parent–Child Interaction Therapy with victims of domestic violence: A pilot study. *Journal of Child and Family Studies, 26*(1), 271-283.

Ho, D., Imai, K., King, G., & Stuart, E. (2011). MatchIt: Nonparametric Preprocessing for Parametric Causal Inference. *Journal of Statistical Software, 42*(8).

Ho, D., Imai, K., King, G., & Stuart, E. (2007). Matching as Nonparametric Preprocessing for Reducing Model Dependence in Parametric Causal Inference. *Political Analysis, 15*(3), 199–236.

Hogan, W.R. and Wagner, M.M. (1997). Accuracy of data in computer-based patient records. *Journal of the American Medical Informatics Association, 4*(5), 342-355.

Leeds, A. (2016). *A guide to the standard EMDR Protocols for clinicians, supervisors and consultants.* Springer.

Little, M., & Edovald T. (2012) Return on investment: the evaluation of costs and benefits of evidence-based programmes. *Psychosocial Intervention, 21*(2), 215-221.

McHugh, M. (2002), *The costs of caring: A study of appropriate foster care payments for stable and adequate out of home care in Australia*. New South Wales.

Mellor, D. (2005) Normative data for the Strengths and Difficulties Questionnaire in Australia. *Australian Psychologist, 40*(3), 215-222.

Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K. (2015). Purposeful Sampling for Qualitative Data Collection and Analysis in Mixed Method Implementation Research. *Administration and Policy in Mental Health, 42*(5), 533-544.

Parenting Research Centre, Cultural and Indigenous Research Centre Australia & Deakin Health Economics (November 2018). *LINKS Trauma Healing Service Evaluation* (Report 1). Melbourne: Authors.

Parenting Research Centre, Cultural and Indigenous Research Centre Australia & Deakin Health Economics (December 2019). *LINKS Trauma Healing Service Evaluation* (Report 2). Melbourne: Authors.

Pearl, E., Thieken, L., Olafson, E., Boat, B., Connelly, L., Barnes, J., & Putnam, F. (2012). Effectiveness of community dissemination of parent–child interaction therapy. *Psychological Trauma: Theory, Research, Practice, and Policy, 4*(2), 204-213.

Perneger, T. V. (1998). What's wrong with Bonferroni adjustments. *British Medical Journal, 316*(7139), 1236-1238.

Pink, B. (2008). *Information Paper: An Introduction to Socio-Economic Indexes for Areas (SEIFA) 2006.* Retrieved from http://abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/2039.02006:

Redman, T.C., 1998. The impact of poor data quality on the typical enterprise. *Communications of the ACM, 41*(2), 79-82.

Rothman, K. J. (1990). No adjustments are needed for multiple comparisons. *Epidemiology, 1*(1). 43-46.

Skale, G., Perez, H. & Williams, M.E. (2020). Factors Influencing Implementation of Evidence-Based Mental Health Interventions for Infants and Young Children. *Journal of Behavioral Health Services & Research* (online early, May 2020): https://link.springer.com/article/10.1007%2Fs11414-020-09694-5.

Appendix A: Descriptions of each program[14]

Trauma-Focused Cognitive Behaviour Therapy (TF-CBT)

Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) is a conjoint parent-child treatment that uses cognitive-behavioural principles and exposure techniques to prevent and treat post-traumatic stress, depression, and behavioural problems.

TF-CBT uses trauma sensitive interventions and gradual exposure to the CYP's traumatic experience to help the CYP develop coping skills. Key elements of the program include psychoeducation (e.g. common reactions to trauma exposure), coping skills (e.g. relaxation, feelings identification, cognitive coping), gradual exposure (e.g. imaginal, in-vivo), cognitive processing of trauma-related thoughts and beliefs, and caregiver involvement (e.g. parent training, conjoint child-parent sessions).

The approach is designed to be developmentally appropriate for the needs of CYP and their caregivers. To accommodate a variety of traumatic experiences, TF-CBT includes general psychoeducational materials with recommendations for tailoring treatment for individuals who have experienced physical abuse, sexual abuse, or interpersonal violence.

TF-CBT is delivered to CYP aged 3-18 years in weekly 45 minute sessions over 12-18 weeks.

Pre-requisite qualifications: According to program developers, professionals require a Master's Degree or above in a mental health discipline and must have received training in the program. TF-CBT usually involves parallel sessions with CYP and their non-offending caregivers plus some joint caregiver- CYP sessions in the later stages of the program.

Evidence:

TF-CBT is rated as well-supported by the Californian Evidence-Based Clearinghouse. To receive a rating of well-supported the program must have at least two rigorous randomised controlled trials (RCT) with one showing a sustained effect of at least one year.

A review of meta-analyses, reviews, and individual studies by Ramirez de Arellano et al. (2014) identified 10 RCTs and reported a high level of evidence for TF-CBT for many types of trauma and for reducing symptoms of posttraumatic stress disorder.

In a meta-analysis of TF-CBT for treating post-traumatic stress disorder (PTSD) and co-occurring depression among CYP, Lenz and Hollenbaugh (2017) identified 21 studies representing 1860 CYP. The authors reported that TF-CBT was exceptionally superior to no treatment or wait-list comparisons and moderately superior to alternative treatments.

A review by The Australian Centre for Posttraumatic Mental Health and Parenting Research Centre (2013) identified seven evaluations of TF-CBT which included four RCTs. Two of the RCTs had follow-up at 12 months post-intervention and reported significant reductions in posttraumatic stress disorder, child abuse-related shame and child dissociation.

The extensive research evidence available about TF-CBT supports its use with CYP 3-18 years who have experienced trauma as a result of sexual or physical abuse, family violence and other

---

[14] Information about each program has been compiled by the evaluators from a number of sources, including the Californian Evidence-Based Clearinghouse, the Blueprints for Healthy Youth Development website, and the Substance Abuse and Mental Health Services Administration (SAMHSA) website. We acknowledge that this information is largely based on US sources, but provide it here as a guide to the intentions of the developers of the programs

traumatic events. There is evidence of effectiveness in improving CYP outcomes associated with child mental health (depression, anxiety, PTSD) and behavioural functioning. Evidence also supports this as a program leading to improvements in caregivers' emotional distress and parenting. TF-CBT uses cognitive behavioural techniques and exposure treatment strategies and has strong evidence of effectiveness for CYP in foster care (Dorsey et al., 2011; Weiner et al., 2009).

While it is unclear if TF-CBT has been evaluated for effectiveness with Aboriginal and Torres Strait Islander CYP, it has been used with effect with diverse cultural populations including Latin American and African American CYP with evidence of effectiveness (e.g. Deblinger et al., 1996, 1999, 2006; Cohen et al., 1996, 1997, 2005) and CYP in Africa (O'Callaghan et al., 2013). TF-CBT has been adapted to suit different cultural groups including Native American CYP, with early evidence suggesting it is a suitable and acceptable program.

References:

Australian Centre for Posttraumatic Mental Health and Parenting Research Centre (2013). *Approaches targeting outcomes for children exposed to trauma arising from abuse and neglect – Evidence, practice, and implications*. Report prepared for the Australian Government Department of Families, Housing, Community services and Indigenous Affairs. Australian Centre for Posttraumatic Mental Health and Parenting Research Centre.

Dorsey, S., Cox, J. R., Conover, K. L., & Berliner, L. (2011, Summer). Trauma-focused cognitive behavioral therapy for children and adolescents in foster care. *Children, Youth, and Family News.* Retrieved from www.apa.org/pi/families/ resources/newsletter/index.asp.

Lenz, A.S. & Hollenbaugh, M.K. (2015). Meta-Analysis of Trauma-Focused Cognitive Behavioral Therapy for Treating PTSD and Co-occurring Depression Among Children and Adolescents. *Counseling Outcome Research and Evaluation, 6*(1), 18-32.

Ramirez de Arellano, M.A., Lyman, D.R., Jobe-Shields, L., George, P. Dougherty, R.H. Daniels, A.S., Ghose, S.S., Huang, L., Delphin-Rittmon, M.E. (2014). Trauma-Focused Cognitive-Behavioral Therapy for Children and Adolescents: Assessing the Evidence. *Psychiatry Services. 65*(5), 591-602.

Weiner, Dana & Schneider, Alison & Lyons, John. (2009). Evidence-based treatments for trauma among culturally diverse foster care youth: Treatment retention and outcomes. *Children and Youth Services Review, 31*(11), 1199-1205.

Parent Child Interaction Therapy (PCIT)

PCIT is an evidence-based behavioural parent training treatment for young children with emotional and behavioural disorders that aims to improve the quality of the parent/carer-child relationship and changing parent/carer-child interaction patterns.

PCIT uses in vivo coaching of parental behaviours. Skills are taught via didactic presentations to parents, and direct coaching of parents while they are interacting with their children. In didactic sessions (usually two sessions), the focus is on teaching the parent specific skills related to each phase of the therapy and these sessions are conducted prior to the direct coaching sessions. The remainder of PCIT (usually about 10–12 sessions) involves direct coaching sessions. These sessions are conducted with the parent and child in a play therapy room with the therapist in another room behind a one-way mirror. The therapist and the parent communicate through an earpiece. The therapist provides direct coaching of parental communication and behaviour management skills and provides immediate feedback and reinforcement.

PCIT is a mastery-based program, that is, families remain in treatment until parents have demonstrated mastery of the treatment skills and rate their child's behaviour as within normal limits on a standardised measure of child behaviour. Therefore treatment length varies but averages around one hour weekly sessions for 14 weeks.

Evidence:

PCIT is rated as well-supported by the California Evidence-Based Clearinghouse. To receive a rating of well-supported the program must have at least two rigorous RCTs with one showing a sustained effect of at least one year.

In a meta-analysis of PCIT for children with clinically significant externalising behaviour problems (Ward et al., 2016), analysis of a combined sample size of 254 treated and 118 control group children showed a large positive effect on improving externalising behaviour problems.

Rae and Zimmer-Gembeck (2007) conducted a meta-analysis of 13 studies and found a large positive effect for child behavioural outcomes.

The program has undergone three RCTs in the United States. The most recent RCT (Thomas & Zimmer-Gembeck, 2011) found improvements in child behaviour, parental behaviour and statistically significant improvements in parent report of child problems and parental stress.

References:

Rae, T. & Zimmer-Gembeck, M.J. (2007). Behavioral Outcomes of Parent-Child Interaction Therapy and Triple P—Positive Parenting Program: A Review and Meta-Analysis. *Journal of Abnormal Child Psychology, 35*(3), 475-495.

