Evaluating trauma-informed care: child sexual abuse

by

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Abstract

The goal of the thesis is to contribute to advancements in the field of trauma-informed care in, particularly for individuals with a significant history of childhood adversity. This was conducted in three ways:

- Chapter 2 is original research, and an intended article, describing results from a mixed-method study using both quantitative and qualitative data analysis techniques. This study evaluated long-term treatment outcomes for a trauma-informed multimodal residential treatment facility for child sexual abuse survivors called Little Warriors (https://littlewarriors.ca/). Child sexual abuse is common in our society and innovative treatment approaches are needed to combat adverse health consequences. Using an existing database from Little Warriors, a combination of parametric as well as non-parametric quantitative analyses found significant long-term improvements in anxiety, depression, PTSD, and quality of life. From the qualitative thematic analysis of caregiver responses, several gaps related to treatment were identified such as more support needed to help retention, moral injury, and secondary traumatic stress.
- Chapter 3 is original research, and an intended article, building off the mixed-methods paper described in chapter 2. This study specifically details the methodology for the innovative hybrid webinar/focus group used to engage caregivers of child sexual abuse survivors ethically and effectively. The COVID-19 pandemic added to difficulties in participant recruitment/engagement in child psychiatric studies, so we used a novel approach which took advantage of video conferencing technology and anonymous question and answer functions. The result was a positive engagement with a total of 20 participants. Key features identified in the qualitative thematic analysis included things such as more support needed for families during intake day of treatment enrolment, making sure that caregivers’ concerns or questions are sufficiently answered throughout

intervention rounds, and also the availability of emotional support if families terminate treatment early.

- Chapter 4 is original research, and an intended article, describing the results from a scoping review related to reflective functioning in caregiver-child dyads. Emotional regulation is a key health determinant in child psychiatry and a related proxy measure, reflective functioning, was systematically mapped out to understand areas of research focus as well as areas that have been neglected in the literature. This study was initiated to investigate unique factors that contribute to holistic wellness in caregiver-child dyadic health, which align with key principles of trauma-informed care. A scoping review of the literature published up until September 2021 was completed: focusing on studies sampling parents of children 36 months of age or under. A variety of reflective functioning assessment and intervention studies were identified focusing primarily on mother-child dyads in the general population. 0 studies included measurements on gender identity and no studies were conducted in low to middle income countries.

Across these three chapters, the thesis attempts to demonstrate the benefits of trauma-informed care across several settings and several populations. This work has relevance for improving treatment outcomes in child and adolescent psychiatric interventions, improving caregiver-child dyadic health outcomes, and moving towards a culture of care that is more compassionate and ultimately more inclusive for those with a history of significant adversity.

Preface

This thesis is an original work by Jonathan Jin. The project received research ethics approval from the University of Alberta Human Research Ethics Committee (Ethics review number: Pro00113683). Due to the paper-based format of this thesis, there is some repetition across chapters.

The thesis research conducted was in collaboration with academic psychiatrists, student colleagues, and the Little Warriors scientific advisory committee (each co-author respectively listed in following sections below). The main conceptualization, analysis, and write-up for each manuscript was conducted by Jonathan Jin. Dr. Andrew Greenshaw is the senior author for all manuscripts and he was heavily involved with giving regular feedback throughout the thesis.

- Chapter 2 was submitted for publication in 2022 as: Jin, J., Smith-MacDonald, L., Al-Shamali, H., Reeson, M., Pazderka, H., Li, X., Polzin, W., Wei, Y., Silverstone, P., & Greenshaw, A. (submitted). Multimodal treatment for sexual abuse survivors: Mixed-methods results indicate benefits for children and caregivers. JMIR Formative Research.
- Chapter 3 was submitted for publication in 2022 as: Jin, J., Al-Shamali, H., Reeson, M., Silverstone, P., Pazderka, H., Wei, Y., & Greenshaw, A. (submitted) Innovative recruitment using a hybrid webinar/focus group format: Caregiver-child dyads in child sexual abuse. Clinical Child Psychology and Psychiatry.
- Chapter 4 was submitted for publication in 2022 as: Jin, J., Goud, R., Al-Shamali, H., Dzunic, A., Lyons, T., Reeson, M., Pazderka, H., Dennett, L., Polzin, W., Wei, Y., Silverstone, P., & Greenshaw, A. (submitted). Early Mental Health Foundations: a Scoping Review of Reflective Functioning in Caregiver-Child Dyads. Journal of the Canadian Academy of Child and Adolescent Psychiatry.
- The following two manuscripts were also written by Jonathan Jin, but they are not included in this thesis.
    - Chapter 5 was submitted for publication in 2022 as: Jin, J., Burback, L., Greenshaw, A., & Winkler, O. (submitted). Commentary: Coercion in psychiatry: Lessons learned from trauma informed care. The Canadian Journal of Psychiatry.

- Chapter 6 was submitted for publication in 2022 as: Winkler, O., Burback, L., Greenshaw, A., & Jin, J. (submitted). Shifting to trauma informed care in inpatient psychiatry: a case study. Psychiatry Research Case Reports.

Each chapter concludes with a reference list related to that specific chapter. A comprehensive bibliography is included at the end of the thesis.

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Chapter 1. Introduction

1.1 Adverse Childhood Experiences (ACEs)

Adverse Childhood Experiences (ACEs) often lead to early life trauma that can have lasting negative impacts on health and wellbeing (Boullier & Blair, 2018). The first systematic investigation of ACEs was conducted at Kaiser Permanente's San Diego health appraisal clinic by Felitti and colleagues (1998). Felitti and colleagues were interested in understanding the long-term relationship of ACEs to prominent medical and public health problems. This is a study that used a retrospective and prospective design to ask survey questions about the long-term impact of abuse and household dysfunction with later life outcomes such as disease risk factors, quality of life and mortality rate. The categories of abuse were grouped by psychological abuse, physical abuse and sexual abuse. Household dysfunction categories were grouped by substance abuse in the home, mental illness in the family, mother being treated violently and criminality. The total sample size was 8506 persons with a mean age of 56.1 (52.1% women and 79.4% Caucasian). The main results for this study were that 52% experienced one or more ACEs, and 6.2% experienced four or more ACEs. For persons reporting any single category of ACEs, their probability of experiencing another ACE was 65-93% (median: 80%). In a logistical regression model that controlled for age, gender, race and educational attainment, there was a significant relationship ($p<.05$) between number of ACEs and the following diseases: ischemic heart disease, cancer, chronic bronchitis or emphysema, history of hepatitis or jaundice, skeletal fractures, and poor self-rated health.

Following the Kaiser Permanente study, several systematic reviews were published in the last decade with questions focusing on the link between ACEs and a variety of other health-related topics (Kalmakis et al., 2015; Huang et al., 2015; Kajeepeta et al., 2015; Hughes et al., 2017; Petrucelli et al., 2019).

1.2 Child Sexual Abuse (CSA)

Within the broad category of ACEs, childhood sexual abuse (CSA) is of particular interest for the present thesis. CSA is generally defined as unwanted sexual contact between a child and an adult. It can include oral, vaginal, and/or anal penetration with a penis, digits, or foreign objects, forced sexual touching, and non-contact sexual abuse (Pulverman et al., 2018).

CSA is common with estimates of 7.9% in boys and 19.7% in girls (Stoltenborgh et al, 2011). Complications of CSA include things such as increased suicide risk as well as multiple other psychological, behavioural, sleep and sexual issues (Chen et al., 2010; Maniglio, 2009). One of the challenging aspects of CSA is the vast under-reporting, where data suggest over 95% of cases are never disclosed to authorities (Martin & Silverstone, 2013). Post-traumatic stress disorder is common among the poor long-term outcomes of CSA survivors and they are often linked to feelings of shame and isolation (Schönbucher et al., 2012).

1.3 Trauma-informed care

In light of the significant degree of heterogeneity in trauma histories and associated symptom presentations, trauma-informed care offers an approach that seeks to recognize and understand how individuals' past adversity can inform their current presentation–and by extension, how they are best treated in light of their respective definition of individual safety.

This sociological approach was initially intended for trauma-affected populations, but the applications are much broader in terms of benefits for those suffering from past relational stress, stereotypes, racial injustices, attachment disruptions, emotional dysregulation, and adversity in general (Hales et al., 2019). Emphasis in trauma-informed care is placed on how to arrive at the impression of another, as opposed to what the final impression ought to be. Trauma-informed care principles use things such as active and ongoing coaching, debriefings, engagement across multiple levels of the healthcare sector such as managers and clinicians and nurses, to help individuals be more curious and have a non-judgmental stance when engaging with patients (Huang et al., 2015). For example, if a clinician in the emergency department saw an older gentleman who was acting aggressively, violently, and erratically, trauma-informed care calls for the clinician to take a step back and try to understand how this individual arrived here in the first place. Specifically, this will involve asking questions about their history and making sure that they feel safe and not threatened (since the aggression and erratic behaviour may be indicating that the patient feels a sense of present danger).

In terms of outcome studies, systematic reviews have evaluated quantitatively and qualitatively how trauma-informed care reduced injuries and is beneficial for engaging with patients (Bryson et al., 2017; Hall et al., 2016). Trauma-informed care may be applicable to multiple settings, yet a gap remains in terms of broad and practical evaluation in such settings.

1.4 Little Warriors

Little Warriors is an example of a facility that uses trauma-informed care principles (https://littlewarriors.ca/). This residential facility uses a one-year long multimodal treatment approach for CSA survivors. There are four rounds of treatment on site and outpatient support is provided in between rounds when children (ages 8-12) and adolescents (ages 13-16) go back home. Cohort approaches are used throughout the full program to ensure that children and adolescents are able to form bonds with each other. The camp-like environment on site allows children and adolescents to access a variety of fun and recreation programming as well as targeting specific therapeutic approaches (200 hours of direct therapy and also 80 hours of therapeutic support as an outpatient are offered). Significant improvements in PTSD, anxiety, depression, quality of life, and self-esteem, and resilience have been found after two weeks of treatment (Reeson et al., 2020).

1.5 Thesis aim

The thesis seeks to fill the gap by evaluating the benefit of trauma-informed care across a variety of settings. The flexible nature of trauma-informed care principles and its implications across caregiver-child dyads and CSA survivors will be discussed. Results from this thesis will inform policy and assist in improving the lived experience of children, adolescents, and their respective families.

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Introduction to Chapter 2

There is limited evidence for treatments in child psychiatry, child sexual abuse (CSA) in particular. Trauma-informed care offers guiding principles on how to optimally engage with individuals with a history of significant abuse and trauma. One facility called Little Warriors (https://littlewarriors.ca/) in Edmonton, Alberta uses a trauma-informed multimodal treatment approach over a year long program for CSA survivors. Key trauma-informed principles of collaboration and building trustworthiness through cohort approach are integral to the design of Little Warriors. This program has demonstrated positive preliminary results, but a gap remains in long-term outcomes as well as the role of caregivers as a determinant for treatment outcomes. The present mixed-method study seeks to fill the gap by evaluating long-term outcomes of children in the multimodal treatment program at Little Warriors as well as to understand attitudes and opinions of caregivers of the children and adolescents enrolled in the program.

Chapter 2. Multimodal treatment for sexual abuse survivors: Mixed-methods results indicate benefits for children and caregivers

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Abstract

Background: Childhood sexual abuse (CSA) is a key health area that needs new and innovative treatment options for both caregivers and children. Although there are few existing treatment options for the CSA survivors, there have been studies targeting interventions for children's mental health issues as well as for caregiver-child dyads. For CSA survivors, there is some recent evidence for the effectiveness of multimodal treatment. However, no prior study has identified long term findings over the full year of programming in a multimodal program and there has been no analysis of the role of caregivers in treatment outcomes.

Objective: The aim of this study was to evaluate the effectiveness of a complex multimodal treatment program for CSA survivors. The secondary aim was to qualitatively evaluate the attitudes and opinions of caregivers.

Methods: Children (CSA survivors) completed quantitative self-report surveys before and after each of the four treatment rounds in a comprehensive year long program (n=15). 86.7% identified as female and 13.3% identified as transgender (mean age 10.2 ± 1.6). Measures included validated self-report surveys related to anxiety, depression, PTSD, quality of life, and self-esteem. Changes in mean outcome scores were analyzed for statistical significance. Caregivers of CSA survivors participated in two innovative hybrid webinar focus groups with staff at a residential treatment facility (n=11). Sessions were recorded, transcribed, and thematically analyzed.

Results: For CSA survivors, statistically significant improvements were observed on PTSD, depression, anxiety, and quality of life. For caregivers of CSA survivors, 20 participants contributed to the data and three themes arose from our thematic analysis: (1) Challenges of starting and maintaining treatment, (2) Therapeutic benefits of specialized treatment, and (3) Barriers and facilitators of treatment.

Conclusions: The present mixed methods study supports the effectiveness of a complex multimodal program designed for CSA survivors in terms of improving children's mental health outcomes as well as supporting caregiver well-being. Future studies are warranted with a larger sample size to replicate these preliminary long-term findings. Several benefits and gaps in wellness support arose during our thematic analysis.

Keywords: child sexual abuse; caregivers; mixed-methods; PTSD; trauma.

2.1 Introduction

Adverse Childhood Experiences (ACEs) may lead to early life trauma that can have lasting negative impacts on health and wellbeing (Boullier & Blair, 2018). The first systematic investigation of ACEs was conducted at Kaiser Permanente's San Diego health appraisal clinic by Felitti, Anda and colleagues with 8506 persons in the first wave of sampling (Felitti et al., 2019). Felitti and colleagues were interested in understanding the long-term relationship of ACEs to prominent health problems. The main results indicated that 52% of the study population experienced one or more ACEs, and 6.2% experienced four or more ACEs. A higher number of ACEs was correlated with multiple health risk factors later in life, such as ischemic heart disease, cancer, and chronic lung disease. After the Kaiser Permanente study, systematic reviews were recently published as a follow up focusing on the effects of multiple ACEs on health outcomes (Hughes et al., 2017; Petruccelli, 2019).

Within the broad category of ACEs, childhood sexual abuse (CSA) is a key health area within child psychiatry. CSA is generally defined as unwanted sexual contact between a child and another individual. It can include oral, vaginal, and/or anal penetration with a penis, digits, or foreign objects, forced sexual touching, and non-contact sexual abuse (Pulverman et al., 2018). CSA is common with estimates of 19.7% in girls and 7.9% in boys (Stoltenborgh et al., 2011). Complications of CSA include increased suicide risk and multiple other psychological (i.e., Post-traumatic stress disorder (PTSD), anxiety, depression), behavioural, sleep, and sexual issues (Chen et al., 2010; Hailes et al., 2019; Maniglio, 2009). One of the challenging aspects of CSA is under-reporting, evidence suggests over 95% of cases are never officially disclosed (Martin and Silverstone, 2013). PTSD is a common long-term outcome of CSA survival and this often intersects with feelings of shame and isolation (Schönbucher et al., 2012).

It is well recognized that for children and adolescent psychiatric assessments, individual characteristic data may have limited predictive value – consequently, in many cases, a primary focus of assessment is around caregiving relationships (Dulcan, 2021). Caregiver-child dyadic relationships are important because they are where the child begins to grow in a social world, finds secure attachment, buffers stress, begins to form mental representations, learns to be autonomous, and attains a sense of self-worth (Lo et al., 2019). Caregiver-child interactions can be measured in the clinical setting with a combination of structured interviews, checklists, and questionnaires (Lotzin et al., 2015). For individuals who have experienced sexual abuse from an adult, the ability to form these trusting relationships may necessarily be hampered.

Caregiver stress has been studied in a variety of health domains and it can negatively influence the wellbeing of a child (Rees et al., 2019). For example, a recent meta-analysis found that parental stress was associated with behavior problems in children (Barroso et al., 2018). The COVID-19 pandemic has also placed an additional burden on families with children (de Figueiredo et al., 2021). Although the dyadic health burden is being recognized, there are still limited assessment study data available for CSA survivors. This gap in knowledge is reflected in a dearth of literature regarding high-quality treatment options for child psychiatric patients as reflected in a recent Cochrane review (James et al., 2020).