Thomas, R. & Zimmer-Gembeck, M. J. (2011). Accumulating evidence for parent child interaction therapy in prevention of child maltreatment. *Child Development, 82*(1), 177-192.

Ward, M.A., Theule, J., & Cheung, K. (2016). Parent–Child Interaction Therapy for Child Disruptive Behaviour Disorders: A Meta-analysis. *Child Youth Care Forum, 45*(5), 675-690.

A full list of PCIT research is available here:

http://www.pcit.org/literature.html

Tuning in to Kids / Tuning in to Teens

The Tuning in to Kids (TIK) parenting programme aims to promote the development of emotional competence and prevent behaviour problems in young children by improving parents' own emotional competence as well as teaching them emotion coaching skills.

The program teaches parents simple emotion coaching skills - that is how to recognise, understand, and manage their own and their children's emotions. When their children are emotional, parents: notice the emotion, name it, show empathy and then wait for the emotion to subside (often by comforting the child) before trying to talk about the situation leading to the emotional experience and or what to do about it. The program aims to prevent problems developing in children, promote emotional competence in parents and children, and when present, reduce and treat problems with children's emotional and behavioural functioning.

Tuning in to Teens (TIK*T)) is a modification of the Tuning in to Kids program for parents of adolescents.

It is delivered to groups of 8-12 parents in 6 X 2-hour weekly sessions. The program can be adapted to a 10 X 2 hour weekly sessions program for clinical/high need participants.

Pre-requisite qualifications: Professionals require a Bachelor's level or Master's level degree in a discipline such as psychology, social work, occupational therapy, psychiatry, nursing, speech-language therapy, teaching, or medicine.

Evidence:

Tuning in to kids has undergone several studies and evaluations (including an RCT) for various treatment groups and is rated as supported by California Evidence-Based Clearinghouse. To receive a rating of supported a program must have at least one rigorous RCT with a sustained effect of at least 6 months.

An RCT was undertaken to evaluate the effectiveness of Tuning in to Teens (Kehoe, Havighurst & Harley, 2014). The outcomes of the evaluation showed:

- Parents reported significant reductions in the young person's anxiety, depressive symptoms, somatic complaints and behaviour problems.

- Parents reported significant reductions in their own anxiety/depressive symptoms and improved emotional competence when compared to control families who reported no changes.

- Parents and their children reported improvements in parenting and reductions in family conflict.

Research on TIK supports its use with CYP aged 3–15 years, including those with significant behavioural and emotional disturbance, and those who have experienced trauma as a result of child abuse or neglect. Although not yet published in the peer- reviewed literature, the developers of TIK have described the findings from a pilot study of the 'Trauma-focused Tuning in to Kids' program that was delivered in a clinical setting with 77 parents/caregivers of CYP (3–15 years) who had experienced complex trauma. The study employed a single-group pre- and post-intervention design and found significant improvements in CYP's emotion socialisation, the parent-child relationship, parent mental health and CYP's emotional and behavioural functioning.

While TIK is being used with Aboriginal and Torres Strait Islander families, there have been no studies published on this to date. The program was developed in Australia, and is available in a range of languages relevant to the Australian community (Arabic, Cantonese, Somali, Vietnamese).

References:

Kehoe, C. E., Havighurst, S. S. & Harley, A. E. (2014). Tuning in to Teens: Improving parent emotion socialization to reduce youth internalizing difficulties. *Social Development, 23*(2), 413-431.

A full list and summary of the research is available here:
http://www.tuningintokids.org.au/professionals/research/

Eye Movement Desensitization and Reprocessing (EMDR) for child trauma

EMDR is a psychotherapy in which the person being treated recalls a traumatic memory while generating one of several types of bilateral sensory input such as side-to-side eye movements or hand tapping. The traumatic memory is desensitized by short imaginal exposure with bilateral stimuli and the process is repeated until the accompanying level of disturbance has disappeared and the dysfunctional cognitions about the trauma have become functional.

EMDR treatment starts with history taking and treatment planning. The therapist then asks the client to focus on the traumatic memory by means of directive questioning. The client is asked to give a negative, dysfunctional cognition related to the traumatic memory, and in addition, to create a positive, functional cognition. Then, attention is given to the emotion that is connected to the memory and dysfunctional cognition, and the client is asked to find places in the body where the physical phenomena are felt. After that, the client focuses on the traumatic memory and its associated dysfunctional cognition, emotion and the physical sensations in combination with the bilateral stimulation. Each new connected association with the traumatic memory is followed by a new series of stimuli. The level of disturbance is repeatedly measured on a ten-point Likert-scale until substantially decreased to zero (desensitisation).

It is delivered to clients in weekly 50-90 minute sessions. The length of treatment is variable depending on the severity of the trauma but generally ranges from 3-12 sessions.

Pre-requisite qualifications: program providers must be allied health professionals with specialist training in mental health (Psychiatry, Psychology, Mental Health Social Workers, Psychological Medicine, etc) who have full registration with the Australian Health Practitioner Regulation Agency or NSW Registration Board. Social Workers must also be eligible for membership to AASW.

Evidence:

EMDR is rated as well-supported by the California Evidence-Based Clearinghouse. To receive a rating of well-supported the program must have at least two rigorous RCTs with one showing a sustained effect of at least one year.

The efficacy of EMDR for PTSD in CYP has been established in in several meta-analyses.

EMDR has also been used with CYP in OOHC settings. For example, Soberman and colleagues (2002) found that EMDR resulted in significant reductions in behaviour problems in boys with conduct problems in residential care. In the absence of evidence regarding its effective use with Australian Aboriginal CYP we note that EMDR has been used in studies that include with Native American CYP. For example, Scheck and colleagues (1998) found that EDMDR resulted in significant improvements in depression, anxiety, PTSD, intrusive thoughts and avoidance.

References:

Brown R. C., Witt A., Fegert J. M., Keller F., Rassenhofer M., & Plener P. L. (2017). Psychosocial interventions for children and adolescents after man-made and natural disasters: a meta-analysis and systematic review. *Psychological Medicine, 47*(11)*,* 1893–1905.

Moreno-Alcázar A., Treen D., Valiente-Gómez A., Sio-Eroles A., Pérez V., Amann B. L., & Radua, J. (2017). Efficacy of eye movement desensitization and reprocessing in children and adolescent with post-traumatic stress disorder: a meta-analysis of randomized controlled trials. *Frontiers in Psychology, 8*, 1750. Rodenburg R., Benjamin A., de Roos C., Meijer A. M., & Stams G. J. (2009). Efficacy of EMDR in children: a meta-analysis. *Clinical Psychology Review. 29*(7), 599–606.

Appendix B: Governance arrangements
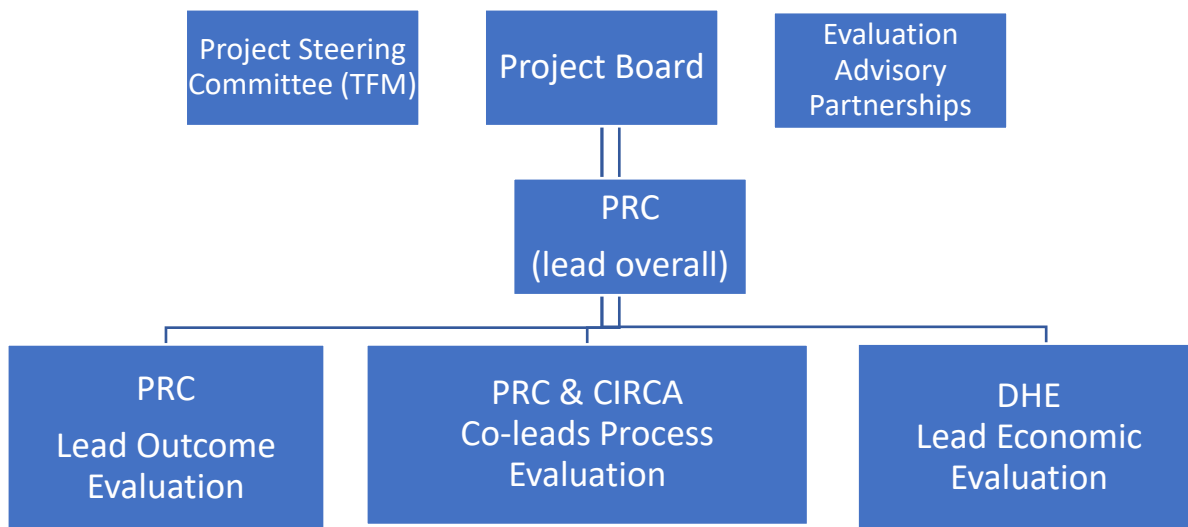
Figure A11: LINKS Evaluation Governance Structure

The evaluation was managed according to an agreed structure. PRC had broad oversight of the evaluation including project management and reporting responsibilities. The three components were led by PRC (Outcomes Evaluation), CIRCA and PRC (Process Evaluation) and DHE (Economic Evaluation). A Project Board was appointed to provide guidance to the evaluators, consisting of senior members of the three evaluation partners (Associate Professor Jan Matthews, Dr Naomi Hackworth, Ms Annette Michaux and Dr Catherine Wade from the PRC; Andrew Anderson and Lena Etuk from CIRCA; and Professor Lisa Gold from DHE), plus Professor Sandra Eades from University of Melbourne, who brought extensive research and health sector expertise particularly in relation to Indigenous populations.

Appendix C: Child/young person and family outcomes measures used in the evaluation

The Trauma Symptom Checklists for Children (TSCC) and for Young Children (TSCYC) are standardised and normed trauma measures for CYP who have been exposed to traumatic events such as child abuse, peer assault, and community violence.

The **TSCC** is a 54-item self-report measure for CYP between 8 to 16 years of age who have experienced or witnessed traumatic events. All items are presented as thoughts, feelings, and behaviours, and are responded to on a 4-point Likert scale, from 0 ('never') to 3 ('almost all of the time'). These items tap into the follow six clinical scales:

- Anxiety (ANX)

- Depression (DEP)

- Anger (ANG)

- Posttraumatic stress (PTS)

- Dissociation (DIS)

- Sexual concerns (SC)

Raw scores are converted into T scores for comparison with normative populations, with higher scores indicating greater posttraumatic symptomology (Briere, 1996). With the exception of the sexual concerns scale, T scores of 65 or above are considered clinically significant. T scores between 60 to 65 indicate difficulty or subclinical symptomology. For the sexual concerns scale, T scores of 70 or above are considered clinically significant.

Based on the TSCC, the **TSCYC** is a 90-item caretaker-report measure for carers of CYP between 3 and 12 years of age who have experienced or witnessed traumatic events. All items are presented as symptoms in relation to how often they have occurred in the past month, and are rated to on a 4-point Likert scale from 1 ('not at all') to 4 ('very often') (Briere et al., 2001). Eight clinical scales and a summary scale provide information about acute and chronic symptomatology that are common for many traumatised CYP. The subscales are:

- Anxiety (ANX)

- Depression (DEP)

- Anger/Aggression (ANG)

- Posttraumatic Stress-Intrusion (PTS-I)

- Posttraumatic Stress-Avoidance (PST-AV)

- Posttraumatic Stress-Arousal (PTS – AR)

- Dissociation (DIS)

- Sexual Concerns (SC)

All raw scores are converted to T scores for norm comparison, with high scores indicative of greater symptomology. T scores between 65 and 70 are suggestive of subclinical symptomology and considered to be problematic, while scores 70 and above indicate clinically elevated symptomology.

The TSCC and TSCYC have separate norms for males and females in each age group: 3-12 years and 8-16 years. The measures contain scales to ascertain the validity of carer reports (Response Level and Atypical Response).

Psychometric information: With the exception of the sexual concerns scale, TSCC scales have high internal consistency in the normative sample, with alphas ranging from .82 to .89 (Briere, 1996). The sexual concerns scale was considered moderately reliable (alpha = .77). Reliability analysis of the TSCYC indicated high internal consistency for all scales, with alphas ranging from .81 for sexual concerns to .91 for both the anger and dissociation scales (average of .87 across all scales; Briere et al., 2001). Although the response level validity scale was moderately reliable (alpha = .73), atypical response had low reliability (alpha = .36) (Briere et al., 2001).

In relation to content validity, 75 items of the TSCC were initially created to tap into six domains: anxiety, depression, anger, posttraumatic stress, dissociation, and sexual concerns or preoccupation. After consultation with clinicians specialising in the treatment of traumatised CYP, 21 items were discarded as redundant or less meaningful indicators of the domains of interest. The 54 items of the measure were then included in several studies of child abuse impacts (Elliot & Briere, 1994; Friedrich, 1991), where reliability and validity analyses suggested no further need for scale refinement (Briere, 1996).

Regarding convergent and discriminant validity, TSCC scales correlated with scales of similar content (concurrent validity) and showed less correlation with scales of less similar content (discriminant validity). Briere and Lanktree (1995) found significant intercorrelations between the TSCC and the Youth and Parent Report versions of the Child Behaviour Checklist (CBCL), and the Children's Depression Inventory (CDI).

In relation to construct validity, Singer and colleagues (1995) and Evans, Briere, Boggiano, and Barrett (1994) found that TSCC respondents' experience of stressful life events were associated with and predicted by significant amounts of variance in all TSCC scales. TSCC scales were more powerful predicators of life stressors than were the CDI or the RCMAS. Elliot and Briere (1994) found that sexually abused CYP scored higher on each of the TSCC scales than non-abused CYP, and in CYP with sexual abuse histories, disclosure of abuse status was predicted by TSCC scores. Elliot and Briere (1995) found that childhood sexual abuse was uniquely related to all TSCC scales except Anger. Physical abuse was uniquely associated with all scales except Sexual Concerns and neglect was specifically related to Depression and Dissociation. Lanktree and Briere (1995) reported change in TSCC scores with therapy.

Briere and colleagues (2001) found the TSCYC had adequate construct validity as indicated by associations between different childhood abuses and three scales of the TSCYC (Posttraumatic Stress, Sexual Concerns, and Dissociation). Other studies have confirmed these findings (e.g. Elliot & Briere, 1994).

In relation to criterion (or predictive) validity, evidence that the TSCC taps posttraumatic distress is demonstrated in studies where TSCC scores are highest after more severe trauma and specific scales differentiate trauma type (Smith, Swenson, Hanson & Saunders, 1994; Briere & Lanktree, 1995). Diaz, (1994) examined the relative ability of several measures and variables to discriminate 81 sexually abused girls from 151 controls and found that the Posttraumatic Stress, Depression and Anxiety scales of the TSCC were significant discriminators over other measures, including the CBCL, the Rosenberg Self-Esteem Scale and a measure of suicidality and substance abuse history.

The Personal Wellbeing Index (PWI) is a self-report measure of quality of life across domains related to health, safety and social functioning (International Wellbeing Group, 2013).

The PWI can be used with any section of the population. The adult version of the PWI (PWI-A) contains seven items, each one corresponding to a quality of life domain: standard of living, health, life achievement, personal relationships, personal safety, community-connectedness, future security and spirituality-religion. The PWI-A also has optional items - the one that taps into general life satisfaction was used in the LINKS evaluation. All items for the PWI-A are responded to on a 11-point scale from 0 ('no satisfaction at all') to 10 ('completely satisfied') (International Wellbeing Group, 2013).

Parallel versions of the adult PWI have been developed:

- PWI-School Children (PWI-SC) is for use with CYP attending primary or secondary school. This instrument comprises seven items addressing satisfaction with the following life domains: standard of living, health, life achievements, personal relationships, personal safety, community connectedness, and future security. The PWI-SC has an optional item tapping into happiness with life as a whole (Cummins & Lau, 2005). Items on the PWI-SC are responded to on an 11-point scale from 0 ('very sad') to 10 ('very happy') (Cummins & Lau, 2005).

- PWI-Intellectual Disability (PWI-ID) is designed as an alternative to the PWI-A for adults who have an intellectual disability or other form of cognitive disability.

Raw scores can be converted into standard scores ranging from 0 to 100, with higher scores indicating greater satisfaction or happiness (International Wellbeing Group, 2013). At a group level, standardised scores between 73.4 and 76.4 represent the average range of wellbeing within an Australian context (Mead & Cummins, 2010). At an individual level, average wellbeing scores range from 50 to 90 points. According to Mead and Cummins (2010), scores that fall below these ranges are suggestive of poorer wellbeing and an increased risk of depression. Increasingly lower scores translate to progressively higher risk of depression. These data range interpretations are the same for the adult (International Wellbeing Group, 2013) and child (Cummins & Lau, 2005) versions of the PWI.

The PWI-SC is being used in the LINKS evaluation to monitor CYP-reported changes in psychological wellbeing (only for young people aged 12+ years). The PWI-A or PWI-ID is being used to monitor changes in carer capacity for the adult carer of CYP and where relevant for another carer of CYP.

Psychometric information: Australian and International data indicates the PWI has moderate to good internal consistency, with Cronbach's alphas ranging from .70 to .85 (International Wellbeing Group, 2013). Inter-domain correlations are reported between .30 to .55, indicating moderately strong correlations. The PWI has good test-retest reliability, with an intra-class correlation coefficient of .84 over a 1 to 2 week interval (International Wellbeing Group, 2013).

According to the International Wellbeing Group (2013), the unique and shared variance of all seven domains explains between 40 to 60% of variance in 'satisfaction with life as a whole'. This, in addition to the seven domains consistently establishing a single factor that accounts for approximately 50 percent of variance in Australian samples, supports the construct validity of the PWI as a measure of quality of life (International Wellbeing Group, 2013).

A moderately strong correlation (r = .78) between the PWI and the Satisfaction with Life scale (a 5-item scale measuring life satisfaction; Diener, Emmons, Larsen, & Griffin, 1985), suggesting good convergent validity (International Wellbeing Group, 2013).

The Strengths and Difficulties Questionnaire (SDQ) is a behavioural screening questionnaire for CYP aged 2 to 17 years, developed by United Kingdom child psychiatrist Robert Goodman. There are multiple version of the SDQ, including teacher report and CYP report versions, however, for the LINKS evaluation only the carer report version has been used. There are versions of the SDQ in different lengths: a short form (25 items), a longer form with impact supplement, and a follow-up form designed for use after a behavioural intervention. The 25 item version was used for LINKS, comprising 5 subscales of 5 items each. The subscales are:

1) Emotional symptoms subscale

2) Conduct problems subscale

3) Hyperactivity/inattention subscale

4) Peer relationships problem subscale

5) Prosocial behaviour subscale.

This questionnaire takes 3–10 minutes to complete. Items are rated on a 3-point scale, with potential responses including 'not true', 'somewhat true', or 'certainly true'. Scores on each of the five subscales range from 0 to 10, and the total 'difficulties' score ranges from 0 to 40 (note that the total score does not include prosocial behaviour subscale ratings). With the exception of the prosocial behaviour subscale, high scores are indicative of greater behavioural or emotional concern. For total scores with parents as informants, scores ranging from 0 to 13 indicate the normal range, scores ranging from 14 to 16 indicate the borderline range, while scores ranging from 17 to 40 are considered to be in the abnormal range. 'Normal', 'borderline', and 'abnormal' cut-offs do differ slightly between informants (i.e. parent, teacher, or self). For further information about cut-off ranges and scoring instructions for different informants and subscales, see http://www.sdqinfo.com/.

Psychometric information: Internal consistency of each subscales and the total score have Cronbach's alphas between .57 to .85, and an overall mean of .73 suggesting satisfactory reliability (Goodman, 2001). The mean interrater correlation has been reported to be .34, indicating acceptable agreement between different raters (i.e. parents, teachers, and CYP). Findings from Goodman's (2001) research also indicated that those who rated in the top tenth percentile (representing the high-risk group according to SDQ cut-off criteria) had an increased probability of experiencing psychiatric risks and disorders. This suggests the SDQ is a valid measure of behavioural and emotional dysfunction, with the potential to detect psychiatric symptoms in accordance with diagnostic criteria.

The Health of the Nation Outcome Scales for Children and Adolescents (HoNOSCA) is a clinician-rated instrument for use in child and adolescent mental health services measuring general health and social functioning.

The measure is made up of two sections. The first section consists of 13 items relating to different types of problems regarding behaviour, impairments, symptoms, and social wellbeing.

The second section consists of two items relating to carer's knowledge of the nature of the young person's difficulties and their understanding about services available. Ratings on these two items are not a part of the total score calculated for items 1–13.

The HoNOSCA is completed by a qualified mental health professional (clinician) using information obtained from a comprehensive mental health assessment and from routine clinical work. Clinicians are advised to draw upon information from all available sources when completing ratings, including information provided by the service user and as well as clinical notes.

Each item is rated on a 5-point scale from 0 ('no problems') to 4 ('severe to very severe problems'). Scores from items 1 to 13 are summed to form a total HoNOSCA score, which can range from 0 to 52. Subscales can be computed based on the sum of specific items per category (i.e. behavioural problems, impairment, symptomatic problems, and social problems) (Gowers et al., n.d.). The total HoNOSCA score represents the overall severity of an individual's psychiatric symptoms, with higher scores indicating more severe symptoms (Gowers et al., 1998).