Despite the limited literature on existing treatment options for the CSA survivors, there have been studies targeting interventions for children's mental health issues as well as for caregiver-child dyads. For example, a Cochrane review concluded that cognitive behavioral therapy (CBT) is superior to no treatment for childhood and adolescent anxiety disorders (James et al., 2020). However, despite evidence suggesting that CBT is superior to usual care or alternative treatments, such as a solution focused therapy, (Creswell et al., 2017), the parent intervention SPACE (Supportive Parenting for Anxious Childhood Emotions) (Lebowitz et al., 2020), child centered therapy (Silk et al., 2018), counseling (Murphy et al., 2017), nondirective supportive therapy (Reigada et al., 2015), and ABMT (Attention Bias Modification Treatment) (Cheung, 2016; Salum et al., 2018) or medication, evidence overall is limited and inconclusive (Macdonald et al., 2016). Based on this Cochrane review, it is not well understood whether or not there is a single therapeutic intervention that can be successful for all children or youth, and little is known from comparisons of single interventions with multimodal approaches (i.e., combining and delivering multiple therapies together). The multimodal framework uses broad principles from social and cognitive learning theory and it is distinct from other unimodal approaches such as person-centered therapy which is entirely conversational (Lazarus, 2019). Sánchez-Meca and colleagues conducted a meta-analysis investigating optimal treatment approaches for child and adolescent mental health disorders and found some evidence to support multimodal approaches for this population (Sánchez-Meca et al., 2011).

For CSA survivors, in particular, there is recent evidence for the benefit of multimodal treatments in the Little Warriors program, at the Be Brave Ranch (Reeson et al., 2020). However, no prior analysis has identified long term findings over the full year of programming and there has been no analysis of the role of caregivers in treatment outcomes. Mixed-methods approaches may support a more comprehensive picture of caregiver-child dyadic interactions and quality of caregiving relationships can be assessed when both quantitative as well as qualitative data are collected (Nataliya and Wingo, 2018). This leads to the research question for this mixed-methods study: “What is the impact of a one-year comprehensive multimodal treatment for CSA survivors as well as caregivers?” By using measurements for both children and caregivers, we can better understand how to support the wellness of family units affected by CSA.

2.2 Methods

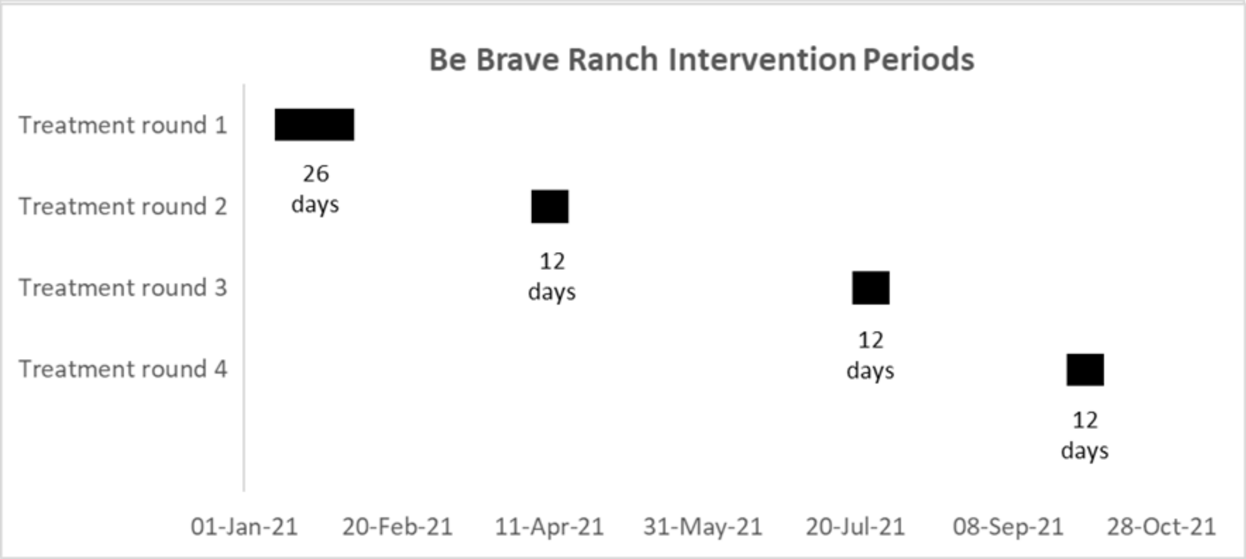
2.2.1 Overall Study Design

There were two components to this study: The primary objective of the study was to quantitatively assess the effectiveness of a novel multimodal one-year long treatment program for CSA survivors in terms of improving mental health outcomes. The secondary objective was to assess the qualitative attitudes and opinions of caregivers of CSA survivors in relation to treatment programming.

2.2.1.1 Program response in CSA survivors

This aspect of the study design comprised baseline measures for pre-treatment and post-treatment measures for four intervention rounds. The first pre-treatment measure in round one was the true baseline, where children had no exposure to interventions. The first round of treatment for the children is 26 days and the subsequent three are 12 days on-site (approximately at the 3, 6 and, 9 month marks after their first visit) with outpatient support available in between treatment rounds. Figure 1 shows an example timeline of a cohort going through the year long treatment.

Figure 1. Gantt chart of an example cohort’s four treatment rounds (in black) at the Be Brave Ranch treatment programming over one year. The spaces in between rounds represent children back at home receiving outpatient support.



2.2.1.2 Qualitative attitudes and opinions of caregivers of CSA survivors

For this aspect of the study design, to collect anonymized responses of a convenience sample of caregiver attitudes and opinions we used an innovative hybrid webinar/focus group approach (Jin et al., 2022). This approach offered an ethical way to engage with caregivers of CSA survivors, a highly sensitive population, and provided them with benefits in the form of information on future advancements in clinical programming. This approach also had the added advantage of letting individuals join virtually, allowing them to engage from a safe environment, and cost-effectiveness for individuals for whom distance would be a barrier to engaging. No monetary incentives were given due to limited resources. Data were captured using the question and answer (Q&A) function on Zoom webinars, so anonymity of participants was protected. To maintain a continuous flow in conversation throughout the sessions, the researcher posed questions to the staff for their opinions during times when caregiver responses were not being discussed. Discussion was facilitated by a research team member and two staff members from Little Warriors. Discussion prompts were adapted, in part, from key areas outlined in the Alberta Quality Matrix for Health (Cowell et al., 2012):

(1) What has been working for you and your child?

(2) What hasn’t been working for you and your child?

(3) What can we do to improve?

(4) How was the intake process for you? Easy? Difficult?

(5) What did you/your child find most helpful in the time at Little Warriors?

2.2.2 Participants

2.2.2.1 Children in treatment

Children and adolescents who were admitted to the treatment program underwent an initial screening interview conducted by a staff member at Little Warriors. The criteria below are already put in place for program intake at the Little Warriors treatment facility. These criteria were selected so that children can perform necessary self-care for daily living and can have the best chance of completing the full treatment program. Participants for the child program are required to:

(1) Have a history of child sexual abuse

(2) Be aged 8-12

(3) Perform self-care necessary for daily living

(4) Have an IQ > 80 as determined by previous assessments

(5) Be medically stable and compliant with medications

(6) Disclose abuse to at least one adult/caregiver in the past

(7) Have a family member/caregiver identified and involved

(8) Complete a readiness assessment

Exclusion criteria for children include:

(1) Severe mental health issues such as suicide attempt, history of psychosis, self-harm, homicidal thoughts/actions, violent behaviors, and significant eating disorder

(2) A significant runaway risk

(3) Serious behavioral problems

(4) Significant drug or alcohol use

(5) A history of sexual violence toward others

(6) Police interactions

(7) Unstable medical conditions

2.2.2.2 Caregivers of CSA survivors

Caregivers of CSA survivors (parents/guardians) in this study were fluent in English (based on observation when a staff team member assesses this at the time of intake), able to provide consent, and were caring for children who were enrolled in the Be Brave Ranch treatment program at Little Warriors. No other criteria were placed on caregivers, since the research team were interested in hearing a diversity of attitudes and opinions from this group.

2.2.3 Ethics approval

The current study was reviewed and fully approved by the University of Alberta Human Research Ethics Committee (Ethics review number: Pro00113683).

2.2.4 Treatment program

The Little Warriors Be Brave Ranch program is a comprehensive, intensive, one year-long treatment for children and adolescents (Reeson et al., 2020). The primary program objective is to improve long-term outcomes for children aged 8 to 12 who have suffered from CSA. The Little Warriors facility is set up as a camp-like facility which allows children and adolescents to access a variety of fun and recreation activities as well as targeting specific therapeutic approaches. The program also uses a cohort model to allow children and adolescents to form bonds with each other as well as protecting against isolation and shame, which can be a major obstacle for long-term treatment outcomes in this population (Kealy et al., 2018). This program offers more than 200 hours of direct therapy and also 80 hours of therapeutic support as an outpatient.

The treatment program includes an initial 26 day treatment program on site with three more treatment rounds on site over the span of one year (Figure 1). There is outpatient treatment support available for families in between treatment rounds. A multimodal evidence-based treatment approach (Reeson et al., 2018) is used which includes therapies such as trauma focused cognitive behavioral therapy (tf-CBT), yoga, arts, crafts, animal interactions, music, art therapy, and eye movement desensitization and reprocessing (EMDR).

2.2.5 Data collection

2.2.5.1 Children in treatment

The present study collected data from all four rounds of treatment for the comprehensive one-year program at Little Warriors between June 2020 to December 2021. Assent was obtained from children. Children completed self-report surveys on tablets at initial admission and at discharge for each treatment round. Surveys ask about basic demographic environmental questions, and several validated child psychiatric outcome measures including the Child Post-Traumatic Stress Disorder Symptom Scale (CPSS), Revised Child Anxiety and Depression Scale (RCADS), the Rosenberg Self-Esteem Scale (RSES), and a quality of life measure called the KIDSCREEN-10. All data collected were anonymized by a third-party server and provided to a research team member for secondary independent analysis.

2.2.5.2 Outcome measures

The Child Post-Traumatic Stress Disorder Symptom Scale (CPSS) is a 17-item self-report validated scale for children and adolescents to measure PTSD (Foa et al., 2001). The CPSS asks questions that are aligned with the Diagnostic and Statistical Manual of Mental Disorders IV (DSM-IV) (Nixon et al., 2013). This measure uses a 4-point Likert scale that ranges from 0 (not at all) to 3 (5 or more times per week). Higher scores indicate more functional impairment. CPSS scores were collected before and after each of the four treatment rounds.

The Revised Child Anxiety and Depression Scale (RCADS) is a 25-item self-report validated scale to measure anxiety and depression in children and adolescents (Chorpita et al., 2013; Klaufus et al., 2020). The RCADS asks questions to assess anxiety and depression in a manner aligned with the DSM-IV. Items are scored on a four point Likert scale ranging from 0 (never) to 3 (always). Higher scores indicate greater severity in anxiety or depression levels. RCADS scores were collected before and after each of the four treatment rounds.

The Rosenberg Self-Esteem Scale (RSES) is a self-report validated measure to assess self-esteem in children and adolescents (Bagley and Mallick, 2001). The RSES is composed of 10 items that uses a 4 point Likert scale running from strongly agree to strongly disagree. Higher RSES scores indicate more positive self-esteem levels. RSES scores were collected before and after each of the four treatment rounds.

Quality of life was measured with the KIDSCREEN-10 which is a self-report, validated 10-item survey for children and adolescents (Ravens-Sieberer et al., 2010). The KIDSCREEN-10 asks about various health-related quality of life questions on a 5 point scale ranging from 0 (not at all) to 4 (extremely). Higher KIDSCREEN-10 scores indicate better quality of life. KIDSCREEN-10 scores were collected before and after each of the four treatment rounds.

2.2.5.3 Caregivers of CSA survivors

Caregivers who participated in the hybrid webinar focus groups provided written responses to prompts given in the Q&A portion of the session. Implied consent was obtained from caregivers and responses of caregivers were anonymized and attitudes were captured via the Zoom webinar Q&A function. The two hybrid webinar focus groups were conducted in English in November 2021 and lasted approximately one hour each. Encrypted Zoom links were distributed by staff at Little Warriors and recordings were saved in a secured online file which is only accessible by research team members.

2.2.6 Children's quantitative data analysis

Intervention effects can be attributed to two elements in this context. First, the therapeutic environment of the program may have some effect. Second, any effect of one of the four treatment interventions may or may not have a carry-over effect. Optimally, cumulative effects of consecutive interventions or treatment rounds, would be reflected in increasing benefit, or sustained benefit. With that in mind, we tested cumulative intervention effects, comparing pre-post measures across four treatment rounds. Any effect of the therapeutic milieu may be revealed by comparing the initial baseline to subsequent baseline and post-treatment measures. Given the limited sample size and preliminary nature of the study, we conducted both parametric and non-parametric analyses of the data. We opted for both of these approaches conservatively, as non-parametric analysis is independent of any data distribution assumptions. We decided to compare the initial baseline (taken at intake) to the pre-treatment and post-treatment measures.

A critical value of $P=.05$ was used for all aspects of quantitative analyses in this study. Only those participants who had complete data sets were included in the analyses.

2.2.6.1 Parametric analysis

A within-subjects repeated measures one-way analysis of variance was initially conducted across measures assessed at baseline (B1) and subsequent pre-treatment round measures (B2, B3, B4). One-tailed paired t-tests were used for individual comparisons.

The primary outcome measure was the CPSS. A cut-off score of 16 was used for the CPSS as a benchmark to separate the children who were in the subclinical-mild range and those who were above it. Normative data on CPSS scores were 11.02 (4.52) for boys and 11.84 (4.50) for girls (Stewart, 2012).

The present analysis included data from children who scored above 16 on the CPSS, which is the recommended cut-off to identify PTSD derived from a sample of children in hospitals following a single-incident trauma as well as children diagnosed with PTSD in traumatic stress clinics (Foa et al., 2001). The results for this subgroup of higher scoring primary outcome measure CPSS children were subject to further analysis on secondary outcome measures which were the RCADS, RSES, and KIDSCREEN-10.

2.2.6.2 Non-parametric analysis

Non-parametric analysis followed an equivalent data analysis plan whereby Friedman's two-way analysis of variance was used to compare overall effects for baseline, pre and post treatment data. Wilcoxon signed-rank tests were used for individual comparisons.

2.2.7 Caregivers' qualitative thematic analysis

A qualitative thematic analysis was used to evaluate the attitudes and opinions of caregivers at Little Warriors. Two research team members analyzed the anonymized data. The two recorded sessions were transcribed, and thematically analyzed using Braun and Clarke's method (Braun and Clarke, 2006). Qualitative data analysis was systematically used to identify, analyze, and summarize themes in detail. Initial coding of transcripts was completed by two independent team members (JJ and HA) using an inductive approach, which ensured inter-rater reliability and conformability (Nowell et al., 2017; Lincoln and Guba, 1985). Inductive open codes were combined into preliminary themes and a larger team (AJG, PHS, YW, LSM) was engaged in an additional round of analysis on deductive coding that was guided by the study objectives. Regular meetings were scheduled for team discussion, code verification, resolution of discrepancies in coding, and confirmation of final themes in the thematic analysis. An audit trail of memos was used to verify decisions about themes and to maintain credibility as well as rigor throughout the thematic analysis (Koch 1994). Data saturation was determined with the two sessions as no new data were substantively being added to the thematic analysis (Fusch and Ness, 2015).

2.3 Results

2.3.1 Children's quantitative data demographics

20 subjects had complete datasets and of that number, we only analyzed those scoring over the cut-off score of 16 on the CPSS, for a final of n=15. The average age (years) of the children at admission was 10.2 ± 1.6. Among the sample, 13 children (86.7%) identified as female and two

(13.3%) identified as transgender. Further details regarding the demographics can be found in Table 1. Only statistically significant improvements are reported for each of the five outcome measures below.

Table 1. Demographics for children's data analyzed.

Demographics	n=15
Mean age (years)	10.2 ± 1.6
Median grade year	5
Gender:	
Female	13 (86.7%)
Transgender	2 (13.3%)
Identify as:	
Visible minority	1 (6.7%)
LGBTQ2+	3 (20.0%)
Person with disability	0
None of the above	3 (20.0%)
Not answered	8 (53.3%)

Identify as Indigenous	5 (33.3%)

2.3.2 Children’s quantitative data analysis

2.3.2.1 CPSS

The mean CPSS scores for each of the four pre-treatment round measures were 32.7 ± 8.9, 25.9 ± 16.1, 19.9 ± 14.0, and 24.0 ± 15.0, respectively. The mean CPSS scores for each of the four post-treatment round measures were 26.7 ± 13.5, 22.7 ± 13.9, 20.9 ± 13.5, and 19.5 ± 13.6, respectively. Treatment over time effects were significant across pre-treatment round measures for the within-subjects repeated measures one-way analysis of variance (degrees of freedom=1; *P*=.007). Treatment over time effects were significant across pre-treatment round measures for the Friedman test (degrees of freedom=1; *P*=.02). For parametric pairwise comparisons, B to pooled B2-B4 showed significant improvements on the CPSS (*P*=.009) as well as B to pooled P1-P4 (*P*=.002). For non-parametric pairwise comparisons, B to pooled B2-B4 showed significant improvements on the CPSS (*P*=.03) as well as B to pooled P1-P4 (*P*=.015).