According to the HoNOS Guide for New Zealand Clinicians (Te Pou o te Whakaaro Nui, 2016), items rated 2 ('mild problem') or above can be considered clinically significant, and it is advised that follow-up procedures be undertaken (i.e. ongoing monitoring, active treatment or management plan) in relation to those specific items.

Psychometric information: Several studies have explored the test-retest reliability of the HoNOSCA with correlations between .69 and .80 in total HoNOSCA scores (e.g. Pirkis et al., 2005) suggesting the HoNOSCA is a stable measure over time and that it has adequate test-retest reliability.

Growers and colleagues (1999) reported intraclass correlations from .67 to .98, indicating moderate to strong interrater reliability.

To explore this scale's concurrent validity, Pirkis et al (2005) reviewed studies that examined the relationship between the HoNOSCA and other similar scales. Results indicated that the HoNOSCA correlated well with scales such as the Paddington Complexity Scale, the Global Assessment of Psychosocial Disability, and the Children's Global Assessment Scale ($r > .60$).

Pirkis and colleagues (2005) also noted that the HoNOSCA could be used to discriminate between those who would later receive intensive outreach treatment and those who would obtain other forms of community-based care. Thus the HoNOSCA has adequate predictive validity.

The Parental Stress Scale (PSS) is a carer-report measure of the levels of stress experienced by parents, that was developed by Berry and Jones (1995) as an alternative to the 101-item Parenting Stress Index (Abidin, 1995). The PSS contains 18 items that consider both positive and negative aspects of parenting.

The PSS has two components: pleasure or positive themes of parenthood (emotional benefits, self-enrichment, personal development) and negative components (demands on resources, opportunity costs and restrictions). Respondents are asked to agree or disagree with items in terms of their typical relationship with their CYP and to rate each item on a five-point scale: strongly disagree (1), disagree (2), undecided (3), agree (4), and strongly agree (5). The eight positive items are reverse scored so that possible scores on the scale can range between 18-90. Higher scores indicate greater stress.

The PSS is suitable for use with mothers and fathers and for parents of CYP with and without clinical problems. It can be used to assess changes in parental stress levels for parents/carers who have accessed targeted support, such as family support, parenting courses and one to one parenting support.

Psychometric information: The PSS has adequate reliability, with a Cronbach's alpha coefficient of .83, a mean inter-item correlation of .23, item-whole correlations between .27 and .59 (mean of .43), and a test-retest correlation of .81 across a 6-week period (Berry & Jones, 1995).

To explore the concurrent validity of the PSS, scores were compared to the Perceived Stress Scale. Correlation coefficients ranged from .46 (mothers' scores) to .53 (fathers' scores), suggesting a moderate relationship between stress scores on these different scales (Berry & Jones, 1995). Berry and Jones (1995) also noted that mothers of children with developmental

disability (e.g. cerebral palsy) scored significantly higher on the PSS compared to non-clinical controls. Such findings are consistent with those of Beckman (1991) when using the Parenting Stress Index, which highlights the capacity of the PSS to differentiate stress levels between clinical and non-clinical parent populations, and that the PSS performs as well as the Parenting Stress Index in assessing parent-related stress.

References for Appendix C

Berry, J.O., & Jones, W.H. (1995). The Parental Stress Scale: Initial Psychometric Evidence. *Journal of Social and Personal Relationships, 12*(3), 463-472.

Briere, J. (1996) *Trauma Symptom Checklist for Children: Professional Manual*. Florida: Psychological Assessment Resources Inc.

Briere, J., Johnson, K., Bissada, A., Damon, L., Crouch, J., Gil, E., ... & Ernst, V. (2001). The Trauma Symptom Checklist for Young Children (TSCYC): Reliability and association with abuse exposure in a multi-site study. *Child Abuse & Neglect, 25*(8), 1001-1014.

Briere, J., & Lanktree, C.B. (1995) The Trauma Symptom Checklist for Children (TSCC): Preliminary psychometric characteristics. Unpublished manuscript, Dept. of Psychiatry, University of Southern California School of medicine. As cited in Briere, J. (1996). *Trauma Symptom Checklist for Children: Professional Manual*. Florida: Psychological Assessment Resources Inc.

Cummins, R., & Lau, A. (2005). *Personal Wellbeing Index – School Children*. Victoria: Deakin University.

Diaz, J. (1994). The impact of sexual abuse on adolescent females: factors influencing subsequent psychological adjustment and sexual behaviour. Unpublished doctoral dissertation. Columbia University, New York. Cited in Briere, J. (1996) *Trauma Symptom Checklist for Children: Professional Manual*. Florida: Psychological Assessment Resources Inc.

Diener, E. D., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49*(1), 71-75.

Elliot, D. M., & Briere, J. (1994) Forensic Sexual Abuse evaluations in older children: Disclosures and symptomatology. *Behavioural Sciences and the Law, 12*(3), 261-277.

Elliot, D.M., & Briere, J. (1995). Posttraumatic stress associated with delayed recall of sexual abuse: A general population study. *Journal of Traumatic Stress, 8*(4), 629-647.

Evans, J.J., & Briere, J., Boggiano, A.K. & Barrett, M. (1994). Reliability and validity of the Trauma Symptom Checklist for Children in a normative sample. Paper presented at the San Diego Conference on responding to Child Maltreatment. Cited in Briere, J. (1996). *Trauma Symptom Checklist for Children: Professional Manual*. Florida: Psychological Assessment Resources Inc.

Friedrich, W. N. (1991). Sexual behaviour in sexually abused children. As cited in Briere J. (Ed.), *Treating Victims of Child Abuse*. San Francisco: Jossey-Bass.

Friedrich, W. N. (1991). Sexual behavior in sexually abused children. *New Directions for Mental Health Services, 1991*(51), 15-27.

Goodman, R. (2001). Psychometric properties of the strengths and difficulties questionnaire. *Journal of the American Academy of Child & Adolescent Psychiatry, 40*(11), 1337-1345.

Gowers, S. G., Beevor, A. S., Harrington, R. C., Jezzard, J. K., Lelliott, P., Whitton, A., & Wing, J. K. (1998). *HoNOSCA Health of the Nation Outcome Scales: Child and Adolescent Mental Health: Glossary for HoNOSCA Score Sheet*. University of Liverpool.

Gowers, S. G., Harrington, R. C., Whitton, A., Beevor, A. S., Lelliott, P., & Wing, J. K. (n.d.). *HoNOSCA Health of the Nation Outcome Scales: Child and Adolescent Mental Health: Trainer's Guide*. University of Liverpool.

Gowers, S. G., Harrington, R. C., Whitton, A., Lelliott, P., Beevor, A., Wing, J., & Jezzard, R. (1999). Brief scale for measuring the outcomes of emotional and behavioural disorders in children: Health of the Nation Outcome Scales for Children and Adolescents (HoNOSCA). The *British Journal of Psychiatry, 174*(5), 413-416.

International Wellbeing Group (2013). *Personal Wellbeing Index – Adult: 5th Edition*. Melbourne: Australian Centre on Quality of Life, Deakin University.

Lanktree, C.B. & Briere, J. (1995). Outcome of therapy for sexually abused children: A repeated measures study. *Child Abuse and Neglect, 19*(9), 1145-1155.

Mead, R., & Cummins, R. (2010). *What makes us happy? Ten years of the Australian Unity Wellbeing Index,* 2nd ed., Australian Unity: Deakin University.

Pirkis, J. E., Burgess, P. M., Kirk, P. K., Dodson, S., Coombs, T. J., & Williamson, M. K. (2005). A review of the psychometric properties of the Health of the Nation Outcome Scales (HoNOS) family of measures. *Health and Quality of Life Outcomes, 3*(1), 76.

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.

Singer, M.I., Anglin, T.M., Song, L.Y. & Lunghofer, L. (1995). Adolescents' exposure to violence and associated symptoms of psychological trauma. *Journal of the American Medical Association, 273*(6), 477-482.

Smith, D.W., Saunders, B.E., Swenson, C.C., & Crouch, J. (1995). Trauma Symptom Checklist for Children and Children's Impact of Traumatic Events-Revised scores in sexually abused children. Unpublished manuscript. As cited in Briere, J. (1996). *Trauma Symptom Checklist for Children: Professional Manual*. Florida: Psychological Assessment Resources Inc.

Te Pou o te Whakaaro Nui (2016). *HoNOS Guide for New Zealand Clinicians*. New Zealand: Auckland. Retrieved from https://www.tepou.co.nz/resources/honos-guide-for-new-zealand-clinicians/762.

Appendix D: Staff Interview Schedule

Questions are marked as having being asked only in 2018, only in 2019 or in both 2018 and 2019 interviews.

Program Characteristics

Evidence Strength and Quality

- (2018 & 2019) What kind of information or evidence are you aware of that shows whether the intervention (programs individually and/or the service as a whole) will work in your setting?

Adaptability

- (2018) What kinds of changes or alterations do you think you will need to make/have made already to the intervention (any of the 4 programs or service as a whole), so it will work effectively in your setting? Can you expand further?
- (2019) Who will decide (or what is the process for deciding) whether changes are needed to the intervention so that it works well in your setting?
- (2019) Is there a specific procedure or documentation of the changes made to programs?
- (2019) Has there been any changes to monitoring treatment fidelity. If so, can you expand further?
- (2019) How often is fidelity of the program being assessed? Can you think of specific areas of improvement being made in the past 6 months?
- (2019) Are there components that has been adapted? Are there components that should not be altered? Examples.

[Applies to Aboriginal parents/carers/families/communities]

- (2019) Can you tell me what you know about Aboriginal people and communities kinship structure, roles and responsibilities. What did you do with this knowledge? How has this knowledge impact LINKS/ working with LINKS clients?

- (2019) Do you think the program took into account the needs of extended family and kinship carers?

- (2019) What did you do to incorporate the involvement/ buy-in of about Aboriginal people and communities? Can you give me some examples.

- (2019) What were some keys lessons learnt/best practices when working with Aboriginal people and communities?

- (2019) How do you build and maintain strong relationships with different communities or the Elders of the community or representatives of the community?

Complexity

- (2018) How complicated is the intervention (programs individually and/or the service as a whole) to deliver to families?

Design Quality and Packaging

- (2018) What supports, such as online resources, training, supervision, coaching, program guidelines, fidelity score feedback, marketing materials, or a toolkit, are available to help you implement and use the intervention?
- (2019) What is your perception of the quality of the supporting materials, packaging, and bundling of the intervention for implementation? What else is needed

Outer Setting

Patient needs and resources

- (2018 & 2019) What barriers do the individuals served by your organisation face to participating in the intervention?
- (2019) Have you elicited information from participants regarding their experiences with the intervention?
- (2019) What kinds of information and materials about the intervention are planned initial intake of clients? Carers?
- (2019) At exit/close to exit, what kinds of information, training or materials (if any) about the intervention are planned for clients? Carers?

[Applies to Aboriginal parents/carers/families/communities]

- (2019) What were some issues/barriers you have encountered or have to consider when working with Aboriginal people and communities? Or when you first approach them prior to the start of LINKS?
- (2019) To what extent were the needs and preferences of the individuals served by your organization considered when deciding to implement the intervention?
- (2019) What kinds of information and materials about the intervention are planned for initial intake of clients? Carers?

- (2019) At exit/close to exit, what kinds of information, training or materials (if any) about the intervention are planned for clients? Carers?

Peer Pressure
- (2018) Can you tell me what you know about any other organisations that have implemented the four programs or other similar programs?

Inner Setting

Structural Characteristics
- (2018 & 2019) How will the infrastructure of your organisation (social architecture, age, maturity, size, or physical layout) affect the implementation of the intervention (programs individually and/or the service as a whole)?
- (2019) What kinds of infrastructure changes will be needed to accommodate the intervention

Acceptability
- (2018 & 2019) What are the barriers to successful implementation of the LINKS service?
- (2019) What has changed in the past 6-9 months?

Networks and Communication
- (2018) How do you typically find out about new information such as new initiatives, accomplishments, issues, new staff, staff departures?
- (2019) When you need to get something done or to solve a problem, who are your "go-to" people?

Culture
- (2018) How do you think your organisation's culture (general beliefs, values, assumptions that people embrace) will affect the implementation of the intervention?
- (2019) To what extent are new ideas embraced and used to make improvements in your organization? Referral/training/adaptations to programs etc?

Implementation Climate
- (2018) What is the general level of receptivity in your organisation to implementing the intervention?

Tension for change
- (2018) How essential is this intervention (programs individually and/or the service as a whole) to meet the needs of the individuals served by your organisation or other organisational goals and objectives?
- (2019) How do you feel about current programs/practices/process that are available related to the intervention? What are its strength and weaknesses?

Compatibility
- (2018) Was the program (programs individually and/or the service as a whole) a good fit for the families/children in your service? In what ways did it fit/not fit? (consider the things the family values, and the routines they have – was the program a good fit with those?)
- (2019) How well does the intervention fit with existing work processes and practices in your setting? Has there been new changes?
- (2019) Can you describe how changes will be integrated into current processes?

Relative Priority
- (2019) Describe activities or initiatives that (appear to) have highest priority for you (for the organization)?
- (2019) How will you juggle competing priorities in your own work? How will your colleagues juggle these priorities?
- (2019) To what extent are program goals monitored for progress? Expand.

Organisational Incentives and Rewards
- (2018) What kinds of incentives or special recognition/events are there to help ensure that the implementation of the programs is successful?

Goals, governance and Feedback
- (2018) Have you/your unit/your organisation set goals related to the implementation of the intervention? To what extent are organisational goals monitored for progress?
- (2018) How does the governance of LINKS operate? What's working well and what are the challenges in relation to governance?
- (2018) Do you get any feedback about your work? in what form? Reports? Informal?
- (2019) To what extent does your organization/unit set goals for current programs/initiatives

Readiness for Implementation
Organisational readiness/evidence-based interventions
- (2018 & 2019) Which of the four programs did you find the most appropriate for the presenting family needs?

Feasibility
- (2018) Was it feasible to implement the LINKS service (or specific programs) based on the resources available?
- (2018) What were the barriers?
- (2018) Facilitators?

Leadership and engagement
- (2018) What level of involvement has leadership at your organisation had so far with the implementation of LINKS?

	• (2019) What kind of support or actions can you expect from leaders in your organization to help make implementation successful?

Available Resources
Organisational processes in place
• (2018) Could you tell us more about the LINKS referral processes?
• (2019) What are some of the barriers? What has been done to overcome them?
• Could you tell us more about the training and support that has been provided for the LINKS staff?
• (2019) Is this new?
• (2018) Could you tell us more about the training and support that has been provided for the LINKS staff?
• (2018) Could you tell us more about the processes related to decisions around program allocation?

Staff
Skilled staff
• (2018) What staff and type of skills are needed to provide supports to families participating in the LINKS service?
• (2018 & 2019) Do you expect to have sufficient resources to implement and administer the program?

Access to Knowledge and Information
• (2018 & 2019) What kind of training have you already received? What kind of training is planned for you? For colleagues?

Characteristic of Individuals

Knowledge and Beliefs about the Intervention
• (2019) At what stage of implementation is the intervention at in your organization?
• (2018 & 2019) Do you think the intervention will be effective in your setting? Why? Why not?

Self-efficacy
• (2018) How confident are you that you will be able to successfully implement the intervention (programs individually and/or the service as a whole)?

Process

Planning
• (2018) What have you done to implement the intervention (programs individually and/or the service as a whole)?
• (2019) What role has your plan for implementation played during implementation?

Formally Appointed Internal Implementation Leaders
• (2018) Who leads the implementation of the intervention? Who else is involved with leading the implementation?

Intervention Participants
• (2018) How do you or your colleagues communicate to the individuals that are served by your organisation about the intervention (programs individually and/or the service as a whole)?

Executing
• (2018 & 2019) Has LINKS been implemented according to the implementation plan?

Reflecting and Evaluating
Evaluation framework & data collection processes
• (2018 & 2019) Could you tell us more about the LINKS data collection process processes? (could be survey, electronic, yarning, data-sharing with allied health workers).
• (2018) To what extent do you think LINKS is meeting families' and children's needs?
• (2018 & 2019) What parts of the program do you think where most helpful/had most impact for families and children
• (2018 & 2019) What have been the least helpful things about the LINKS for the families and children who have been involved with the program? What could have been improved? What changes ae needed to make it better for families and children?
• (2018 & 2019) Do you receive feedback about the implementation or the intervention itself? How to you receive this feedback? Reports? Etc…
Appropriateness
• (2018 & 2019) What activities covered in the programs (programs individually and/or the service as a whole) are the most/least helpful for the families?
Cultural appropriateness [Applies for Aboriginal parents/carers/families]
• (2018) To what extent do the programs take account of families' and children's cultural needs?
• (2018) Do you think the program is culturally appropriate?
• (2018) What more could be done to take account of families' and children's cultural needs?

How will you assess progress towards implementation or intervention goals?
Sustainability
• (2018 & 2019) Overall, do you find this program sustainable in the long run? What can be improved?

Appendix E: Carer Interview Schedule

a. General background questions
• How long have you and your family been receiving support through LINKS?
• How did you find out about LINKS and what were you hoping to get out of it for you and your family?
• How much input did you have regarding your involvement in LINKS?
• What did you think about the information you received about the program before you started? (was it enough? Is the program what you expected from the information you were given?)
b. Fidelity
• What support/help did you and your child get from LINKS? What did LINKS workers do with or for you and your child? How did they work with you (in home, showing you new skills, talking to you, etc)
• How often did you/your child meet with LINKS staff? How many times per week/month? For how long?
• What types of activities did you/your child do with LINKS staff during sessions?
c. Acceptability & Appropriateness
• Was the program a good fit for you and your family? In what ways did it fit/not fit? (consider the things the family values, and the routines they have – was the program a good fit with those?)
• Is this program different to other support (if any) you have received in the past for your child?
• If yes, what was different?
• To what extent did the LINKS program meet your and your child's needs?
• What parts of the program do you think where most helpful/had most impact for you and your child?
• What were the least helpful things for you when you were involved with the program? What could have been improved? What changes ae needed to make it better for you/your child?
• [For Aboriginal parents/carers] To what extent did the program take account of your/your child's cultural needs? (prompt for – did you receive support through Aboriginal staff, do you think the program is culturally appropriate) What more could have been done to take account of your/your child's cultural needs?
• What did you think of the program staff? What about the relationships between the therapist and your child?
d. Outcomes

• In what ways did the LINKS program help you and/or your child? What has changed as a result of the program?
• As a result of your participation in the LINKS program, what was the most important (significant) change that occurred in your family (for your and/or your child)?
• Why is this change important to you/or people involved?
• What difference has this change made or will make in the future?
• How much say did you and your child have in setting your goals? (On a scale from 0 to 5)
• How much input do you think you had over what was worked on? (5 meaning complete control; 0 meaning no control at all)
• And how much input do you think your child had over what to work on? (5 meaning complete control; 0 meaning no control at all)
• To what extent did you/your child achieve your/their goals?

e. Feasibility
• Do you have any suggestions for improvement in LINKS?
• Would you recommend this program to other families? Why/why not?
• Did you experience any difficulties accessing the service, or consider stopping treatment early? If so, what were the issues and how could we improve the service?

Appendix F: Interview questions for additional resource use – LINKS economic data collection

1. Overall, has taking part in LINKS cost you/CYP any money?

No__ Yes__ ⟶ If yes, about how much in total did it cost you to participate in LINKS? $_____

2. Have you accessed any other services or supports while you/CYP has been involved in LINKS?

No___ Yes___. If yes, please specify the support/services (e.g. psychologist, counsellor) that you/CYP accessed during the time you/CYP was involved in LINKS_____. How much in total did it cost you to use these support/services $ _____

Appendix G. Fidelity checklist for TF-CBT

Therapist Identifier:_____

TF-CBT Treatment Component	Session #:	1	2	3	4	5	6	7	8	9	10
	Date:	/	/	/	/	/	/	/	/	/	/
Caregiver participation: Therapist met (face-to-face or via telephone) with caregiver for 15 minutes or longer.											
P: Therapist provided psycho-education (e.g. directive education about the traumatic event, normal reactions to trauma, etc.; education to instill hope)											
General info re: abuse, trauma; specific info re: trauma child experienced (GE) and the child's reactions to his/her personal experience of the trauma											
Common emotional, behavioral, and physiological responses.											
Info about child's symptoms and diagnosis.											
Description of components of TF-CBT, session structure, treatment length											
Engaged family (e.g. found out what child liked, what motivates the family, etc.)											
P: Therapist provided parenting skills (e.g. praise, selective attention, time out, contingency reinforcement plans) ask parent about their reactions to the child's traumatic experience											
R: Therapist explained the physiology of relaxation and rationale for relaxation techniques; instructed on methods of relaxation											
Discuss ways that relaxation skills can help child with trauma reactions (GE); suggest that child use relaxation skills when they have trauma reminders											
A: Therapist assisted child in accurately identifying their feelings, and various ways of regulating their emotions (e.g. imagery, thought stopping, positive self-talk)											
Accurately identify and express a variety of feelings (positive and negative, in youth's words) (e.g. feelings brainstorm, Color My World, etc.)											
Link feelings to situations, body and facial expressions											
Teach how to rate intensity levels of emotions (e.g. SUDS, feeling thermometer)											