2.3.2.2 RCADS-D

The mean RCADS-D scores for each of the four pre-treatment round measures were 18.5 ± 7.4, 16.1 ± 9.3, 15.8 ± 10.2, and 16.4 ± 8.9, respectively. The mean RCADS-D scores for each of the four post-treatment round measures were 15.5 ± 7.8, 14.8 ± 8.9, 14.7 ± 9.2, and 13.9 ± 9.5, respectively. For parametric pairwise comparisons, B to pooled B2-B4 showed significant improvements on the RCADS-D (*P*=.03) as well as B to pooled P1-P4 (*P*=.004). For non-parametric pairwise comparisons, B to pooled B2-B4 showed significant improvements on the RCADS-D (*P*=.045) as well as B to pooled P1-P4 (*P*=.01).

2.3.2.3 RCADS-A

The mean RCADS-A scores for each of the four pre-treatment round measures were 24.7 ± 8.0, 20.5 ± 13.1, 21.1 ± 13.6, and 21.1 ± 11.8, respectively. The mean RCADS-A scores for each of the four post-treatment round measures were 23.2 ± 11.6, 19.4 ± 13.4, 18.9 ± 13.5, and 18.7 ± 12.1, respectively. For parametric pairwise comparisons, B to pooled P1-P4 showed significant improvements on the RCADS-A (*P*=.028). For non-parametric pairwise comparisons, B to pooled P1-P4 did show significant improvements (*P*=.04).

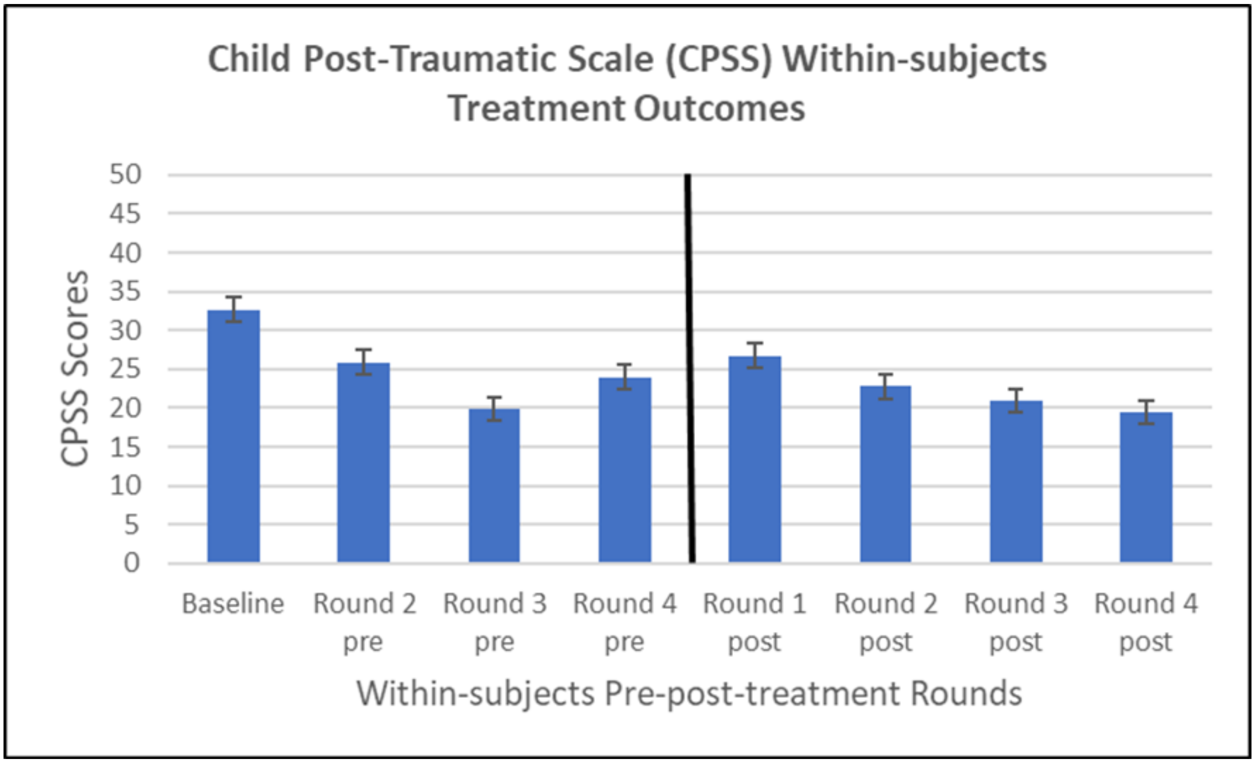
2.3.2.4 KIDSCREEN

The mean KIDSCREEN scores for each of the four pre-treatment round measures were 24.3 ± 8.6, 26.2 ± 10.9, 25.9 ± 10.5, and 25.1 ± 12.2, respectively. The mean KIDSCREEN scores for each of the four post-treatment round measures were 25.3 ± 7.4, 29.5 ± 5.2, 26.9 ± 10.4, and 27.6 ± 10.1, respectively. For parametric pairwise comparisons, B to pooled P1-P4 did show significant improvements (*P*=.02).

2.3.2.5 RSES

The mean RSES scores for each of the four pre-treatment round measures were 14.9 ± 8.3, 16.1 ± 8.6, 15.9 ± 9.4, and 15.3 ± 7.9, respectively. The mean RSES scores for each of the four post-treatment round measures were 16.6 ± 8.3, 16.9 ± 8.6, 17.0 ± 9.2, and 16.8 ± 8.6, respectively.

Table 2. Bar graph of means and standard errors for primary CPSS outcome measure in children.



2.3.3 Caregivers' qualitative data demographics

A total of 20 participants contributed to the qualitative data analyzed (Table 3). In the first hybrid webinar focus group session, five caregivers, two moderators (i.e., research team members), and two staff attended. In the second hybrid webinar focus group, six caregivers, three moderators (two of whom also attended the first session), and two staff (both of whom attended the first session) attended.

Table 3. Caregivers (N=20) that attended the hybrid webinar/focus groups.

Hybrid webinar/focus groups	Caregivers	Moderators	Staff
Session 1	5	2	2
Session 2	6	3	2

2.3.4 Caregivers' qualitative thematic analysis

The hybrid webinar focus groups conducted with two stakeholder groups, caregivers and Little Warriors staff, yielded several major themes. Themes include: (1) Challenges of starting and maintaining treatment, (2) Therapeutic benefits of specialized treatment, and (3) Barriers and facilitators of treatment. These major themes and related sub-themes are summarized in Table 3 and are presented with greater detail along with supporting quotes in the following sections. The methodology for the thematic analysis, which has been described extensively in a previous paper, and the results presented below are adapted from a previous paper (Jin et al., 2022).

Table 4. Themes and subthemes from thematic analysis of caregivers' qualitative responses.

Themes	Sub-themes
Challenges of starting and maintaining treatment	Emotional burden of intake day Staying in treatment
Therapeutic benefits of specialized treatment	Not feeling alone Feeling safe and supported Moral injury wounds

	addressed Trauma informed staff
Barriers and facilitators of treatment	Future areas to scale up Residual psychological wounds Challenges of maintaining self-care

1. Challenges of starting and maintaining treatment.

In this theme both caregivers and staff identified challenges of the children staying in treatment rounds until completion. These challenges are not surprising given the intensity of the children's trauma histories and the substantial commitment on the children to go to an unfamiliar place for several weeks away from friends and family. Sub-themes include: (1) Emotional burden of intake day and (2) Staying in treatment.

1.1 Emotional burden of intake day

Intake day was unanimously identified as an emotional day for both caregivers of Little Warriors and staff: "[I]t [intake day at Little Warriors] can be quite an emotional day as well as an exhausting day for our caregivers." (Staff, W1). There seems to be an emotional toll that many caregivers experience during intake day. Caregivers also pointed out the difficulty in saying goodbye to their child at the Little Warriors facility: "[T]he day [intake day] I had to leave him was very hard." (Caregiver, W2). One factor related to this was COVID-19 public health measures: "The drop off was hard no tour for us because it [of] COVID…" (Caregiver, W2). However, caregivers also mentioned that the burden of intake day was worth it, given how it helped their families and the fact that the interview process had adequate time: "[G]ot a call back right away. The interview was kind and empathetic, it wasn't rushed. And I felt listened to and I'm very appreciative…" (Caregiver, W2). One caregiver was relieved that there was in fact treatment available for children with a history of child sexual abuse: "[E]motional, but at the same time, felt relief, there was help out there." (Caregiver, W1). The fact that this multimodal treatment programming exists seems to offer families hope that their child can progress toward recovery even after severe early life adversity.

1.2 Staying in treatment

Since there is a high degree of heterogeneity in the Little Warriors population of child sexual abuse survivors, some families found that “[K]ids aren't quite ready for a program like the Be Brave Ranch.” (Staff, W1). These readiness factors can be internal such as “[L]ots of homesickness.” (Staff, W1) and also external in that “[D]istance can be a factor.” (Staff, W1). Some children enter treatment but they have difficulties with retention as one caregiver said: “He [child in treatment] also called me every day for the first three weeks begging me to pick him up.” (Caregiver, W2). Separating from their families in a new environment seems to be a difficulty that many children face at the start of treatment. Once again, there could be many factors associated with this as challenges could be other mental health difficulties: “[M]y daughter had to stop treatment after round two due to severe RAF, [RAD or reactive attachment disorder]…” (Caregiver, W1). Another factor included school where it is difficult to miss out on substantial schooling and falling behind peers in terms of grade level as well as emotional maturity: “[H]er peers are not familiar with hearing or seeing [the concept of voicing boundaries].” (Caregiver, W1).

2. Therapeutic benefits of specialized treatment

Other than the challenges reported by caregivers and staff mentioned above, there were also several therapeutic benefits from the multimodal treatment. In this theme, both caregivers and staff identified specific areas that provided therapeutic benefits for children at Little Warriors. Little Warriors divides children into small cohorts and uses a multimodal approach where several different types of therapies are used throughout treatment. Given the nature of this multimodal programming, the benefits experienced makes sense since children have the opportunity to gravitate toward specific treatments that they find most helpful. Sub-themes include: (1) Not feeling alone, (2) Feeling safe and supported, (3) Moral injury wounds addressed, and (4) Trauma informed staff.

2.1 Not feeling alone

Child sexual abuse can be a severely isolating experience not only for children but also for their families. The high cost of feeling isolated is associated with a response to trauma, where children believe that they are the only one affected by abuse: “I found that my daughter finally didn't feel alone. She actually said to me that until she went to the Ranch, she thought she was the only kid this happened to which never even occurred to me that she wouldn't know other kids had been through this.” (Caregiver, W1). As children come to Little Warriors and start interacting with their cohort, they realize that they are in fact not alone: “[S]o that they know that they're not alone, they're able to have those connections, and hopefully build some sustaining peer support.” (Caregiver, W2). It seems that the cohort approach helps to mitigate some of the harmful effects of child sexual abuse by creating a sense of safety and comfort for children: “So the smaller group setting was great to make her feel comfortable” (Caregivers, W2).

With the added burden of COVID-19 public health measures, children can be faced with difficulties in connecting with peers but Little Warriors has been able to still provide programming on-site with appropriate safety measures in place: “Our girl has been super lonely most times here at home. But she is now in school making a couple friends. So she is really looking forward to her socialization with her schoolmates.” (Caregiver, W2).

2.2 Feeling safe and supported

A key factor that caregivers and staff identified to achieving optimal treatment outcomes is feeling safe. Clinicians at Little Warriors emphasize giving ample time to develop and foster rapport in efforts to support children: “[T]eens have a lot of time to really build that rapport relationship with us […] and are able to slowly open up kind of out their own on their own time, which is something that isn't so available with other clinics…” (Staff, W1). It seems that having the resources to create a safe environment where children can gradually open up emotionally is important. It can be frightening and overwhelming to treatment that requires a big commitment so making sure families feel supported throughout the process and ensuring caregivers have space to ask questions is important: “[D]iscuss the progress in person, while they're awaiting kind of our care plan that we sent them after the treatment rounds. So it gives them something right away of what the kiddo has been working on. And then after the programming, it's, we always leave the door open…” (Staff, W2). Staff take efforts to fully inform families of the supportive environment by adapting tours to the COVID-19 virtual environment: “[T]hat's one piece I know through COVID that was a little tougher, just because we're limiting visitors as much as possible. But we do have that virtual tour online, which is really helpful…” (Staff, W1). Little Warriors helps to facilitate psychoeducation: “We can use a lot of the same language because the program helps even really young children talk about more mature concepts such as boundaries, mindfulness, self-care.” (Caregivers, W1). The psychoeducation allows children to bring these skills back home and to continue their relationship with their caregivers at home: “[M]y daughter was able to voice boundaries…” (Caregivers, W1).

2.3 Moral injury wounds addressed

Children who have a history of multiple and prolonged incidents of abuse have enormous stress in their lives. Coming to an unknown treatment facility with strangers can be an added stressor for children. Due to these factors, the road to recovery is a gradual process: “So we really want to give them that long period of time to just ease into it, because you can't rush that healing.” (Staff, W2). One topic that arose across caregivers was the devastating impact of shame associated with child sexual abuse that was adequately addressed in treatment: “But what really worked was strategies he was taught at the Ranch, they totally took the shame out of his pain. As he moved forward, this was one of the most important things.” (Caregivers, W2). It seems that the multimodal treatment approach was effective in addressing issues related to the construct of moral injury in terms of shame specifically. The careful attention resources dedicated to addressing psychological wounds at Little Warriors helps build resilience in children: “And it [incident of child sexual abuse] doesn't define them.” (Caregivers, W1).

2.4 Trauma informed staff

The staff at Little Warriors have specialized trauma-informed training to manage crises: “[W]e're always getting trained in different types of trainings. So […] trauma one on one, I think just the structuring of the program itself is really trauma informed…” (Staff, W2). The staff value their own mental health as well which serves as great models for the children they interact with on-site: “[O]ur staff sanctuary. So that's where the staff can go to really just ground themselves in between breaks or wherever they might have some time to do that. In addition to those debriefs, I think, I think most of the participants know this, but every fifth week, we actually don't have any children or youth on site.” (Staff, W2). It seems that having respite weeks with no treatment programming is important to maintaining the wellbeing of staff and to avoid burnout. A key principle of trauma informed care is to foster empowerment in patients which in turn sets the stage for establishing trustworthiness: “[T]he staff, they were kind, responsive, observant, understanding and still firm and what they expected from my child. programs are only as good as the staff that run it from another participant top notch therapy, caring and knowledgeable staff, again, on the clinical staff side.” (Caregivers, W2). The staff themselves are “[E]xtremely specialized in sexual abuse” (Caregivers, W1) and co-therapists such as therapy dogs were identified as being helpful: “[R]ugby [name of therapy dog] was definitely a huge benefit for my son, too.” (Caregivers, W2).

3. Barriers and facilitators of treatment

From the therapeutic benefits mentioned above, caregivers and staff reported examples of factors that hindered as well as facilitated treatment progress. In this theme, both caregivers and staff pointed out specific factors that got in the way of the treatment for their child as well as factors that need to be scaled up in the future to facilitate treatment outcomes. Factors identified in this theme related to the children's wellbeing, resources at Little Warriors, and staff. Sub-themes include: (1) Future areas to scale up, (2) Residual psychological wounds, (3) Challenges of maintaining self-care.

3.1 Future areas to scale up

Despite the enormous benefits that caregivers and staff identified at Little Warriors, there were some areas that need scaling up: "And it's [...] difficult to find some of those resources and even posts, post treatment or post program. There's still areas where this individual is acting out." (Caregiver, W1). In terms of resources, this may be addressed by re-allocation of existing resources to better support family's post-treatment or it could be related to the need for additional resources through the government: "[We want] Government funding for the Ranch." (Caregiver, W2). Ensuring that schools have counselors can be of benefit to children as they make the transition back to school post-therapy: "…[A] school counselor can help be a mending piece between a client or like a kiddo....So I found what generally when our kids are connected with a school counselor, it appears like they're more at ease with school, and they generally feel a lot more connected to their school." (Staff, W1). There were some programs that were postponed due to COVID-19, but future programming can be more inclusive of a virtual environment: "Yes, I was super excited to hear about Indigenous elder coming to the camp. But I was sad, it could not happen with [...] COVID. Yeah, so hopefully, things can open up again and have that inclusion because it does really sound valuable." (Caregiver, W2). It seems that cultural activities are valued and received well by families at Little Warriors.