Teach skills of managing emotions and difficult affective states (e.g. positive self-talk, enhancing child's sense of safety, etc.)									
Teach skills to identify/cope with array of feelings associated with trauma **(GE)**									
C: Therapist reviewed skill of cognitive coping									
Educate child on the distinction and relationship between thoughts, feelings and actions (e.g. acknowledge internal dialogues; introduce cognitive triangle)									
Help the child generate alternative thoughts that are more accurate or helpful, in order to feel differently; discuss how to apply to real life									
T: Therapist worked on a trauma narrative (TN) the child **(GE)**									
Introduce rationale for TN; initiate TN (e.g. title page, timeline/table of contents)									
Encourage child, in calibrated increments, to include more details of trauma									
Re-read the TN at the beginning of *each* session **(GE)**									
Ask about and add in thoughts and feelings throughout the TN									
Include worst memory/worst moment									
Use cognitive processing techniques to modify distortions throughout the TN									
Include piece on making meaning (e.g. what they've learned, how they grew)									
As TN develops, read each new draft to supportive caregiver in collateral sessions									
I: Therapist developed in-vivo desensitization plan to resolve generalized avoidant behaviors									
C: Conjoint child-parent session: sharing trauma narrative with parent/caregiver									
Prepare caregiver and child separately for joint session in which TN is shared									
Hold joint session (e.g. re-read TN, model praise, discuss questions prepared by both child and caregiver, praise and celebrate progress made)									
E: Therapist addressed child's sense of safety (e.g. safety skills and safety plan)									
Teach personal safety skills and assertive communication; increase awareness									

Teach problem-solving skills and/or social skills as needed by the child											

TF-CBT Treatment Component	**Session #:**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
	Date:	/	/	/	/	/	/	/	/	/	/
Caregiver participation: Therapist met (face-to-face or via telephone) with caregiver for 15 minutes or longer.											
P: Therapist provided psycho-education (e.g. directive education about the traumatic event, normal reactions to trauma, etc.; education to instill hope)											
General info re: abuse, trauma; specific info re: trauma child experienced **(GE)**											
Common emotional, behavioral, and physiological responses.											
Info about child's symptoms and diagnosis.											
Description of components of TF-CBT, session structure, treatment length											
Engaged family (e.g. found out what child liked, what motivates the family, etc.)											
P: Therapist provided parenting skills (e.g. praise, selective attention, time out, contingency reinforcement plans)											
R: Therapist explained the physiology of relaxation and rationale for relaxation techniques; instructed on methods of relaxation											
Discuss ways that relaxation skills can help child with trauma reactions **(GE)**											
A: Therapist assisted child in accurately identifying their feelings, and various ways of regulating their emotions (e.g. imagery, thought stopping, positive self-talk)											
Accurately identify and express a variety of feelings (positive and negative, in youth's words) (e.g. feelings brainstorm, Color My World, etc.)											
Link feelings to situations, body and facial expressions											
Teach how to rate intensity levels of emotions (e.g. SUDS, feeling thermometer)											
Teach skills of managing emotions and difficult affective states (e.g. positive self-talk, enhancing child's sense of safety, etc.)											
Teach skills to identify/cope with array of feelings associated with trauma **(GE)**											
C: Therapist reviewed skill of cognitive coping											
Educate child on the distinction and relationship between thoughts, feelings and actions (e.g.											

acknowledge internal dialogues; introduce cognitive triangle)											
Help the child generate alternative thoughts that are more accurate or helpful, in order to feel differently; discuss how to apply to real life											
T: Therapist worked on a trauma narrative (TN) the child **(GE)**											
Introduce rationale for TN; initiate TN (e.g. title page, timeline/table of contents)											
Encourage child, in calibrated increments, to include more details of trauma											
Re-read the TN at the beginning of *each* session **(GE)**											
Ask about and add in thoughts and feelings throughout the TN											
Include worst memory/worst moment											
Use cognitive processing techniques to modify distortions throughout the TN											
Include piece on making meaning (e.g. what they've learned, how they grew)											
As TN develops, read each new draft to supportive caregiver in collateral sessions											
I: Therapist developed in-vivo desensitization plan to resolve generalized avoidant behaviors											
C: Conjoint child-parent session: sharing trauma narrative with parent/caregiver											
Prepare caregiver and child separately for joint session in which TN is shared											
Hold joint session (e.g. re-read TN, model praise, discuss questions prepared by both child and caregiver, praise and celebrate progress made)											
E: Therapist addressed child's sense of safety (e.g. safety skills and safety plan)											
Teach personal safety skills and assertive communication; increase awareness											
Teach problem-solving skills and/or social skills as needed by the child											

Citation: Deblinger, Cohen, Mannarino, Murray, & Epstein (2008).

Appendix H. Fidelity checklist for EMDR

Items originally sourced from "A guide to the standard EMDR Protocols for clinicians, supervisors and consultants' (Leeds, 2016). Response codes from Lee et al. (under review)

EMDR Therapy Fidelity Rating Scale for Reprocessing Session			
Subject Code		Date of Session:	
Rater:		Date of Review:	
Comments:		Average Rating:	

Rating Scale: No Adherence: 0, Weak: 1, Good: 2

Reevaluation Phase average score (items 1–4):		
Assessment Phase average score (items 5–14):		
Desensitization Phase average score (items 15–28):		
Installation Phase average score (items 29–34):		
Body Scan Phase average score (items 35–38):		
Closure Phase average score (items 39–45):		
Reevaluation Phase				
1	Did the clinician reevaluate the subject's experience since the last session with attention to feedback from the log, presenting complaints, responses to current stimuli, and additional memories or issues that might warrant modifications to the treatment plan? (This is crucial after history-taking sessions as well as after stabilization and reprocessing sessions.) 0 – Clinician never or minimally elicited subject's progress on these areas. 1 – Clinician elicited subject's progress on these areas in an incomplete or fundamentally flawed manner (e.g. spending an hour on this activity, eliciting lots of irrelevant information, failing to fully explore relevant issues). 2 – Clinician elicited subject's progress on these areas well.	0	1	2
2	Did the clinician check the SUD and VoC on the target from the last session? (*Skip if this is the first reprocessing session.*) 0 – Clinician checks neither SUD nor VoC. 1 – Clinician checks either SUD or VoC. 2 – Clinician checks both SUD and VoC.	0	1	2

3	Did the clinician check for additional aspects of the target from the last session that may need further reprocessing? (*Skip if this is the first reprocessing session.*) *Examples include: "When you think of that image, what's the worst part of it now?" or "Has that image or any related thoughts or feelings been bothering you since we last met?"* 0 – Clinician never explored this. 1 – Clinician explored this in an incomplete or fundamentally flawed manner (e.g. asked "Have you been getting any flashbacks?") 2 – Clinician explored this well.	0	1	2
4	If the target from the last session had been incomplete or if in this session the subject reported the SUD were now a 1 or above or the VoC were a 5 or below, did the clinician resume reprocessing on the target from the last session? (*Skip if this is the first reprocessing session. If the client has multiple traumas and after reprocessing the SUDS is a 2 or even a 3, it may be more appropriate to target a more disturbing or related memory or earlier memory, then select this as the next target.*) 0 – Reprocessing was evidently incomplete but the clinician did not remain focused on this target (i.e. chose a new target, ended the session). 1 – Reprocessing was evidently incomplete but clinician chose to focus on an associated memory. 2 – Reprocessing was evidently incomplete and clinician chose to remain focused on this target.	0	1	2
Reevaluation Phase average score (items 1–4): Possible total of four items. Three items (2, 3, and 4) can be skipped before reprocessing sessions have begun				

	Assessment Phase			
5	Did the clinician select an appropriate target from the treatment plan? 0 – No target was selected. 1 – Selected target was irrelevant to presenting problems and case formulation OR was fundamentally flawed in some way (e.g. was not a sensory event). 2 – Selected target was relevant and appropriate.	0	1	2
6	Did the clinician elicit a picture (or other sensory memory) that represented the entire incident or the worst part of the incident? 0 – Clinician did not elicit a sensory representation of the event. 1 – Clinician elicited a sensory representation of the event in a fundamentally flawed way (e.g. selected multiple representations at once, chose the most tolerable sensory representation). 2 – Clinician elicited and chose an appropriate sensory representation of the event.	0	1	2

7	Did the clinician elicit an appropriate negative cognition (NC)? 0 – NC is not obtained or is suggested by clinician and does not appear to resonate with subject. 1 – NC is missing a couple of essential elements. 2 – NC is derived from the subject and is self-referencing, presently held, accurately focuses on presenting issue, generalizable, is a true cognition (i.e. not a feeling, like "I am frustrated") and has affective resonance.	0	1	2
8	Did the clinician elicit an appropriate positive cognition (PC)? 0 – PC is not obtained or is suggested by clinician and does not appear to resonate with subject. 1 – PC is missing a couple of essential elements. 2 – PC is derived from the subject and is self-referencing, in the same theme as the NC, accurately focuses on desired direction of change, generalizable, is a true cognition (i.e. not a feeling, like "I am happy"), is realistically adaptive and $1 < VoC < 5$.	0	1	2
9	Did the clinician assure that the NC and PC address the same thematic domain: responsibility, safety, choice? 0 – NC and PC are in different thematic domains. 1 – NC and PC did not clearly address the same thematic domain. 2 – NC and PC clearly addressed the same thematic domain.	0	1	2
10	Did the clinician obtain a valid VoC by referencing the felt confidence of the PC in the present while the subject focused on the picture (or other sensory memory)? 0 –VoC is absent or invalid (i.e. $VoC < 1$ or $VoC > 5$). 1 – Valid VoC obtained but not while focused on image or other sensory memory OR invalid VoC obtained while focusing on image or other sensory memory. 2 – Valid VoC obtained while focusing on image or other sensory memory.	0	1	2
11	Did the clinician elicit the present emotion by linking the picture and the NC? 0 – Did not elicit the present emotion (or physiological response). 1 – Elicited present emotion (or physiological response) from the image or the NC but not both. 2 – Elicited present emotion (or physiological response) from both the image and the NC.	0	1	2

12	Did the clinician obtain a valid SUD (i.e. the current level of disturbance for the entire experience	0	1	2
	0 – Did not obtain a SUD.			
	1 – SUD obtained but not valid (i.e. SUD <= 2 during a 1st processing session, although continuing with a SUD <= 2 may be appropriate during a reprocessing session).			
	2 – Valid SUD obtained on present emotion (or physiological response).			
13	Did the clinician elicit a body location for current felt disturbance?	0	1	2
	0 – Did not elicit a body location for current disturbance.			
	1 – Elicited a vague body location for current disturbance.			
	2 – Elicited body location for current disturbance.			
14	Did the clinician follow the standard assessment sequence listed above? NB suds can be done on emotion or body location.	0	1	2
	Note: Although some leeway on the standard sequence is acceptable during this phase, the sequence of eliciting is the Image -> NC -> PC -> VoC -> Emotion -> SUD -> Location is recommended			
	0 – Did not follow the sequence ie did not link get check an NC to a target image			
	1 – Mostly followed the sequence			
	2 – Followed the essential sequence			
	.			
	Assessment Phase average score (items 5–14): Total of 10 items.			
	Desensitization Phase			
15	Before beginning bilateral eye movements or alternate bilateral stimulation, did the clinician instruct subject to focus on the picture, NC (in the first person), and the body location?	0	1	2
	0 – Did not instruct subject to focus on any of these areas.			
	1 – Clinician instructed subject to focus on 1 or 2 items (image or sensory memory, NC and body location).			
	2 – Clinician instructed subject to focus on all 3 items (image or sensory memory, NC and body location).			