3.2 Residual psychological wounds

Due to the nature of trauma in child sexual abuse, there can often be residual psychological wounds: "[W]hen we work through trauma, and in kind of going through that process, […] it can be kind of a roller coaster, right. And a lot of the times once people start kind of getting into some of that therapeutic work, it can look like a digression." (Staff, W1). It seems that treatment progress is not linear and this is not surprising given the severity of trauma these children experience. Some children may have persisting difficulties with peers: "We notice through that she's still struggling with empathy. But we hope this being her final round will help her to come around. Fingers crossed." (Caregiver, W2). Others want to leave treatment early to go back home: "[O]ur daughter wanted to go home. That was really hard, but she ended up working through it and stayed." (Caregivers, W2). In light of these interpersonal challenges, sometimes persevering through them with the support of a trauma informed staff and supportive family is the best course of action to facilitate recovery: "[W]hen there are times of her daughter calling home crying about when there was a disagreement with another cohort that they're able to work through. And the following day, they [...] would call and say that everything was fine. She was okay to stay." (Caregivers, W2). When supported well, this can be one positive step forward in making their child more resilient in the face of difficulties ahead such as going to court: "So my daughter has had to go to court… So she can trust that she can speak without fear [...] of that trust being ripped away again." (Caregivers, W1).

3.3 Challenges of maintaining self-care

Staff spend time educating what self-care is to children by clearing up misconceptions around how to practice it daily: "We have kids that think self-care can only be bubble baths. And so teaching them like no, like, there's things that you can do outside of that for self-care and getting them to internally reflect and learn how to take care of themselves, really, without relying on outside things." (Staff, W1). Staff also model self-care themselves: "[W]e debrief how the month have gone, if anything personally came up for us, we take time to engage in self-care, we have lots and lots of meetings about what had gone on that last month, what we might be able to do better next month, lots of team building…" (Staff, W2). It seems that the self-care skills that staff are trained with play an important role in protecting against things such as burnout and vicarious trauma. Through educating and modelling, staff communicate to children and families about the importance of maintaining self-care as it relates to emotional regulation as well as wellness in general: "Like we always say like cost should never affect your self-care." (Staff, W1).

2.4 Discussion

The primary objective of this study was to assess the long-term effectiveness of an evidence-based complex multimodal treatment program specifically designed to treat CSA survivors aged 8-12. Significant long-term improvements in CPSS, RCADS-D, RCADS-A, and KIDSCREEN were reported in children from our pooled analysis. These results bolster and further the initial preliminary findings showing that significant mental health outcomes were achieved from round one and round two treatment (Reeson et al., 2022). The secondary objective was to assess the attitudes and opinions of caregivers of CSA survivors. Themes from our thematic analysis complement the positive preliminary long-term findings that we found in our quantitative data analysis for the multimodal treatment program.

2.4.1 Impact of multimodal treatment on CSA survivors

The effectiveness of a multimodal treatment on CSA survivors in the present study was demonstrated as significant improvements in children were observed on the CPSS, RCADS-D, RCADS-A, and KIDSCREEN validated measures from baseline to discharge over the course of the one year long treatment. There are many variables and aspects to account for in a multimodal treatment program at a residential facility, but based on previous literature (Reeson et al., 2020) the significant improvements observed in children are likely a consequence of the multimodal approach used. For instance, recent neurobiological evidence (LeDoux & Pine, 2016; Ogden, 2021) and trauma therapies such as somatic experiencing (Levine, 2012), sensorimotor psychotherapy (Ogden and Minton, 2000), EMDR (Shapiro & Laliotism 2011), accelerated resolution therapy (Kip et al., 2012) show that a more holistic approach, inclusive of understanding the heterogeneity in responses to trauma, are promising. Be Brave Ranch does not administer all of the aforementioned therapies, but their therapeutic milieu was designed with trauma informed care principles in mind. Their choice of therapies is also multimodal which shows that there is an understanding of the benefits of body oriented therapeutic approaches as well as how trauma can affect a vast sequelae, including somatic symptoms (Corrigan and Hull, 2015). The multimodal treatment environment also allows children to explore a variety of interventions until they find one that best suits their needs. These considerations are especially important in light of the dearth of treatment options systematically studied for CSA survivors as well as the severity of long-term outcomes associated with CSA. Future research is warranted to understand the benefits of the specific aspects in the Be Brave Ranch multimodal approach.

One factor to note is the high degree of heterogeneity in the present sample of participants in treatment. Many children identified as Indigenous and this is an important consideration as Indigenous children have significantly increased risk of mental health disorders, substance use, and suicide, compared to non-Indigenous children (Lopez-Carmen et al., 2019; Nelson & Wilson, 2017). A diverse set of gender identities were also disclosed by the present study sample and this is an important consideration given recent evidence that having parents/guardians who believe in gender stereotyped attitudes can result in poor mental health outcomes for gender nonconforming children (MacMullin et al., 2021). Such challenges call for culturally appropriate, inclusive care for therapeutic approaches in CSA survivors, which is a highly sensitive population to begin with. The Substance Abuse and Mental Health Services Administration (SAMSHA) and various trauma-informed care outcome studies demonstrate the effectiveness of using trauma-informed care implementation in a variety of healthcare settings (Bryson et al., 2017; Huang et al., 2014). From their five key principles, one notable priority is creating a sense of safety. This is reflected in the multimodal approach at the Be Brave Ranch.

One of the key areas of focus in creating the therapeutic milieu as well as treatment setting was to create a safe environment. A Ranch-like setting was chosen so that children would feel welcome and be able to have the best chance of reaching recovery within a positive, supportive environment. Be Brave Ranch also utilizes a variety of diverse cultural activities such as Indigenous elder teachings and smudging. Staff are very supportive of allowing children to express their gender identities and to learn how to navigate positive interpersonal relationships.

It is interesting to note that the RSES measure did not show significant improvements, although there was a positive trend toward improvement from baseline to final discharge over the year-long comprehensive multimodal treatment. There is evidence suggesting that self-esteem becomes more stable and crystallized as you get older (Krauss et al., 2020). Also, previous literature has shown an inverse relationship between sexual abuse and self-esteem, in that adolescents with greater severity of abuse history have lower self-esteem (Okunlola et al., 2021). The deleterious effects of lowered self-esteem in CSA survivors have also been shown to have long-lasting consequences (Browne & Finkelhor, 1986). Given the severity of the average child’s trauma history in the present children sample, it is unsurprising that self-esteem did not significantly improve in the course of the one-year long treatment–although previous data have shown short term improvements in self-esteem after two weeks of treatment in the same program (Reeson et al., 2020). This finding may highlight the acute effects of treatment, but it also suggests the need for long-term follow-up and longitudinal treatment to maintain these initial positive improvements on the RSES.

2.4.2 Impact of multimodal treatment on caregivers of CSA survivors

Previous literature has found that treatment retention can be difficult when working with traumatized youth (Ormhaug & Jensen, 2018). Ormhaug and Jensen’s study found out a 25% dropout rate was predicted by lack of caregiver attendance, lower rates of youth perceived parental treatment approval, and weaker therapist-client alliance. Our findings in the theme, “Challenges of maintaining treatment,” complement these previous findings around retention as caregivers reported children often being homesick and wanting to go home without completing treatment in its entirety. These considerations highlight the importance of developing a quality caregiver-child relationship and ensuring that caregivers play an active role in treatment programming as a modifiable pathway to ultimately increase treatment retention (e.g., making regular time to call their child during treatment, and helping their children understand the importance of completing treatment). Be Brave Ranch is also actively looking to scale up and assess ways to further support caregivers, such as the Be Brave Bridge, which is an online support and psychoeducational program to help caregivers understand CSA better. When caregivers are informed, they are in a better position to support their child and to advocate for the treatment completion (Theimer et al., 2020). These are examples of how the infrastructure of Be Brave Ranch was designed to be in line with the attachment and dyadic health literature (Cooke et al., 2019; Reeson et al., 2020).

Issues related to shame are pertinent when it comes to matters of CSA. A scoping review found adverse effects of CSA-related shame on adult survivors of the health, relationships, disclosure, self-concept, and recovery (MacGinley et al., 2019). One construct that is associated with shame is moral injury (MI) (Schwartz et al., 2021; Vermetten & Jetly, 2018). Although the MI literature has focused primarily on military populations up until now (McEwen et al., 2020), they can still be helpful for laying a groundwork for understanding how MI may affect wellness in younger civilian populations with a history of significant trauma. Our findings complement previous literature in that shame can be harmful for wellness. Findings in our theme, “Therapeutic benefits of specialized treatment,” indicate that the Be Brave Ranch’s multimodal treatment programming adequately addressed feelings of shame. This is likely a consequence of creating an environment that is safe –a key principle in trauma informed care (Huang et al., 2014) Additionally, one factor that is suspected to exacerbate shame is social isolation and the cohort approach at Be Brave Ranch likely plays a contributing role to reducing shame and ensuring that CSA survivors do not feel that they are alone in their trauma (Jinkerson, 2016). Future research is warranted to assess MI specifically in both children and caregivers of CSA and to adapt existing MI interventions to child populations.

A recent review found that secondary traumatic stress in mental health professionals is prominent (Sutton et al., 2022). Protective factors included supportive supervisor relationships, strong peer support networks, having a balanced caseload, and having an organizational culture which acknowledges and validates the existence of secondary traumatic stress. It is interesting to note that secondary traumatic stress, or related terms such as vicarious trauma and compassion fatigue, were not explicitly mentioned by staff that care for CSA survivors in the present study, but self-care, however, was mentioned as a key to facilitator to staff wellness in the theme, “Barriers and facilitators of treatment.” Our findings complement previous literature on the importance of incorporating preventative self-care and integrating self-care techniques directly into clinical training programs as a quality assurance process of mental health organizations (Posluns & Gall, 2020; Rupert & Dorociak, 2019). This consideration can be one positive step toward removing barriers to treatment outcomes, as reported in our thematic analysis. Be Brave Ranch uses “refresh weeks” which are weeks of respite with no treatment programming operating and no children on site. These weeks were placed throughout the year in order to help staff debrief, engage in self-care, and incorporate a trauma informed approach in terms of supporting staff stress load (Priest & Ryke, 2020).

2.4.3 Limitations

The study presents positive preliminary findings for long-term outcomes of a multimodal treatment program. However, the quantitative results require replication and there are several limitations. First a small sample size was used so there is limited power for the quantitative results. Corrections for multiple group testing were not used so findings must not be overgeneralized. Second, one cohort of children restarted round one treatment (as a result of the COVID-19 pandemic), so they were technically outside of the year-long treatment window, indicating the confound of treatment and time. Due to the nature of the longitudinal episodic treatment, this is a limitation of children of the nature of children being in treatment. Third, self-report was used so this bias affects the accuracy of symptom assessment and treatment progress. Fourth, there are many variables across time that will have an impact on the quality of the caregiver-child relationship. Several factors are noted with one prominent one being pandemic illnesses, such as the SARS-CoV-2-pandemic, which undoubtedly has had an impact on families in this context (Köhler-Dauner et al., 2021). However, the literature is relatively sparse and needs more work, especially around the impact of both pre-pandemic and pandemic-related stressors on health outcomes. The present study did not account for large-scale disasters such as COVID-19, but the negative mental health effects on families are recognized. For instance, from a national sample in the United States in the early months of the COVID-19 pandemic, results from a study show that parents and guardians who reported higher caregiving burden also reported higher anxiety, depression, and parent perceived child stress (Russell et al., 2021). These caregiver burden, mental health, and child perception of stress associations were, in turn, significantly associated with child-parent closeness and conflict, which indicate a “spillover” effect for parents struggling with mental health problems onto their child.

2.4.4 Future Directions

Future investigation with a larger sample size is warranted. The quality of the caregiver-child dyadic relationship can also be assessed, along with other factors such as attachment, where children’s outcome data can be linked to their respective parent/guardian qualitative outcome data. Caregivers can be asked about MI specifically in order to understand how issues related to shame and guilt affect wellness in families affected by CSA. Finally, clinician-rated measures can be added to enhance the accuracy of symptom assessment. These considerations for the future will serve to verify the preliminary long-term findings found in the present study.

2.4.5 Conclusion

This mixed methods paper presents findings supporting the effectiveness of a long-term multimodal treatment program for children as well as major and minor themes that arose from qualitative thematic analysis of caregiver responses. Based on our quantitative findings, the multimodal treatment program has long-term benefits for children over the course of a one-year long treatment, but further studies with larger samples and multiple comparisons corrections tests are warranted. The qualitative thematic analysis showed that there are several strengths as well as areas of future improvement for the multimodal treatment program in the supporting specific role of caregivers. Future studies further assessing the quality of the caregiver-child relationship through interviews and focus groups as well as how to better support issues related to MI are recommended in families affected by CSA.

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Disclosure Statement

The authors report there are no competing interests to declare.

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Connection between Chapters 2 and 3

In addition to limited treatment options available for CSA survivors overall, there is also limited evidence on how to effectively engage with and recruit sensitive populations and their families to clinical research studies. New methods and approaches are needed in order to ethically and effectively recruit patients in health studies. In order to better treat and develop innovative future interventions for child psychiatry, this next chapter describes a novel method of participant recruitment within the context of a residential treatment facility for CSA survivors.

Introduction to Chapter 3

During discussions with our supervisor committee, the idea of an innovative hybrid webinar/focus group arose. This innovative recruitment technique uses video conferencing technology and anonymized question and answer responses to ethically and effectively engage with caregivers of CSA survivors. These principles were designed and carried out with trauma-informed care in mind (i.e., patient safety, anonymity, ensuring the voices of survivors are heard). We demonstrate the success of our virtual approach in a sample of caregivers that was within the range of previously recommended focus group sizes, despite COVID-19 health measures restricting in person gatherings. The results from the study can be applicable to settings much beyond CSA survivors and has implications for other empirical studies that require recruitment in sensitive populations.

Chapter 3. Innovative recruitment using a hybrid webinar/focus group format: Caregiver-child dyads in child sexual abuse

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Abstract

Background: Challenges with participant recruitment in health research have been compounded by COVID-19 measures restricting in-person gatherings.

Objectives: To present a novel and innovative approach to participant recruitment in both health studies and beyond.

Methods: This study was conducted with caregivers of child sexual abuse survivors (CSA) at a residential treatment facility. Two hybrid webinar/focus groups were conducted using a video conferencing platform in fall of 2021 with two groups of stakeholders (i.e., caregivers of CSA survivors and clinical staff at Little Warriors residential treatment facility) evaluating the treatment program. Sessions were recorded, transcribed, and thematically-analyzed using standard qualitative methodology.

Results: There were 20 participants. Themes include: (1) Challenges of starting and maintaining treatment, (2) Therapeutic benefits of specialized treatment, and (3) Barriers and facilitators of treatment.

Conclusion: The present hybrid webinar/focus group was a unique way to stimulate recruitment in a sensitive population within the context of COVID-19. This approach offered an ethical way to engage with caregivers of CSA survivors and provided them value in the form of information on future advancements in clinical programming. Efforts to replicate this approach in other contexts are needed to continue finding ways to efficiently recruit and collect data.

Key words: webinar, focus group, child sexual abuse, caregivers, recruitment

3.1 Introduction

Participant recruitment can be difficult when conducting health related research and in psychiatry specifically (Boland et al., 2015; Treweek et al., 2018). Some of the complexities that contribute to recruitment difficulties include burden and intrusiveness of study measures, drop out and implications on study power, patients doubting how they can benefit, patients being concerned about their own health, limited resources in terms of patients' time, and vulnerable populations being concerned about confidentiality (Liu et al., 2018). The COVID-19 pandemic poses an additional challenge to recruitment since many countries face varying degrees of public health measures centered around limiting in-person interactions (Bonardi et al., 2020).

For vulnerable populations, such as child sexual abuse (CSA) survivors, recruitment as well as engagement in general is doubly challenging due to stigma surrounding families (i.e., abuse occurring at the time when the caregiver was the legal guardian (Kennedy & Prock, 2018). Establishing trust is particularly important when engaging CSA survivors and their families, though this can be facilitated, in part, by protecting the anonymity of children as well as caregivers (Andalibi et al., 2018; Brennan & McElvaney, 2020).

To address these aforementioned challenges, a Cochrane review found a variety of recruitment strategies for trials (Treweek et al., 2018). Among the limited studies that actually evaluated recruitment effectiveness, using open trials and telephone reminders was found to increase recruitment. Another systematic review found that the use of non-web-based recruitment approaches and incorporating clinical staff in the study increased recruitment (Liu et al., 2018). However, this review found only three randomized studies that evaluated recruitment.

Clinical trials and studies with adequate statistical power are needed to develop novel and effective treatment options for health disorders, particularly psychiatric illnesses (Lamberink et al., 2018). However, studying these treatments is difficult when there are still persisting challenges in clinical recruitment (Türközer & Öngür, 2020), particularly given the lack of efficient recruitment strategies adaptable to the COVID-19 context (i.e., public health measures such as physical distancing and limiting in-person gatherings).

Our research team discussed the difficulties in recruiting vulnerable populations, such as CSA survivors, as well as additional challenges posed by COVID-19 public health measures. One idea that arose from these discussions was a hybrid webinar/focus group to stimulate recruitment, since this approach would confer value on caregivers to obtain clinical programming information. All caregivers would have a choice to voluntarily participate in this hybrid webinar/focus group, so this approach facilitated engagement as opposed to being coercive.

In order to fill a gap in knowledge for recruitment strategies, we present a novel approach for efficient recruitment using a hybrid webinar/focus group strategy with video conferencing technology that builds off previous methods (Charlesworth et al., 1997). To substantiate and test our approach, we also present preliminary qualitative data in the context of clinical recruitment at a residential treatment facility for CSA survivors called Little Warriors. By involving two stakeholder groups (caregivers and residential treatment facility staff) as suggested by previous systematic reviews (Liu et al., 2018), we have developed an efficient and ethical way to engage caregivers of CSA survivors as well as to generate value for stakeholders in an anonymous question and answer (Q&A) format.

A similar webinar approach has been used in the context of university students (Deeb-Sossa et al., 2021), but to the best of our knowledge it has not been investigated in clinical populations. Deeb-Sossa and colleagues (2021) aimed to strategically diversify the college admissions applicant pool at the University of California, Davis. This strategy was facilitated by supporting Latinx students and their families, regarding enrollment decisions to college, in a virtual webinar format to stimulate recruitment. A diverse panel of Latinx school staff who were involved in planning and delivering the virtual webinars were then interviewed about how they retrospectively perceived the online recruiting efforts. The results of this study suggest that the use of virtual engagement to introduce students as well as their families to campus life is beneficial for supporting minority groups as they make college enrollment decisions, especially in the COVID-19 virtual environment.

We hypothesized that the present hybrid webinar/focus group approach is an effective recruitment strategy, especially in recruiting traumatized and vulnerable populations such as CSA survivors.

3.2 Materials and Methods

3.2.1 Concept

Prior to starting a larger clinical research study, we planned and hosted two hybrid webinar/focus groups to increase participant engagement in a workshop style format using the webinar function on Zoom (https://zoom.us/). This unique webinar function allows participants to use the Q&A function to send responses to the moderators anonymously. Additionally, there is an option to “up-vote” popular questions, which can be useful for keeping track of a high volume of inquiries for larger sessions. During the one hour hybrid webinar/focus group session, the main moderator (a research team member) described research and programming at Little Warriors. After this, the moderator posed five open-ended prompts for audience members to stimulate discussion for the remainder of the one hour session. The main purpose was to investigate how a multimodal treatment program was received for caregivers of CSA survivors. Discussion was facilitated by the main moderator and two staff members, and the prompts were partially adapted from the Alberta Quality Matrix for Health (Cowell & Harvie, 2012).

3.2.2 Study context

Little Warriors is a novel intensive multimodal residential not-for-profit treatment program for children and adolescents with a CSA history (Reeson et al., 2020). The Little Warriors *Be Brave Ranch* (BBR) facility is “camp-like” in order to create a fun and recreational environment for activities. BBR programming includes treatment rounds for cohorts aged 8-12 years old as well as 13-16 year old adolescents. Each individual cohort consists of approximately 6-12 children.

3.3.3 Data collection

This study’s methodology was approved by the University of Alberta Human Research Ethics Committee. All caregivers were invited by Little Warriors to participate in a hybrid webinar/focus group that included an open Q&A period. For the present study, all caregivers had a child that was either in or had completed treatment. Implied Consent was obtained at the beginning of the hybrid webinar/focus group session, meaning those who participate are indicating they are comfortable with having their responses recorded and anonymously analyzed.

During the hybrid webinar/focus group, anonymized responses of caregiver attitudes and opinions were captured using the Q&A function on Zoom webinars, so anonymity of participants was protected. In order to maintain a continuous flow in conversation throughout, the moderator posed questions to the staff for their opinions during times when caregiver responses were not being gathered. The sessions were conducted in English, via Zoom, and lasted approximately one hour. Two sessions were held in November 2021 and both sessions were recorded.

Encrypted Zoom links were sent out by Little Warriors and recordings were stored in a secured online file only accessible by research team members.

3.3.4 Data analysis

We used qualitative thematic analysis to better understand the attitudes/opinions of caregivers with children enrolled in treatment at Little Warriors (Kiger et al., 2020). The recorded sessions were transcribed, and two independent coders thematically analyzed the transcripts using Braun and Clarke's methodology (Braun & Clarke, 2006). Qualitative data analysis was used to identify, analyze, and summarize themes in detail. Initial coding of transcripts was completed by two independent team members (JJ and HA) using an inductive approach. This allowed for inter-rater reliability and conformability (Nowell et al., 2017; Lincoln and Guba, 1985). Inductive open codes were combined into preliminary themes and a larger team (AJG, YW, PHS) was engaged in an additional round of analysis on deductive coding guided by the study objectives. Regular meetings involved discussion, code verification, resolution of discrepancies, and confirmation of final themes. An audit trail of memos and discussion minutes was used to verify decisions about themes and to maintain credibility as well as rigor throughout the thematic analysis (Koch, 1994).

3.3 Results

3.3.1 Quantitative Descriptive Analysis

Of the 89 caregivers invited, 20 registered for the sessions, and 11 attended, yielding a response rate of 55%. A total of 20 participants, including caregivers, clinicians and moderators, contributed to the data in the present thematic analysis (Table 5). Hybrid webinar/focus groups were conducted on November 22, 2021 (Session 1) and November 25, 2021 (Session 2). Two caregivers intended to participate in Session 2 but could not join due to limited time or technical difficulties. A research team member followed up via email twice to provide additional opportunities for feedback, but no responses were received. Data saturation was determined with the two sessions, as no new data were substantively being added to the thematic analysis (Fusch et al., 2015).

Table 5: Participants (N=20) that attended the hybrid webinar/focus groups.

Hybrid webinar/focus groups	Caregivers	Moderators	Staff
Session 1	5	2	2
Session 2	6	3	2

3.3.2 Thematic analysis

The hybrid webinar/focus groups conducted yielded several major themes. Themes include: (1) Challenges of starting and maintaining treatment, (2) Therapeutic benefits of specialized treatment, and (3) Barriers and facilitators of treatment. These major themes, related sub-themes, and supporting quotations are summarized in Table 6 and are presented with greater detail in the following sections.

Table 6. Main themes, sub-themes, and supporting quotations from thematic analysis.

Themes	Sub-themes	Supporting Quotations

Challenges of starting and maintaining treatment	Emotional burden of intake day	“[I]t [intake day] can be quite an emotional day as well as an exhausting day for our caregivers.” (Staff, W1). “[T]he day [intake day] I had to leave him was very hard.” (Caregiver, W2). “[G]ot a call back right away. The interview was kind and empathetic, it wasn't rushed. And I felt listened to and I'm very appreciative…” (Caregiver, W2) “[E]motional, but at the same time, felt relief there was help out there.” (Caregiver, W1).

	Staying in treatment	“[L]ots of homesickness” (Staff, W1) [D]istance can be a factor.” (Staff, W1). “He [child in treatment] also called me every day for the first three weeks begging me to pick him up.” (Caregiver, W2). “[H]er peers are not familiar with hearing or seeing [the concept of voicing boundaries].” (Caregiver, W1).

Therapeutic benefits of specialized treatment	Not feeling alone	“[S]o that they know that they're not alone, they're able to have those connections, and hopefully build some sustaining peer support.” (Caregiver, W2). “Our girl has been super lonely most times here at home. But she is now in school making a couple friends. So she is really looking forward to her socialization with her schoolmates.” (Caregiver, W2).

	Feeling safe and supported	“[T]eens have a lot of time to really build that rapport relationship with us and […] are able to slowly open up kind of out their own on their own time, which is something that isn't so available with other clinics…” (Staff, W1). “[T]hat's one piece I know through COVID [t]hat was a little tougher, just because we're […] limiting visitors as much as possible. But we do have that virtual tour online, which is really helpful…” (Staff, W1). “We can use a lot of the same language because the program helps even really young children talk about more mature concepts such as boundaries, mindfulness, self-care.” (Caregivers, W1). “So the smaller group setting was great to make her feel comfortable” (Caregivers, W2).

	Moral injury wounds addressed	“But what really worked was strategies he was taught at the Ranch; they totally took the shame out of his pain. As he moved forward, this was one of the most important things.” (Caregivers, W2). “And it [incident of child sexual abuse] doesn't define them.” (Caregivers, W1).

	Trauma informed staff	“[W]e're always getting trained in different types of trainings. So trauma, trauma one on one, I think just the structuring of the program itself is really trauma informed…” (Staff, W2).
		“[O]ur staff sanctuary. So that's where the staff can go to really just ground themselves in between breaks or wherever they might have some […] time to do that. In addition to those debriefs, […] I think most of the participants know this, but every fifth week, we actually don't have any children or youth on site.” (Staff, W2).
		“[T]he staff, they were kind, responsive, observant, understanding and still firm and what they expected from my child. programs are only as good as the staff that run it…top notch therapy, caring and knowledgeable staff, again, on the clinical staff side.” (Caregivers, W2).

Barriers and facilitators of treatment	Future areas to scale up	“And it's […] difficult to find some of those resources and even posts, post treatment or post program. There's still areas where this individual is acting out.” (Caregiver, W1). “[We want] Government funding for the Ranch.” (Caregiver, W2). “...[A] school counselor can help be a mending piece between a client or like a kiddo. So I found what generally when our kids are connected with a school counselor, it appears like they're more at ease with school, and they generally feel a lot more connected to their school.” (Staff, W1). Yes, I was super excited to hear about Indigenous elder coming to the camp. But I was sad, it could not happen with COVID. Yeah, so hopefully, things can open up again and have that inclusion because it does really sound valuable.” (Caregiver, W2).

	Residual psychological wounds	“[W]hen we work through trauma, and in kind of going through that process, it's, it can be kind of a roller coaster, right. And a lot of the times once people start kind of getting into some of that therapeutic work, it can look like a digression.” (Staff, W1). “[O]ur daughter wanted to go home. That was really hard, but she ended up working through it and stayed.” (Caregivers, W2). “[W]hen there are times of her daughter calling home crying about when there was a disagreement with another cohort that they're able to work through. And the following day, they were they would call and say that everything was fine. She was okay to stay.” (Caregivers, W2).

	Challenges of maintaining self-care	“We have kids that think self-care can only be bubble baths. And so teaching them like no, like, there's things that you can do outside of that for self-care and getting them to internally reflect and learn how to take care of themselves, really, without relying on outside things.” (Staff, W1). “Like we always say like cost should never affect your self-care.” (Staff, W1).

1. Challenges of starting and maintaining treatment.

Both caregivers and staff identified the challenge of keeping the children in treatment rounds through completion. These challenges are not surprising given the intensity of the children’s trauma histories and the substantial commitment on the part of the children to go to an unfamiliar place for several weeks away from family. Sub-themes include: (1) Emotional burden of intake day and (2) Staying in treatment.

1.1 Emotional burden of intake day

Intake day was identified unanimously as an emotional day for both caregivers and staff. For staff, they have gone through the intake process for many families and identified common themes of the experience being difficult emotionally. For caregivers, there seems to be an emotional toll that is accrued during intake day. Caregivers pointed out the difficulty in saying goodbye to their child at the facility. However, caregivers also mentioned that the burden of intake day was well worth it, given how it helped their families and the fact that the interview process was not rushed. One caregiver was relieved that there was in fact treatment available for children with a history of child sexual abuse. The fact that this multimodal treatment programming exists seems to offer families hope that their child can work toward recovery even after severe early life trauma.

1.2 Staying in treatment

Given the high degree of heterogeneity in the Little Warriors' population, some families found that maintaining treatment was hard. These factors can be internal such as homesickness and also external such as location. Living away from their families in a new environment seems to be a difficulty that many children face during the first few weeks of treatment. However, challenges may also reflect mental health difficulties. Another factor included school, where missing out on substantial schooling means falling behind peers in terms of grade level as well as emotional maturity.

2. Therapeutic benefits of specialized treatment

Aside from the challenges reported by caregivers and staff, there were several therapeutic benefits observed. In this theme, both caregivers and staff identified specific areas that provided therapeutic benefits for children at Little Warriors. Little Warriors splits children into small cohorts and uses a multimodal approach with several different types of therapies used throughout treatment. Given the nature of this multimodal programming, the benefits described make sense, as children have the space to gravitate toward specific treatments that they find most helpful. Sub-themes include: (1) Not feeling alone, (2) Feeling safe and supported, (3) Moral injury wounds addressed, and (4) Trauma informed staff.

2.1 Not feeling alone

Child sexual abuse can be a severely isolating experience not only for children but also for families. The high cost of feeling isolated is associated with a response to trauma, where children believe that they are the only one affected by abuse. As children come to Little Warriors and start interacting with their cohort, they realize that they are in fact not alone. It seems that the cohort approach helps to mitigate some of the harmful effects of child sexual abuse.

2.2 Feeling safe and supported

One key factor that both groups identified to achieving optimal treatment outcomes is feeling safe. Clinicians emphasize giving ample time to adjust and build rapport in efforts to support children. Having the resources to create a safe environment where children can gradually open up emotionally appears important, as the treatment commitment can be frightening and overwhelming to families. Ensuring caregivers have space to ask questions is important. Staff ensure that families are fully informed of the supportive environment by adapting tours to the COVID-19 virtual environment. Programming also plays a role in facilitating psychoeducation. Psychoeducation then allows children to bring these skills back home and to continue their relationship with their caregivers post-treatment. The use of small cohorts was also instrumental for creating a sense of safety and comfort for children.

2.3 Moral injury wounds addressed

Children with a history of multiple and prolonged incidents of abuse have enormous stress in their lives and coming to an unknown treatment facility with strangers can be an added burden. Thus, the road to recovery is a gradual process. One topic that arose across caregivers was the devastating impact of shame associated with child sexual abuse that was adequately addressed in treatment. It seems that the multimodal treatment approach was effective in addressing issues related to the construct of moral injury in terms of shame specifically. The careful attention to addressing psychological wounds at Little Warriors helps children to start to build resilience.

2.4 Trauma informed staff

The staff at Little Warriors are trauma informed and they have specialized training to manage crises. The staff value their own mental health as well which serves as a great model for the children they interact with on-site. It seems that having rest weeks with no treatment programming is important to maintaining the wellbeing of staff and to avoid burnout. One of the key principles of trauma-informed care is to foster empowerment in patients, which in turn sets the stage for establishing trustworthiness.

3. Barriers and facilitators of treatment

In light of the therapeutic benefits mentioned above, caregivers and staff reported examples of factors that hindered as well as facilitated treatment progress. In this theme, both caregivers and staff identified specific factors that got in the way of the treatment for their child as well as factors that need to be scaled up in the future. Factors identified in this theme related to the children's wellbeing, resources at Little Warriors, and staff. Sub-themes include: (1) Future areas to scale up, (2) Residual psychological wounds, and (3) Challenges of maintaining self-care.

3.1 Future areas to scale up

There were some areas that caregivers identified as needing scaling up. In terms of resources, this may be addressed by re-allocation of existing resources to better support families post-treatment, or potentially additional resources. Ensuring that schools have counselors can be of benefit to children as they make the transition back to school post-therapy. Specifically related to COVID-19, there were some programs that were postponed due to public health measures, but future directions could include ways to adapt to the virtual environment. Also, it seems that cultural activities are valued and received well by families at Little Warriors.

3.2 Residual psychological wounds

Due to the severity of trauma in child sexual abuse, there can often be residual psychological wounds that factor into how well a child progresses. It seems that treatment progress is not linear and this is not surprising, given the severity and nature of trauma these children experience. Some children may have persisting difficulties with peers. Others want to leave treatment early to go back home. In light of these interpersonal challenges, sometimes persevering through them with the support of trauma-informed staff and supportive family is the best course of action to facilitate recovery.

3.3 Challenges of maintaining self-care

Staff spend time educating what self-care is to children by clearing up misconceptions. Staff also model self-care themselves. Staff self-care skills play an important role in protecting against things such as burnout and vicarious trauma. Moreover, through educating and modelling, staff communicate to children and families the non-negotiable nature of maintaining self-care as it relates to emotional regulation and wellness in general.

3.4 Discussion

This study employed a unique hybrid webinar/focus group approach to engage a convenience sample of caregivers of CSA survivors at Little Warriors. This novel approach was an ethical and efficient way to stimulate recruitment in a sensitive clinical population. To substantiate and test our approach, we present preliminary findings from a qualitative thematic analysis which resulted in three main themes: (1) Challenges of starting and maintaining treatment, (2) Therapeutic benefits of specialized treatment, and (3) Barriers and facilitators of treatment. The use of this hybrid webinar/focus group strategy may be applicable to other contexts outside of health research due to its flexible and efficient infrastructure using video conferencing technology. Importantly, this approach is also adaptable to the COVID-19 virtual environment and has shown positive results in a sensitive population for the present study. At the highest level of scale-up, this approach could be used in a similar fashion to consensus conferences (Nielsen et al., 2006).