EMDR Therapy Fidelity Rating Scale for Reprocessing Session				
16	Did the clinician provide bilateral eye movements or alternate bilateral stimulation of at least 24 to 30 repetitions per set as fast as could be tolerated comfortably? (*Note*: Children and adolescents and a few adult subjects require fewer passes per set, e.g. 14–20.)	0	1	2
	0 – Did not administer any bilateral eye movements or alternate bilateral stimulation (EM/ABS) or offered a speed of stimulation that was significantly too slow or far too few repetitions, e.g. only 12saccades.			
	1 – Most times, most sets missing an essential element of EM/ABS somewhat too slow or somewhat too few saccades.			
	2 – Most times, most sets were at least 24 EM/ABS of relatively constant and sufficient speed, width and direction.			

17	During bilateral eye movements or alternate bilateral stimulation, did the clinician give some periodic nonspecific verbal support (perhaps contingent to nonverbal changes in subject) while avoiding dialogue?	0	1	2
	0 – Gave no nonspecific verbal support or was overly directly with specific feedback or excessive dialogue during most sets (i.e. spoke during >50% of the set).			
	1 – Gave limited nonspecific verbal support or only slightly overly specific feedback or excessive dialogue during some of the sets (i.e. <50% of the set).			
	2 – Most time, most sets, avoided excessive dialogue and specific feedback and did offer nonspecific verbal support (i.e. if subject is not emotional, at least 1 comment per set. If subject is emotional, then more frequently).			
18	At the end of each discrete set of bilateral eye movements or alternate bilateral stimulation, did the clinician use appropriate phrases to have the subject, "Rest, take a deeper breath, let it go"(while not asking the subject to "relax") then make a *general* inquiry ("What do you notice now?") while avoiding narrowly *specific* inquiries about the image, emotions, or feelings?	0	1	2
	0 – Used inappropriate phrases after most sets (i.e. >50% of the set).			
	1 – Used inappropriate phrases after some sets (i.e. <50% of the set).			
	2 – The clinician used appropriate phrases for all three items after most sets, most of the time (i.e. deep breath instruction, general inquiry, avoided specific inquiry).			
19	After each verbal report, did the clinician promptly resume bilateral eye movements or alternate bilateral stimulation without excessive delay for discussion and without repeating subject's verbal report?	0	1	2
	0 –Encouraged excessive verbal reporting or needlessly repeated subject's comments after some sets (i.e. >50% of the sets).			
	1 – Often resumed EM/ABS without repeating the subject's verbal report and without promoting excess verbiage (i.e. <50% of the sets).			
	2 – Completed the above most of the time, after most sets.			
20	If verbal reports and nonverbal observations indicated reprocessing was effective, after reaching a neutral or positive channel end, did clinician return attention to the selected target and check for additional material in need of reprocessing (i.e. "What's the worst part of it now?")?	0	1	2
	0 – Subject was never asked a question similar to "Recall the original incident. What do you notice now?" after reaching a neutral or positive end without evidence of strengthening.			
	1 – After five or more consecutive sets of EM/ABS reporting neutral or positive experiences without evidence of strengthening, only then was the subject asked a question similar to "Recall the original incident. What do you notice now?"			
	2 – After two consecutive sets of EM/ABS reporting neutral or positive experiences without evidence of strengthening, subject was asked a question similar to "Recall the original incident. What do you notice now?"			

21	If verbal reports or nonverbal observations indicated reprocessing was ineffective, did the clinician vary characteristics of the bilateral eye movements or alternate bilateral stimulation (speed, direction, change modality, etc.)? (*Skip if not applicable.* Counts as two items if applicable.) 0 – After 3-4 consecutive sets of eye movements reporting no change in a memory, belief, emotion, or body location, clinician never made a valid variation of the EM/ABS. 1 – After 3-4 consecutive sets of eye movements reporting no change in a memory, belief, emotion, or body location, clinician made a valid variation of the EM/ABS. 2 – After two consecutive sets of eye movements reporting no change in a memory, belief, emotion, or body location, clinician made a valid variation of the EM/ABS	0 0	1 1	2 2
22	If verbal reports or nonverbal observations indicated reprocessing was ineffective, did the clinician do any of these? *(Skip if not applicable.* Counts as two items if applicable.) 1. Explore for an earlier disturbing memory with similar affect, body sensations, behavioral responses, urges, or belief. 2. Explore for a blocking belief, fear or concern disrupting effective reprocessing, and then identify a related memory. 3. Explore target memory for more disturbing images, sounds, smells, thoughts, beliefs, emotions, or body sensation. 4. Invite subject to imagine expressing unspoken words or acting on unacted urges. 5. Offer one or more interweaves. 0 – After two consecutive sets of eye movements reporting no change in a memory, belief, emotion, or body location, clinician did not try any of these strategies. 1 – After two consecutive sets of eye movements reporting no change in a memory, belief, emotion, or body location, clinician didn't persist in using one of the above strategies (i.e. tried one strategy but subject still blocked, and didn't try a second strategy). 2 – After two consecutive sets of eye movements reporting no change in a memory, belief, emotion, or body location, clinician effectively used one or more of these strategies.	0 0	1 1	2 2

23	If subject showed extended intense emotion, or if reprocessing was ineffective, did clinician show appropriate judgment in selecting and offering one (or if necessary more) interweave(s) from among the categories of responsibility, safety, and choices while avoiding excess verbiage? *(Skip if not applicable.* Counts as two items if applicable.) *Note: Intense, extended emotion includes a single behaviour (e.g. crying, hyperventilating, trembling, turning red) that is present for an extended time (i.e. >6 minutes). Ineffective processing is when the subject reports exactly the same experience (e.g. emotion, thought, image, or body disturbance) OR a repetitive set of responses (i.e. looping) after two or more successive sets.* 0 – Clinician did not use an interweave where appropriate. 1 – Interweave was offered in an incomplete or fundamentally flawed manner (e.g. interweave took ten minutes to deliver, interweave was not from domains of responsibility, safety, choice). 2 – An interweave from the domains of responsibility, safety or choice was offered in an appropriate way.	0 0	1 1	2 2
24	If subject showed extended intense emotion, did the clinician continue sets of bilateral eye movements or alternate bilateral stimulation with increased repetitions per set, remain calm, compassionate, and provide verbal cueing paced with the bilateral stimulation to encourage the subject to continue to "just notice" or "follow"? *(Skip if not applicable.* Counts as two items if applicable.) *Note: Intense, extended emotion includes a single behaviour (e.g. crying, hyperventilating, trembling, turning red) that is present for an extended time (i.e. >6 minutes).* 0 – Clinician did not increase repetitions per set or give calm, compassionate, and encouraging verbal cueing. 1 – Clinician either increased repetitions per set until emotional behaviour noticeably decreased OR gave limited calm, compassionate, and encouraging verbal cueing (but not both). 2 – Clinician increased repetitions per set until emotional behaviour noticeably decreased AND gave multiple calm, compassionate, and encouraging verbal cueing per set.	0 0	1 1	2 2

| 26 | If an earlier (antecedent) memory emerged, did the clinician continue bilateral eye movements or alternate bilateral stimulation on the earlier memory, and if this earlier memory becomes resolved then did the clinician redirect the subject back to the target memory. Alternatively did the clinician make a clinically informed decision to help the subject to contain this material until a later date due to concerns that the subject was not ready to confront this material? *(Skip if not applicable.)*If earlier memory *did not* require immediate containment:

0 – Clinician did not offer EM/ABS until memory was resolved OR redirect subject's attention to target. Instead the clinician immediately redirected subject to the original target.

1 – Clinician offered EM/ABS for a series of sets of EM/ABS after which the subject reported neutral or positive experiences, but they never redirected subject's attention back to the original target. Alternatively, clinician redirected subject's attention to the original target without resolving the antecedent memory even though time remained to do so.

2 – Clinician offered EM/ABS until the subject reported neutral or positive experiences and if time remained then redirected the subject's attention to back to the original target.

If earlier memory *did* require prompt containment (this may not be evident immediately):

0 – Clinician never advised the subject about the option to contain this material and did not explore with the subject whether to address this earlier material now or wait until a later date when they feel more ready to confront it.

1 – Clinician delayed their advice to the subject to contain this material until a later date and the subject subsequently requested to stop reprocessing after confronting the earlier memory. Alternatively, they promptly advised the subject to contain this material without giving the subject the option of continuing, or may not have stated when they would return to it or the reasons for doing so.

2 – Clinician explored with the subject the option to contain this material until a later date when they are able to confront it and the subject elected to contain it. | 0 | 1 | 2 |
| 27 | If it became clear it was not possible to complete reprocessing in this session, did clinician show appropriate judgment to avoid returning subject's attention to residual disturbance in target, skip Installation and Body Scan Phases, and go directly to closure? (*Skip if not applicable.*)
Note: Clinicians should make this decision within 10 minutes of the session ending. This decision is informed partly by clinical judgment and partly by the subject's reported SUD upon rechecking the target after two sets of their reporting positive or neutral experiences. The aim is to ensure that subjects are oriented to the present and are given enough time to diminish any residual anxiety and distress before leaving the session.
Reprocessing evidently could not be completed in this session and:

0 – The clinician never made any decision in order to end the session effectively and continued reprocessing right up to the end of the session.

1 – The clinician made some decisions in order to end the session effectively, however these were delayed, incomplete, rushed, or otherwise fundamentally flawed. (e.g. beginning part of the installation | 0 | 1 | 2 |

	phase first and then going directly to closure; not reserving sufficient time for closure based on the client's needs). 2 – The clinician went directly to closure phase without returning the subject's attention to the residual disturbance in target.			
28	If it appeared from spontaneous subject reports that the Desensitization Phase may have been complete, did clinician show appropriate judgment to return subject's attention to target to confirm the SUD was 0 or 1 by offering at least one more set of bilateral eye movements or alternate bilateral stimulation on the target before going to the Installation Phase? (*Skip if not applicable.*) *Target was checked (e.g. by asking, "Recall the original incident. What do you notice now?") AND:* 0 – Appropriate SUD was not obtained before moving onto Installation Phase. 1 – Appropriate SUD was obtained but not rechecked after a second set of EM/ABS before moving onto Installation Phase. 2 – Appropriate SUD was obtained and rechecked after (at least) a second set of EM/ABS before moving onto Installation Phase.	0	1	2
	Desensitization Phase average score (items 15–28): Up to eight items can be skipped. Fourteen items, plus four can be doubled.			

EMDR Therapy Fidelity Rating Scale for Reprocessing Session			
Installation Phase			
If the Desensitization Phase was completed (and item 28 was scored) proceed to score Installation Phase items. If the Desensitization Phase was incomplete, skip both the Installation and Body Scan Phases and proceed to score the Closure Phase. However, if the desensitization was incomplete and the clinician incorrectly proceeded to the Installation or Body Scan Phases, these phases should be scored and down rated accordingly.			
29	Did the clinician confirm the final PC by inquiring whether the original PC still fit or if there were now a more suitable one? 0 – Clinician did not check to see if a better PC could be elicited and merely began Installation with the the original PC . 1 – Clinician inquired about the a better PC but began the Installation Phase with a final PC that did not match full criteria for a PC or that was not a good fit for the subject. 2 – Clinician checked to see if a better PC could be elicited began the Installation Phase with a final PC that the subject agreed was suitable and that fully matched criteria for a PC.	0	1	2

30	Before offering bilateral eye movements or alternate bilateral stimulation, did the clinician obtain a valid VoC (i.e. by having subject assess the felt confidence of the PC while thinking of the target incident)? 0 – Subject was never prompted for a VoC. 1 – Subject was not instructed to think about the target incident before providing a VoC for the PC. Alternately, EM/ABS began before subject gave a valid VoC. 2 – Subject was instructed to think about target incident before providing a VoC for the PC (and before being administered the EM/ABS).	0	1	2
31	Did the clinician offer more sets of bilateral eye movements or alternate bilateral stimulation after first asking each time that the subject focus on the target incident and the final PC? 0 – Subject was not given a series of EM/ABS Alternately, subject was never instructed to focus on both the target incident and the PC between each set of EM/ABS. 1 – Subject was instructed to focus on either the target incident or the PC (but not both) between sets EM/ABS. 2 – Subject was instructed to focus on both target incident and PC between sets of EM/ABS.	0	1	2
32	Did the clinician obtain a valid VoC after each set of bilateral eye movements or alternate bilateral stimulation? (or alternated with question 'Did the belief get stronger weaker or stay the same?') 0 – Clinician failed to obtain a valid VoC after more than half of all EM/ABS sets. 1 – Clinician obtained a valid VoC after more than half but not all EM/ABS sets. 2 – Clinician obtained a valid VoC after all EM/ABS sets.	0	1	2
33	After sets of bilateral eye movements or alternate bilateral stimulation, if the VoC did not rise above 5 did the clinician inquire what prevents it from rising to a 7 and then make an appropriate decision to target the thought or move to body scan or closure? (*Skip if not applicable.*) 0 – Clinician did not make the inquiry as per above. 1 – Clinician made an inquiry and accepted the subject's rationale for the VoC remaining below a 6 without targeting the rational with further EM/ABS. 2 – Clinician made the inquiry as per above and appropriately targeted the thought or moved to Body Scan / Closure.	0	1	2
34	Did the clinician continue sets of bilateral eye movements or alternate bilateral stimulation until the VoC was a 7 and no longer getting stronger (or a 6 if "ecological")? (*Skip if not applicable.*) (*Note either item 33 or 34 should be scored unless there were [a]insufficient time to complete the Installation Phase or [b]a new issue emerged that prevented completing the Installation Phase.*) 0 – The completion of the Installation Phase did not involve the use of VoCs. 1 – The completion of the Installation Phase involved the incomplete or fundamentally flawed use of VoC's (e.g. ending with a single VoC of 7,). ending with two successive VoC's of 5 2 – The completion of the Installation Phase occurred via obtaining VoCs of 6 or 7 after two successive sets of EM/ABS.	0	1	2

	Installation Phase average score (items 29–34): Up to two items can be skipped. Possible total six items.	

	Body Scan Phase			
35	Did the clinician obtain a valid body scan (asking subject to [a] report any unpleasant sensation while focusing on [b] the final PC and [c] the target incident with eyes closed)? 0 – No body scan was conducted. Or the subject was asked to think about negative details from the sensory memory, emotions or physical sensations 1 – A body scan was conducted, but subject was not instructed to focus on *both* the final PC and the target incident. 2 – Subject was instructed on all major components of body scan.	0	1	2
36	*If any unpleasant sensations were reported,* did the clinician continue with additional sets of bilateral eye movements or alternate bilateral stimulation until these sensations became neutral or positive? If unpleasant sensations were reported and bilateral stimulation was not offered, was there an appropriate clinical rationale (i.e. linkage to a different memory)? *(Skip if not applicable.)* *Unpleasant sensations were reported and:* 0 – No additional sets of EM/ABS were offered and no appropriate clinical rationale was present. 1 – Additional sets of EM/ABS were offered and were discontinued before the subject reported neutral or positive experiences after two successive sets. 2 – Additional sets of EM/ABS were offered and were discontinued after the subject reported neutral or positive experiences after two successive sets. Alternatively, No additional sets of EM/ABSs were offered but an appropriate clinical rationale was present.	0	1	2
37	*If a new memory emerged*, did the clinician make an appropriate decision to continue by targeting the new memory in the session or later as part of the treatment plan? *(Skip if not applicable.)* *Note: The new memory must be an eligible target (i.e. it must relate to presenting problems and have some distressing content).* *A new memory emerged and:* 0 – The clinician neither targeted it in session (i.e. starting from Phase 3) nor explained to the subject that it may be best to target it later in treatment. 1 – The clinician either targeted it in session (i.e. starting from Phase 3) or explained to the subject that it may be best to target it later in treatment, however the decision made was not well-informed by the session's remaining time or the nature of the memory. 2 – The clinician either targeted it in session (i.e. starting from Phase 3) or explained to the subject that it may be best to target it later in treatment. This decision was well-informed by the session's remaining time and the nature of the memory.	0	1	2

38	*If pleasant sensations were reported*, did the clinician target these and continue with additional sets of bilateral eye movements or alternate bilateral stimulation as long as these sensations continued to become more positive? *(Skip if not applicable.)*	0	1	2
	Body Scan Phase average score (items 35–38): Up to three items can be skipped. Possible total of four items.			

	Closure Phase			
39	Did the clinician make an appropriate decision to move to closure? 0 – The Closure Phase was omitted. 1 – The Closure Phase began prematurely or was delayed. 2 – The Closure Phase was begun in a timely manner from either the successful completion of the Body Scan Phase or an appropriate premature discontinue from an earlier phase due to time or distress management constraints.	0	1	2
40	Did the clinician assure subject was appropriately reoriented to the present by (a) *assessing* subject's residual distress and to enhance orientation to the present and (b) *if needed* then offer appropriate and sufficient structured procedures (such as guided imagery, breathing exercises, or containment exercise to decrease anxiety, distress, & dissociation, 0 – Subject was not assessed for distress and clinician continued immersive discussion of the memory. When needed, interventions were not used to diminish the subject's distress. 1 – Subject was assessed for distress, but attempts at orienting them to the present and diminishing their distress were incomplete or ineffective. 2 – Subject was assessed for distress and clinician began present-oriented discussion. When needed, interventions were used to diminish subject's distress and subject reported these to be effective.	0	1	2
41	Did the clinician support mentalization by inviting subject to comment on changes in awareness, perspective, and self-acceptance related to the session just completed? 0 – No discussion about the subject's in-session experiences, the treatment trajectory, or observed improvements occurred. 1 – Some comments about the in session experiences, the treatment trajectory, or observed improvements occurred. 2 – Considered discussion about the subject's in-session experiences, the treatment trajectory, or observed improvements occurred.	0	1	2

42	Did the clinician offer empathy and psychoeducation where appropriate, and statements to normalize and help to put into perspective the subject's experience? *(Skip if not applicable.)* 0 – Subject offered experiences about the subject's experience, the treatment trajectory and or presenting problems and clinician did not respond therapeutically. 1 – Subject offered experiences about the treatment trajectory and presenting problems and clinician gave partially therapeutic responses. 2 – Subject offered experiences about the subject's experience, the treatment trajectory and presenting problems and clinician responded with empathy, normalising statements, or psychoeducation.	0	1	2
43	Did the clinician brief the subject on the possibility between sessions of continuing or new, positive or distressing thoughts, feelings, images, sensations, urges, or other memories or dreams related to the reprocessing from this session? 0 – Clinician did not brief the subject of this possibility. 1 – Clinician minimally briefed the subject of this possibility. 2 – Clinician fully (and concisely) briefed the subject of this possibility.	0	1	2

EMDR Therapy Fidelity Rating Scale for Reprocessing Session				
44	Did the clinician request that the subject keep a written log of any continuing or new issues or other changes to share at the next session? 0 – Clinician did not request that subject keep written notes of any between-session behavioral observations, insights, triggers, etc. 1 – Clinician requested that subject keep notes of between-session issues without explaining what that might look like 2 – Clinician requested that subject keep notes of between-session issues in a complete manner, e.g. explaining that they could be about behavioral changes, responses to triggers, new insights, new memories, positive dreams or nightmares.	0	1	2
45	Did the clinician remind the subject to practice a self-control procedure daily or as needed? 0 – Clinician did not remind the subject to practice self-control procedures. 1 – Clinician reminded subject to practice self-control procedures in an incomplete or fundamentally flawed manner. 2 – Clinician reminded subject to practice self-control procedures.	0	1	2
Closure Phase average score (items 39–45): Total of seven items. One item #42 may be skipped.				