3.4.1 Benefits of hybrid webinar/focus group approach

Barriers to recruitment previously found in the literature relate to the time commitment and value for participants (Liu et al., 2018). The present hybrid webinar/focus group approach was able to address this barrier, in a cost-effective and efficient manner, by having a Q&A session where caregivers could obtain any clinical programming information they were looking for directly from staff at Little Warriors in 30-60 minute sessions. Caregivers also learned about the value of future research studies planned at Little Warriors, so that they have the option to participate in the ongoing program evaluation for children and adolescents' recovery. We believe that the success in these responses was a consequence of creating a safe environment wherein both stakeholders were incorporated (i.e., the clinical staff and caregivers) and having a continuous conversation sustained throughout the whole session (Gibson, 2007).

Sensitive populations can be challenging to engage with due to stigma and the need for establishing trust (Kennedy & Prock, 2018)—populations such as CSA survivors and their families are one example. For health research in general, obtaining information about patient identified priorities and areas of improvement are essential for improving treatment outcomes and supporting families in their recovery (Naik et al., 2018). However, it can be difficult to obtain sensitive information especially in a traditional in-person focus group setting, since disclosure could result in feeling stigmatized (Kennedy & Prock, 2018). In terms of individual interviews, participants could feel less inclined to share information in a one-on-one setting if the interviewer is of another gender or cultural background, for example (Guest et al., 2017). The uniqueness of the present hybrid webinar/focus group format allows for caregivers to give anonymized feedback by typing in their responses in a Q&A chat box, relating to key areas of program improvement and implementation. This anonymized approach to engagement is distinct amongst traditional methods of data collection (Treweek et al., 2018). Given the challenges of working in a highly sensitive population as well as the elevated number of no-shows reported in previous literature on virtual events versus in-person (Rupert et al., 2017), we still generated a sample within the recommended focus group size in the COVID-19 virtual environment (Powell et al., 1996). Interestingly, the clinical director of Little Warriors noted that some difficult-to-engage caregivers ended up participating in the present hybrid webinar/focus groups. This may be due to the fact that the present study used anonymized responses in a video conferencing format, which facilitated open responses about sensitive information. Furthermore, protecting the anonymity of participants has been recognized as a factor in establishing trust, which is crucial when engaging with sensitive populations (Andalibi et al., 2018; Brennan & McElvaney, 2020).

3.4.2 Caregiver-identified challenges to address for the future

One of the core principles of trauma-informed care is to build a strong therapeutic alliance with the client (Sweeney et al., 2018). Opportunities to start developing rapport begin with intake day when caregivers hand off their children to residential facility staff. Both caregivers and staff reported that intake day was emotionally burdensome in our thematic analysis. Given the theme reported in, “Emotional burden of intake day,” it is important to note that avoidance, by both the caregiver and child, has been previously found to predict child outcomes as well as treatment drop-out (Yasinski et al., 2016; Yasinski et al., 2018). In order to bolster a therapeutic alliance in a trauma-informed approach and to improve treatment retention, clinicians can play a role in supporting caregivers to actively engage during the intake process. This includes making sure caregivers are well informed as staff discuss and set expectations for therapy, outlining treatment topics that will be covered during the course of residential care (Theimer et al., 2020). Staff can also ensure adequate time to address caregiver concerns and questions early on in treatment. Finally, there should be resources available for emotional support if caregivers decline treatment in the form of psychoeducation.

3.4.3 Limitations

We believe this novel recruitment strategy is applicable to many contexts, but there are several limitations to this approach. First, the present hybrid webinar/focus group approach has not been evaluated in other contexts. However, we believe that this virtual approach is flexible enough to be useful in other populations beyond CSA survivors and their caregivers. The use of anonymous responses through a video conferencing platform allows participants to give important patient-identified priorities and information regarding their treatment in a way that does not violate their privacy.

Second, there is a limitation related to ethics in that the content discussed throughout the hybrid webinar/focus groups could be potentially triggering to participants. To the best of our capabilities, we placed measures to ensure the safety of all participants by obtaining implied consent at the beginning of the session. Additionally, we also provided the contact information for research team members and Little Warriors to direct participants to appropriate care pathways, if needed.

Third, access issues were a limitation. Given our resources, we did our best to ensure two different evening times were scheduled for sessions to allow for caregivers to attend after work hours. We also sent information about downloading and using the video conferencing platform to caregivers and had a technical moderator on call to troubleshoot any potential login difficulties. Two caregivers indicated interest in attending the hybrid webinar/focus group session, but nevertheless were not able to join in either due to time or technical difficulties. And despite two follow-ups, no response was received from these caregivers.

3.4.4 Future Directions

We believe that the present hybrid webinar/focus group approach would benefit from further investigation and evaluation in other clinical contexts. Key areas that may benefit include other vulnerable populations such as patients recovering from addictions, severe mental illnesses, and youth with other forms of early life trauma. Replication studies with a larger number of participants would also be useful. These key areas will help evaluate this novel data collection approach in terms of wider applicability to health settings and beyond.

3.4.5 Conclusion

We found that this novel hybrid webinar/focus group approach efficiently and ethically engaged caregivers in a way where they receive informational value. This approach also has an added benefit in that it is completely virtual and adaptable to the COVID-19 virtual environment. Further efforts to replicate this approach in other health settings and beyond are recommended to continue finding innovative ways to engage with stakeholders.

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The Authors declare that there is no conflict of interest.

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Connection between Chapters 3 and 4

As the evidence for CSA survivor interventions grows, it is important to continue investigating individual differences and overall determinants of health, especially in caregiver-child dyadic health. These directions are in line with trauma-informed care principles of recognizing the uniqueness of individuals and understanding the many factors that contribute to wellness. The literature in child psychiatric interventions is sparse, so broad scale evaluations and investigations into new areas (inclusive of holistic wellness and family environments) of treatment is warranted. This next chapter focuses on a construct called reflective functioning, which promises to be an important area of research in caregiver-child dyadic wellness.

Introduction to Chapter 4

An aspect of trauma-informed care is understanding that individuals are unique and that everyone has a distinctive set of backgrounds, gender, culture, and history of adversity. Emotional regulation is a key factor to address in caregiver-child dyads, especially those affected by trauma. Reflective functioning (RF) is a relatively new concept that is a proxy measure for emotional regulation, both of which are important determinants for wellness. The present reflective functioning scoping review seeks to systematically map out the RF literature in terms of both assessment and intervention studies, sampling parents/guardians of children aged 36 months or younger.

Chapter 4. Early mental health foundations: a scoping review of reflective functioning in caregiver-child dyads

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Abstract

Objective: To summarize and map the literature on reflective functioning (RF) in caregivers and their children through an equity, diversity, and inclusion (EDI) lens.

Method: A scoping review of the literature published up to September 2021 was conducted. Studies were included if they sampled parents of children 36 months of age and under. Databases included Medline, PsycINFO, CINAHL, ERIC, Scopus, Web of Science and Embase. Two independent reviewers screened papers and discrepancies were resolved by a third reviewer. Data were charted by one reviewer and verified by another reviewer.

Results: From the initially identified 5,162, full texts of 608 included papers were then screened and yielded 181 papers. At least one ethnicity other than the dominant ethnicity of the study country was included in 69 studies. Seven of the 69 studies included at least one Indigenous person. No studies were conducted in low to middle income countries (LMIC) and no studies reported data on gender-identity.

Conclusions: RF has links to several dyadic health outcomes. One limitation of this review is that large-scale events such as COVID-19 were not considered. Future work should address a lack of information on RF in this context in relation to ethnic diversity, gender-identity, and LMICs.

Key words

Reflective Functioning; Mentalization; Mind-mindedness; Caregivers; Children

4.1 Scientific Background

Reflective functioning (RF) is the capacity to understand one's own and others' behaviour in terms of mental states (Fonagy & Target, 1997). RF is inherently interpersonal, evolving in the context of an infant-caregiver relationship, and the development of RF is an essential early milestone in emotional development. This construct has also been explored under the names of Theory of Mind (ToM) and metacognition (Steele & Steele, 2008), both focusing more on cognitive aspects, but RF focusses on the dynamic psychological development of understanding others' mental states. Other related terms include mirror neurons, co-regulation, mentalization, mind-mindedness, and insightfulness. It is of note that RF is different from introspection, where the former focusses on both self and outside world rather than self alone.

A highly reflective parent that is emotionally regulated can engage effectively with the child to create a secure attachment. A secure attachment relationship will then ultimately open up more opportunities to develop RF in the child (Chevalier et al., 2021; Fonagy et al., 1991). Consequently, there is increasing psychological interest in RF as it relates to infant-caregiver attachment and later childhood mental health outcomes (Allen & Fonagy, 2006; Fonagy et al., 1991).

The history of RF begins with Steele and Steele's longitudinal work for their doctoral degrees in the 1980s (Steele & Steele, 2008). Their work benefitted from John Bowlby and Peter Fonagy's support. A combination of various research areas, spanning psychoanalysis and developmental psychology, laid the groundwork for a distinct RF concept to arise. In 1985, RF first emerged as a concept from attempts to refine the Adult Attachment Interview (AAI), which was a system that classifies adults' language when evaluating childhood attachment experiences (George et al., 1996). This work was heavily influenced by attachment theory, British object relations, and independent psychoanalytic perspectives as well as theory of mind (Steele & Steele, 2008). Soon this emerging area of research was also corroborated by evidence from cognitive developmental neuroscience (Fonagy & Target, 2005).

This body of work related to RF leans heavily on the predictive power of Ainsworth's Strange Situation Procedure (SSP). This 20-minute laboratory paradigm with a parent, child, and stranger generates reliable and valid inferences between the quality of infant experience to caregiver attachment (Ainsworth et al., 1978). These hypotheses (i.e., infant's primary object relationship being a crucial factor in development) were generated by Freud, but Ainsworth demonstrated their empirical validity.

The work of Klein and Winnicott was also very important in the development of the RF concept. Although much progress was based on Sigmund and Anna Freud's ideas, Kleinian thinking was also instrumental in the formation of RF, particularly around the nature of emotion and thought and child's need for containment (i.e., low RF individuals avoiding the range and intensity of human emotions, whereas high RF individuals display the free range and diversity of emotions, both positive and negative: Steele and Steele, 2008). Winnicot's psychoanalytic writings arose from observation of the deep visual sense of how mothers behaved toward their infants, which is hinting toward this reflective process of RF (Winnicot, 2009). For Winnicot, infants can only discover what they feel by seeing it reflected back (i.e., if an infant's feelings and emotions are acknowledged and nurtured by a caregiver, then it validates the infant moving forward to continue relating with others in a social world).

Our current understanding of the RF concept has evolved into the systematic study of how individuals use or fail to use mental state language. Low RF refers to an impoverished ability to articulate why an individual, or others, behaved in a certain way. Individuals with high RF can often assess and be mindful of their own and others' beliefs/behaviours. Work in RF functions as a bridge between Stern's work (on the "self" arising from interpersonal relations prior to when language develops) and the AAI (Stern, 1985). Essentially RF serves as a model for how healthy and reflective parents can encourage infants to interact, initiate, and respond to their own or others' relationships in terms of mental states. These skills are crucial for psychosocial development. Consequently, ruptures in caregiver RF have been associated with history of abuse, limited social supports, substance use during pregnancy, limited maternal education, insecure attachment, and higher child dysregulation (Badoud et al., 2018; Ensink et al., 2015; Smaling et al., 2015; Suardi et al., 2015).

Parents can promote and teach RF to children through various means, such as playful deliberate role-taking which is an important simulation in mentalizing tasks (Goldman, 1989). Conversations about feelings and reasons why people do things are linked to achievement of reflective functions (Dunn & Brown, 1993). Also, encouraging peer group interactions can increase the opportunities to simulate and imagine what others feel (i.e., social orientation, reciprocity, popularity, empathy) (Ladd & Parke, 2016). Specific ways to improve RF in both parents and infants are outlined by the Mindful Parenting therapeutic group (Reynolds, 2003) for example, which facilitates verbal and nonverbal communication in a series of designated play times and other structured activities.

It is important to account for Adverse Childhood Experiences (ACE) when investigating RF because both factors affect the quality of the caregiver-child relationship. The foundational ACE study (Felitti et al., 1998) revealed that those with a history of four or more ACEs (physical abuse, sexual abuse, neglect, household dysfunction, etc.) have a 4-12 fold increase in health risk for alcohol use disorder, substance misuse, depression, suicide, a two-fold increase in smoking, poor self-rated health, and a 1.4-1.6 fold increase in physical activity and severe obesity. In one recent study (Garon-Bissonnette et al., 2021) RF was identified as a mediator of the association between maternal childhood trauma and offspring development. These data support the determining role RF and ACEs have on caregiver-child dyads, but few studies have accounted for ACE scores in the RF literature.

Several key publications have focused on the role of RF in caregiver-child dyads. The first systematic investigation of RF was a randomized controlled trial conducted by Suchman and colleagues (2010a). In a population of mothers in substance abuse treatment, Suchman compared an attachment-based parenting therapy program called Mothers and Toddlers Program (MTP) intervention group (n=23) versus an active control Parental Education (PE) group (n=24). Their findings demonstrated benefits in the MTP mothers with higher RF scores, better representation of coherence/sensitivity, and higher caregiving as compared to the PE active control group.

More recently, Slade and colleagues (2020) conducted a randomized controlled trial of Minding the Baby (MTB) (n=77) versus an active control group (n=79), involving routine prenatal and postnatal well-woman health visits, in young mothers living in underserved urban communities. Their findings demonstrated the MTB mothers showed an increase in RF over the course of the intervention as compared to the control group. As well, infants of the MTB group were significantly more likely to be securely attached, as compared to the control group. The most recent meta-analysis (Barlow et al., 2021) supports these findings.

This scoping review took advantage of the rising awareness of the importance of equity, diversity, and inclusion (EDI) to examine the caregiver-child dyadic literature from an EDI perspective. For example, there is evidence (MacMullin et al., 2021) that gender non-conformity may be related to elevated behavioural and emotional challenges and this association may be stronger for those who experienced poor peer relationships and had parents/guardians less willing to be a secure base for their children. As well, ethnic minority populations are disproportionately affected by mental health issues every year (Grey et al., 2013). An EDI lens will be applied systematically throughout the present scoping review to identify what has been studied as well as pointing out specific directions for future research in the RF literature.

The most recent meta-analyses (Barlow et al., 2021; Lo et al., 2022) conducted included only six and 15 randomized controlled trial intervention studies, respectively, and an earlier narrative review conducted in 2017 (Camoirano, 2017) did not include search terms such as co-regulation and mirror neurons which are included in many RF-related publications. To the best of our knowledge, no published review has yet examined RF assessments in addition to interventions. In view of the apparent limitations in research from an informal literature scan, a scoping review was deemed appropriate for mapping of gaps in and opportunities for research based on existing RF literature. A specific aim of this review is to answer the question: what evidence is there for the value of RF assessment tools and interventions in caregiver-child dyads?

4.2 Methods

4.2.1 Eligibility criteria, information sources, and search

Guidelines from the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) (Tricco et al., 2018) were used in the present review. The methodological framework outlined by Arksey and O'Malley (2005), and further refined by Levac and colleagues (2010) also guided the present study. A scoping review of electronic databases was conducted from database inception to September 22, 2021 by a health sciences librarian. Databases included Medline, PsycINFO, CINAHL, ERIC, Scopus, Web of Science and Embase. The search strategy included a combination of subject headings and keywords to combine the concepts of RF or coregulation or mentalization or mirror neurons or mind-mindedness or metacognition or theory of mind or insightfulness, and parents. The complete search strategy for each database can be found in the appendix.

No limits were placed on country or publication date, but due to limited resources we only included peer-reviewed studies published in English, Spanish, French, German and Arabic. Studies that sampled any parents/guardians of children up to and including 36 months of age were used because there are clinically relevant epochs in that age range (Dulcan, 2016). This criterion is also in line with a previous meta-analysis (Barlow et al., 2021). Papers that included broad age ranges for children were included only if they reported disaggregated data specific to 36 months of age or younger. There was no restriction on age of caregivers. Non peer reviewed studies and animal studies were excluded. The full inclusion/exclusion criteria can be found in the appendix.

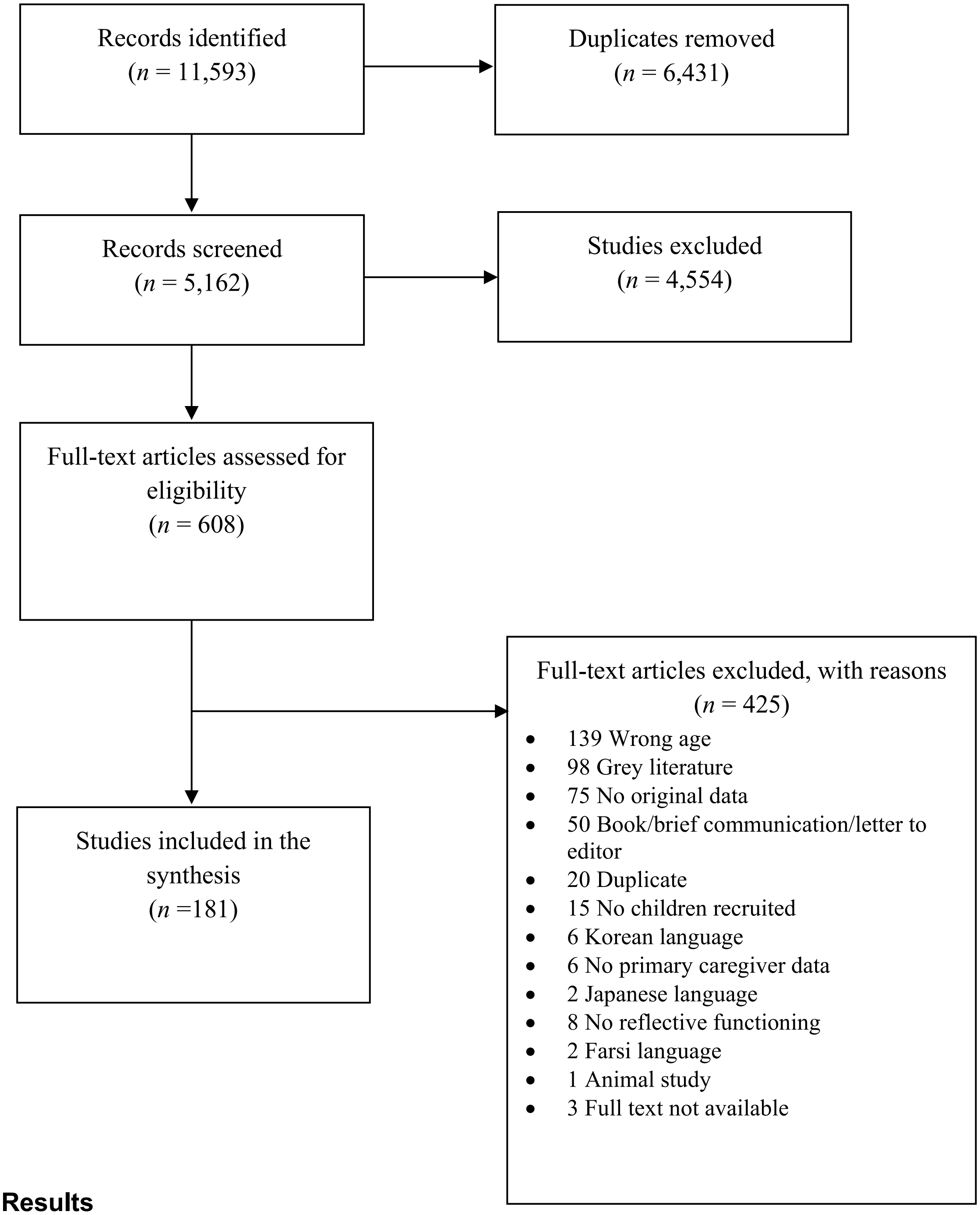
4.2.2 Selection of sources of evidence, data charting, and synthesis of results

The 5,162 identified papers were first independently screened by title and abstract using Covidence software (https://www.covidence.org/) by two reviewers. Disagreements were resolved by a third reviewer. The full texts of the remaining 608 papers were then independently screened by two reviewers and disagreements were also resolved by a third reviewer. Data were charted by one independent reviewer and verified by another reviewer. The final set comprising information for this review included 181 publications.

4.2.3 Protocol and registration

The scoping review was registered with Open Science Framework (OSF). No review protocol was developed for this study. Figure 2 shows the PRISMA diagram of study selection.

Figure 2. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram of study selection



4.3 Results

Table 7 shows a general summary of the sociodemographic characteristics of the 181 papers found in the present scoping review. A total sample of 15,231 dyads and 8,310 families were analyzed. The majority of studies focused on mother-infant dyads specifically. Some studies reported number of families without specifying whether the mother and father were both recruited. The reference list of the 181 included studies can be made upon request.

In terms of population type, 95 were general population studies, 78 were clinical population studies, 69 included an ethnic minority population in their studies (these studies overlap with other population categories), three were foster/adoptive population studies, two were forensic/prison population studies, and three were high risk population studies. General population was defined as any random or convenience sample taken in the community, daycare, nursery or pregnancy center. Clinical population was defined as reporting some type of clinician rated or self-rated diagnosis for the caregiver and/or child. Ethnic minority populations were marked if they collected any data on participants outside of the dominant ethnicity of the respective country. High risk samples were identified and stated explicitly by study authors (Bérubé-Beaulieu et al., 2016; Pajulo et al., 2012; Rossignol et al., 2013) as experiencing some degree of psychosocial difficulty such as substance using, experiencing intrafamily trauma, or experiencing difficulty adapting to their parenting role. Some studies had overlapping populations (i.e., clinical and ethnic minority population) but only one population categorization was selected based on what the study authors identified as most relevant to the study's primary objectives and main outcomes.

In terms of type of study, 73% of papers (133) were assessment studies and 27% (48) were intervention studies. For study design, 50% of papers (91) were cohort studies, 24% (44) were cross-sectional, and 13% (24) were non-randomized trials, 8% (14) were randomized trials, and 4% (8) were case reports. For type of data reported, 56% of papers (101) comprised mixed-methods data results, 34% (61) used exclusively qualitative and 10% (19) quantitative data.

Table 7. Summary of sociodemographic characteristics of all included studies

Type of study		*N (%)*
	Assessment	133 (73.5)
	Intervention	48 (26.5)
Study design		
	Cohort	91 (50.3)
	Cross-sectional	44 (24.3)
	RCT	14 (7.73)
	Non-RCT	24 (13.3)
	Case report	5 (2.76)
	Case series	3 (1.66)
Type of data		
	Qualitative	61 (33.7)
	Quantitative	19 (10.5)
	Mixed methods	101 (55.8)
Population		
	General Population	95 (52.5)
	Clinical	78 (43.1)
	Forensic	2 (1.10)
	Foster	3 (1.66)
	High risk	3 (1.66)
	*Ethnic minority**	69 (85.2)
Caregiver type		
	Mother-infant	158 (87.3)
	Father-infant	3 (1.66)
	Families, unspecified parents	20 (11.0)

N = number of articles; RCT = randomized control trials
* Ethnicity minority category overlaps with others; percent value is calculated from the total of articles reporting ethnicity (n=81).

4.3.1 Assessments

The majority of the 133 assessment studies focused on mother-infant dyads specifically. Some studies simply reported number of families and did not specify whether the mother and father were recruited. Cohort studies comprised 66% of papers, 32% were cross-sectional studies, and the rest were non-randomized trials. Non-randomized trials were classified as assessments because they involved an experimental manipulation without a reflective functioning intervention. Mixed-methods approaches were most common although several papers used either qualitative or quantitative approaches.

Assessment studies used a variety of measurements for RF, including the Parental Reflective Functioning Questionnaire (PRFQ) (Rutherford et al., 2013), Reflective Functioning measured in the Parental Development Interview (Øie et al., 2020), and Mind-mindedness coded for in free-play sessions (Meins et al., 2012).

4.3.2 Interventions

Table 8 shows the breakdown of the 48 intervention papers, 44 studies specify the intervention, four did not. Most studies focused on mother-infant dyads specifically. As with assessments, some studies simply reported number of families and did not specify whether the mother and father were recruited. Non-randomized trials made up 46% of included papers, 29% were randomized trials, and the rest were either case studies, cross-sectional, or cohort studies. All randomized trials used mixed methods approaches, with the exception of one quantitative study. The remaining study designs varied in terms of mixed-methods, qualitative, and quantitative approaches.

Table 8 also shows the summary of intervention papers that reported within-subjects pre-intervention and post-intervention scores. Other characteristics such as the outcome of each intervention is also described in Table 8. Increased and decreased RF pre-post-intervention was reported in 60% and 16% of papers, respectively. For the remainder RF was unchanged pre-post-intervention.

A variety of RF interventions were used such as the Mothers and Toddlers Program (Suchman, DeCoste, Leigh, et al., 2010), New Beginnings (Bain, 2014), and Minding the Baby (Slade et al., 2020). Mothers and Toddlers Program (MTP) appeared five times and Parent-Infant Psychotherapy appeared seven times (PIP; broken down into Focused with two uses and

Psychoanalytic with five). These two interventions make up 25% of all interventions mentioned. Circle of Security (two uses; 4.17%), Marte Meo therapy (two uses; 4.17%), Minding the Baby® (two uses; 4.17%), Mindful With Your Baby/Toddler training (two uses; 4.17%) and PRERAYMI (two uses; 4.17%), and a category for other (22 uses; 45.83%) make up the rest of the interventions.

Table 8. Summary of types of interventions used

		N (%)
Location		
	Administered in the community	12 (25.0)
	Administered in a clinical setting	25 (52.1)
	Administered in both	8 (16.7)
RF pre/post measurements		
	Increased	21 (43.8)
	Decreased	0 (0.0)
	No change	2 (4.12)
	Mixed	13 (27.1)
	Not reported	9 (18.8)
Intervention		
	Mothers and Toddlers Program	5 (10.41)
	Parent-Infant Psychotherapy	7 (14.58)
	Circle of Security	2 (4.17)
	Marte Meo therapy	2 (4.17)
	Minding the Baby®	2 (4.17)
	Mindful With Your Baby/Toddler	2 (4.17)
	PRERAYMI	2 (4.17)
	Not reported/ Non-specific	4 (8.33)
	*Other**	22 (45.83)

N = number of articles; RF = reflective functioning
* Other category includes interventional programs reported in one occurrence.

4.3.3 General Population

Out of the 95 general population studies, 94% were assessment studies and rest were intervention studies. Out of the 89 assessment studies, 70% used cohort designs, and the remainder used cross-sectional or non-randomized trial designs. A range of mixed-methods, qualitative, and quantitative approaches were used across assessment studies. Out of the six intervention studies, three were non-randomized trials, one was a randomized trial, and two were case studies. Either mixed-methods or qualitative approaches were used across intervention studies.

4.3.4 Clinical Population

Of the 78 clinical population studies, 49% used self-rated scales, 45% used clinician-rated scales, and the remainder did not specify the methods. Out of the 38 self-rated clinical populations, 58% were assessment studies and 42% were intervention studies. Out of the 35 clinician-rated clinical populations, 57% were intervention studies and 43% were assessment studies. Out of the remaining five not specified clinical population studies, 80% were assessment studies and 20% were intervention studies.

4.4.5 Ethnic Populations

Table 9 shows papers included for the 69 ethnic minority studies divided into distinct types of studies and data as well as specific ethnicities. Studies marked with an asterisk indicate that either the authors did not mention which ethnic minorities were included or the participants did not specify their ethnicity. Every article considered an ethnic minority study reported inclusion of at least one ethnicity other than the dominant ethnicity of the study country. This section includes overlapping categories (i.e., an ethnic minority study will also fall into the general population or clinician-rated population category, for example). Most studies were from the United States of America (36 studies), the United Kingdom (21 studies), and Canada (7 studies). Sixty-eight percent of these studies were assessment studies, most of which used a cohort design (71%). Out of the 69 studies, only seven reported the inclusion of an Indigenous person in their sample.

The 69 studies comprised 8,332 participants, 6,421 of whom belonged to the dominant ethnicity of the study country. Ethnic minorities made up 1,883 of the participants (30%), with only 14 Indigenous participants. The remaining 28 participants did not report their ethnicity at the time of the study.

Table 9. Types of specific ethnic minority groups included in studies

Study type	Study design	Ethnicity n (%)	
Assessments	Cohort	Caucasian	4184 (82.8%)
		Black/African	345 (6.8%)
		Latinx	130 (2.6%)
		Asian	44 (0.9%)
		Arab	6 (0.1%)
		Indigenous	3 (0.06%)
		Mixed	115 (2.3%)
		Other*	226 (4.5%)
	Cross-sectional	Caucasian	1184 (81.0%)
		Black/African	117 (8.0%)
		Latinx	29 (2.0%)
		Asian	24 (1.6%)
		Indigenous	5 (0.4%)
		Mixed	17 (1.2%)
		Other*	82 (5.6%)
	Non-Randomized Trial	Caucasian	266 (70.2%)
		Black/African	36 (9.5%)
		Latinx	40 (10.6%)
		Asian	15 (4.0%)
		Other*	22 (5.8%)
Intervention	Non-Randomized Trial	Caucasian	376 (70.0%)
		Black/African	81 (15.1%)
		Latinx	35 (6.5%)
		Asian	14 (2.6%)
		Other*	32 (5.9%)
	Randomized Trial	Caucasian	224 (34.3%)
		Black/African	133 (20.9%)
		Latinx	178 (28.0%)
		Asian	13 (2.0%)
		Indigenous	3 (0.5%)
		Mixed	23 (3.6%)
		Other*	61 (9.6%)
	Cohort	Caucasian	84 (52.2%)
		Black/African	37 (23.0%)
		Latinx	14 (8.7%)
		Indigenous	3 (1.9%)
		Mixed	3 (1.9%)
		Other*	20 (12.4%)
	Cross-sectional	Caucasian	103 (99.0%)
		Asian	1 (1.0%)

*The author did not mention which ethnic minorities were included or the participant did not specify their ethnicity.

4.5.6 Remaining Populations

Out of the eight remaining population studies, 38% were assessment studies and 63% were intervention studies. For the three assessment studies, there was one high risk study (Bérubé-Beaulieu et al., 2016) that used a qualitative approach, and there were two foster/adoptive studies (Bernier and Dozier, 2003; Genis et al., 2020) that used a qualitative approach. For the five intervention studies, there was one foster/adoptive study (Kretchmar et al., 2005) that used a mixed-methods approach, two forensic/prison studies (Baradon et al., 2008; Stacks et al., 2019) that used qualitative approaches, and two high risk studies (Pajulo et al., 2012; Rossignol et al., 2013) that used a mixed-methods approach.

4.5.7 Gender

Sex was identified in most papers, but it is not specified clearly whether it is self-identified binary sex, biological binary sex, or sex assigned at birth. There was not a single paper that included information on gender. The lack of information on sex and gender is a significant gap, given the increased incidence of gender diverse couples engaging in childcare there is a need to examine both gender and sex as determinants of caregiver-child outcomes (MacMullin et al., 2021).

4.5.8 Adverse Childhood Experiences

Of the eleven studies that accounted for ACEs, 55% were assessment studies and the remainder were intervention studies. Among assessment studies, five (Ensink et al., 2016; Garon-Bissonnette et al., 2021; Martinez-Torteya et al., 2018; Riva Crugnola et al., 2019; Stacks et al., 2014) focused on general population samples, and one (Håkansson et al., 2018) focused on a clinical population. Of the five intervention studies, three (Schechter et al., 2006; Stacks et al., 2021; Vik et al., 2021) focused on clinical populations and two (Riva Crugnola et al., 2021; Suchman et al., 2011) focused on a general population sample.

4.5.9 Family History Taken

Of the 35 papers with family history records, 74% were intervention studies and the remainder were assessment studies.

Out of the 26 intervention studies, most studies were either randomized or non-randomized trials (Bain, 2014; Baradon et al., 2008; Byrne et al., 2019; Fonagy et al., 2016; Letourneau et al., 2020; Pajulo et al., 2009, 2012; Riva Crugnola et al., 2016; Sadler et al., 2013; Salo et al., 2019; Schechter et al., 2006; Slade et al., 2020; Stacks et al., 2019; Suchman, DeCoste, Castiglioni, et al., 2010b; Suchman, DeCoste, Leigh, et al., 2010; Suchman et al., 2008, 2011, 2012) and the remainder used case report or cohort designs (Bark, 2013; Cohen, 2016; Huber et al., 2015; Kretchmar et al., 2005; Lalonde et al., 2015; Perez, 2018; Polansky et al., 2006; Schaefer and Donelli, 2016). A mix of mixed-methods, qualitative, and quantitative approaches were used.

Among the 9 assessment studies, just over 56% use cohort designs (Bernier and Dozier, 2003; Berube-Beaulieu et al., 2016; Easterbrooks et al., 2017; Ensink et al., 2016, 2019) and the remainder used cross-sectional designs (Heron-Delaney et al., 2016; Licata et al., 2013; Meins et al., 2011; Riva Crugnola et al., 2019). A mix of mixed-methods, qualitative, and quantitative approaches were used.

4.5.10 Geographic distribution of studies

Table 10 shows the geographic study site distribution of studies included in alphabetical order. All studies were conducted in countries with major economies and there was not a single paper that was conducted in an LMIC economy.

Table 10. Scope of studies included sorted alphabetically

Country	Number of studies
Australia	7
Austria	1
Belgium	2
Brazil	1
Canada	22
Chile	3
China	2
Denmark	5
France	2
Finland	7
Germany	10
Israel	5
Italy	25
Japan	2
Mexico	1
Netherlands	6
Norway	6
South Africa	2
Spain	1
Sweden	1
Switzerland	3
Turkey	1
United Kingdom	25
United States	42
Total	182

1 study is Australia + China (counted twice)

4.4 Discussion

4.4.1 Summary of major points found

There are several major points that arose from this mapping of evidence on RF assessments and interventions in caregiver-child dyads. Most studies were assessments that used cohort designs with mixed methods approaches in the general population. Cohort designs are appropriate for this population because there are observable patterns of emotional development and clinically relevant epochs in children (Dulcan, 2016). Longitudinal designs help to capture changes in dyadic interactions and RF across the development of a child and their caregiver. Additionally, mixed-methods approaches have been shown to give a more comprehensive picture of clinical measurements, such as caregiver-child dyadic interactions and quality of caregiving relationships (Ivankova & Wingo, 2018).

Most interventions were non-randomized trials using mixed methods approaches which showed improved within-subject pre-post-intervention RF for either the caregiver, child, or both. A more detailed investigation of six randomized controlled trials in a recent meta-analysis (Barlow et al., 2021) showed no significant improvements in pre-post RF scores and a significant reduction in disorganized attachment. The studies were underpowered, however, so there are still future opportunities to look at RF interventions with a bigger sample size to improve dyadic relationships.

The majority of studies included in the present scoping review focused on mother-child dyads. The focus on mothers in the last few decades of research may be due to prevalence of traditional gender roles in binary sex couples during that period (Gowda and Rodriguez, 2019), whereby men are primary wage/salary earners and women primarily engage in child rearing. These patterns are undoubtedly shifting, for example, a recent study (Pedulla & Thébaud, 2015) showed that young, unmarried, childless men and women prefer more egalitarian relationship structures. This would lead to a more equitable caregiving load on both parents in the future. In this context there is a clear gap with respect to knowledge of the impact of gender diversity among caregivers.

4.4.2 Gaps and Future Opportunities

4.4.2.1 Equity, Diversity, and Inclusivity. In addition to the many strengths that exist in the current RF literature, this review illustrates a few important research gaps. Firstly, included articles noted binary gender only. An individual’s gender identity, and others’ acceptance of it, are important determinants of mental health in children and this needs to be addressed in the RF literature pertaining to caregiver-child dyads. A study by MacMullin et al., (2021), suggests that gender nonconformity in children was correlated with increased emotional and behavioural challenges that is worsened with non-accepting parents/guardians, who view gender as strictly binary. Parents who are more supportive and involved in their child’s life, have stronger RF and a healthier parent-child relationship (Rostad & Whitaker, 2016). Therefore, we suspect that lack of acceptance toward the child's non-conforming gender identity by the caregiver may weaken the caregiver-child relationship and impact the child's RF. More research is needed to elucidate the impact that gender identity has on RF in caregiver-child dyads.

A second gap is the dearth of studies that assess RF in ethnic minorities. Out of the 181 included articles, 69 included an ethnic minority population. Ethnic minorities experience more mental health concerns than members of dominant ethnic groups due to experiences of racism, discrimination, and reduced access to health care (Cokley et al., 2017; Cook et al., 2017; *Diagnostic and Statistical Manual of Mental Disorders: DSM-5*, 2013; Okazaki, 2009). RF can be impaired in patients with comorbid mental health disorders. A study conducted by Quitmann et al., (2012) found that depressed mothers were less insightful and had lower RF than mothers who were non-depressed. Moreover, Indigenous peoples face an even greater mental health burden (Boksa et al., 2015), yet only seven of the studies included Indigenous participants for a total of 14 Indigenous participants in the entire review. Consequently, we do not understood how RF presents in an ethnic minority population and the impact it has on mental health. Understanding this relationship is critically important for addressing the mental health burden experienced by Indigenous Peoples.

4.4.2.2 Adverse Childhood Experiences. ACEs are an important determinant to consider when studying caregiver-child dyads. There is also evidence detailing the intergenerational transmission of ACEs. For example, maternal maltreatment directly predicted higher levels of maladaptive infant socio-emotional symptoms (McDonnell & Valentino, 2016). Also in a recent longitudinal study, RF mediated the association between maternal childhood abuse and neglect with offspring socioemotional development (Garon-Bissonnette et al., 2021). The present scoping review included 181 studies, but only 6% of studies accounted for childhood trauma in their study designs. There is a substantial opportunity to look at ACEs in future cohort studies to investigate how RF is affected from the maternal prenatal and postnatal stages as well as from a child outcome perspective.

In a nationally representative sample in the United States (Crouch et al., 2019), the most common ACEs reported were economic hardship (22.5%) and parental and guardian separation (21.9%). In the present scoping review out of the 48 intervention studies, only 10% accounted for ACEs so we do not yet understand how ACEs impact treatment outcomes in RF intervention studies. Future trials and assessment studies are needed to understand how RF outcome measurements are affected in caregiver-child dyads when ACEs are included in the analysis.

Simply intervening on a social determinants of health level will not solve health inequalities, but accounting for ACEs in study designs and understanding why children from less advantaged backgrounds appear to have more health challenges may be one positive approach to enabling a more equitable approach for optimizing child and adolescent mental health (Pearce A et al., 2019).

4.4.2.3 Global Mental Health. From a global mental health perspective (GMH), one of the core goals is to reduce disparities in health between groups (Murphy et al., 2019). For example, 90% of people in low to middle income countries (LMIC) have no basic access to mental health care (Patel and Prince, 2010). This has been characterized as a moral failure (Kleinman, 2009). The GMH is an historic gap in quality of mental health compared to other health issues (Votruba & Thornicroft, 2016) reflected in the complete lack of LMIC studies identified in the present review. As the evidence-base for caregiver-child RF interventions increases, so does the need for understanding how to implement and scale-up to the appropriate community context (Eaton et al., 2011).

The first step would be to conduct a cost-benefit analysis as a crucial prerequisite for selecting affordable RF interventions in LMICs. Integrating and contextualizing capacity for evidence-based practice for specific LMIC health systems is also necessary for the process of considering behavioral, managerial, economic, and social barrier factors (Murphy et al., 2021). A more substantial step after the cost-benefit analysis would be to conduct a situational analysis which is an assessment approach to design an appropriate health plan which considers multiple interacting factors in a system such as human, financial, and social determinants of health (World Health Organization, 2018). Situational analysis is (Murphy et al., 2019) an essential first step in developing robust research in GMH.

From a ‘social determinants of health perspective,’ members of ethnic minority populations may be disproportionately affected by mental health problems as well as experiencing barriers to accessing culturally appropriate care (Grey et al., 2013). Yet, in the present scoping review, only one study examined cross-cultural differences. Australian mothers used a higher frequency of mind-related comments and a lower frequency of non-attuned comments compared to their Chinese mother counterparts (Dai et al., 2020). Additionally, the Australian mothers used more mental state terms referring to desire and preference than Chinese mothers. This may be due to cultural factors where China is more oriented toward collectivist goals and group identity is prioritized based on a Confucian heritage (Keller et al., 2007). This single cross-cultural study points out an opportunity for substantial contributions to the knowledge base. More replication studies using a cross-cultural lens in LMICs would benefit this body of knowledge.

4.4.2.4 RF as a Determinant. RF may be a determinant as well as a predictor in this context. In a sample of mothers with a history of interpersonal violence related post-traumatic stress disorder, lower maternal RF was associated with child dysregulation as measured by the Infant Toddler Social Emotional Assessment (Suardi et al., 2020).

Another area of interest related to RF is attachment. In a sample of mother-infant dyads, securely attached mothers reported more appropriate mind-related comments and lower non-attuned mind-related comments compared to mothers classified as insecure-avoidant, insecure-resistant, and insecure-disorganized (Meins et al., 2012). Mind-related comments provide one index into how well caregivers can relate to their child in terms of internal experience. Opportunities to be more present and attuned to a child’s emotional needs seem to arise when the mother is securely attached and better self-regulated (Evans & Porter, 2009; Kim et al., 2014; Tronick & Beeghly, 2011).

RF can also predict other child outcomes such as infant aggression. In a sample of first-time mothers, low prenatal RF was associated with high infant physical aggression (Smaling et al., 2017). This RF-aggression link may be moderated by maternal intrusiveness as significant differences in aggression between high and low RF mothers were only observed in the absence of intrusiveness. These findings are of particular concern to parents because early infant aggression can lead to a trajectory of persistent antisocial behaviour later in life (Moffit et al., 2002). Therefore, these findings support interventions that target prenatal maternal RF as a determinant in decreasing child aggression. This is a particular relevance to high-risk mothers where insightfulness, a term related to RF, has shown to be a protective factor to postpartum stress (Martinez-Torteya et al., 2018).

Recent evidence shows that fathers’ RF are a protective factor against family risk due to economic disadvantage (Buttitta et al., 2019). However, due to the sparseness of RF evidence found in the present scoping review, it is not clear if the broader results discussed above are applicable to fathers as well as whole family units. Future work would benefit from sampling more diverse caregivers such as fathers, foster parents, and whole family units, rather than focusing solely on mother-infant dyads to deepen our understanding of RF's role as a determinant.

Based on the RF intervention studies found focusing primarily on mother caregivers, RF does seem to be a modifiable trait in adulthood. It is difficult to determine the strength of this plasticity due to the variability of terms used to capture this concept and especially since terms such as metacognition and theory of mind, as opposed to RF, are more commonly used in empirical studies for adults. Further work on modifying RF levels in adults would be a valuable area to explore, since the present focus has been on health outcomes in caregiver-child dyads.

4.4.3 Limitations

This scoping review investigated the range of evidence from published studies of RF assessments and interventions in caregiver-child dyads. Many variables across time will have an impact on caregiver-child dyads. Among these factors, a current prominent concern is pandemic illnesses, such as the SARS-CoV-2-pandemic, which undoubtably have an impact on this context (Köhler-Dauner et al., 2021). The literature on this is sparse and more work is needed, especially around impact of pre-vs. post-pandemic stressors on health (Fong & Iarocci, 2021).

The present scoping review did not account for large-scale disasters (such as COVID-19, fires, floods, etc.) but the negative mental health effects on families are noted. For instance, considering COVID-19 disrupting face-to-face therapeutic interventions, one recent study showed initial improvements in parental RF from a virtual attachment-based group intervention (Lewis et al., 2022). In terms of recessions, from a national sample in the United States in the early months of the COVID-19 pandemic, results from a study (Russell et al., 2020) show that parents/guardians who reported higher caregiving burden also reported higher anxiety, depression, and parent perceived child stress. These caregiver burden, mental health, and child perception of stress associations were, in turn, significantly associated with child-parent closeness and conflict, which indicate a "spillover" effect for parents struggling with mental health problems onto their child (Fong & Iarocci, 2021).

In other evidence (Kalil, 2013), the economic recession of 2007-2009 involved parental job loss, and residential instability which may drive negative later life outcomes for children. One narrative review (Makwana, 2019) found that psychological impact on children from disasters can manifest in post-traumatic stress disorder, depression, anxiety, emotional distress, and sleep disorders. These results are important to consider because additional overall population stressors may provide a “natural experiment” opportunity to further elucidate the determinants of RF within caregiver-child relationships. Due to sparseness of the RF literature, it was not possible to tap into this and look at issues such as the SARS-CoV-2-pandemic and effects of economic instability as it relates to RF outcomes in caregiver-child dyads from the perspective of overall determinants of health (Liu et al., 2020).

In addition, a quality appraisal was out of scope for the present scoping review since the aim was to systematically map out the evidence and gaps in knowledge for RF in caregiver-child dyads and to provide a foundation for future systematic reviews of subtopics within the RF literature.

Finally, this scoping review only included peer-reviewed manuscripts published in English, Spanish, French, German and Arabic. It is possible that this led to the omission of relevant studies published in other languages. However, given the resources available to our team we are confident that the search strategies and inclusion/exclusion criteria used captured a representative sample of the RF literature that is useful for offering future directions in this key area of research.

4.4.4 Conclusion

Our review summarizes evidence relating to RF assessments and interventions for caregiver-child dyads. The EDI lens that we used to frame the research question and select search criteria provides a list of studies sorted by type of study, study design, type of data, and population type. This review identified substantial gaps in studies including both biological sex and gender, ACEs, ethnic minority populations, and studies conducted in LMICs. Future work would benefit from including more comprehensive surveys on the populations studied with gender information and ACE background. Studies focusing on both Indigenous communities and LMICs are needed for us to understand potential disparities in health outcomes.

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Chapter 5. Brief Summary and Conclusion

The broad and deleterious impact of ACEs on society calls for effective and novel treatment approaches. Trauma-informed care offers a framework that seeks to understand how best to engage with individuals who have a significant history of adversity. Little Warriors is one example of a treatment facility designed with trauma-informed care principles in mind (i.e., safety defined by the individual, trauma-informed training for staff, cohort approaches, etc.). The research described in this thesis demonstrated long term treatment benefits for children with a history of child sexual abuse. A new and innovative method of clinical engagement with caregivers of children was also used successfully in the Little Warriors trauma-informed context. Trauma-informed care enables us to understand individual differences and the importance of determinants of health, such as caregiver-child dyadic health. Several reflective functioning assessment and intervention studies were identified that showed the importance of fostering such skills in caregiver-child dyads. The reflective functioning literature is growing, but future studies need to be expanded into low to middle income countries with gender measurements incorporated.

Trauma-informed care is flexible and the benefits are far broader than residential treatment facilities alone. Based on the positive evidence from this thesis, future areas of research in the application of trauma-informed care appear bright and there is plenty of room for scaling up in other health contexts.

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Appendices

Appendix 1

MeSH search Strategy

Ovid MEDLINE(R) ALL 1946 to March 10, 2021

Date searched: March 11, 2021

Results: 1100

1. mentalization/ or "theory of mind"/

2. (reflective functioning or mentalization or mentalisation or co-regulation or coregulation or mirror neurons or mind-mindedness or theory of mind or insightfulness).mp.

3. Metacognition/

4. (metacognition or meta cognition).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]

5. (parent* or maternal or paternal or mother* or father* or mom or moms or dad or dads).mp.

6. (1 or 2 or 3 or 4) and 5

Embase 1974 to 2021 March 10

Date searched: March 11, 2021

Results: 1446

1. mentalization/

2. mentalization-based treatment/

3. "theory of mind"/

4. (reflective functioning or mentalization or mentalisation or co-regulation or coregulation or mirror neurons or mind-mindedness or theory of mind or insightfulness).mp.

5. metacognition/ or metacognitive awareness/

6. (metacognition or meta cognition).mp.

7. (parent* or maternal or paternal or mother* or father* or mom or moms or dad or dads).mp.

8. (1 or 2 or 3 or 4 or 5 or 6) and 7

APA PsycInfo 1806 to March Week 1 2021 (OVID Interface)

Date searched: March 11, 2021

Results: 2356

1. mentalization/ or "theory of mind"/

2. (reflective functioning or mentalization or mentalisation or co-regulation or coregulation or mirror neurons or mind-mindedness or theory of mind or insightfulness).mp.

3. metacognition/

4. (metacognition or meta cognition).mp.

5. (parent* or maternal or paternal or mother* or father* or mom or moms or dad or dads).mp.

6. (1 or 2 or 3 or 4) and 5

CINAHL Plus with Full Text (EBSCO Host interface)

Search date: March 11, 2021

Results: 766

Deselect all equivalent subjects

((MH "Mentalization") OR (MH "Theory of Mind") OR metacognition OR meta cognition OR reflective functioning or mentalization or mentalisation or co-regulation or coregulation or mirror neurons or mind-mindedness or theory of mind or insightfulness) AND ((parent* or maternal or paternal or mother* or father* or mom or moms or dad or dads))

ERIC (EBSCO Host interface)

Search date: March 11, 2021

Number of results: 825

Deselect all equivalent subjects

(metacognition OR meta cognition OR reflective functioning or mentalization or mentalisation or co-regulation or coregulation or mirror neurons or mind-mindedness or theory of mind or insightfulness) AND ((parent* or maternal or paternal or mother* or father* or mom or moms or dad or dads))

Web of Science (Web of Science Interface)

Search date: March 11, 2021

Results: 2232

Advanced search

Ts=(metacognition OR meta-cognition OR reflective-functioning or mentalization or mentalisation or co-regulation or coregulation or mirror-neurons or mind-mindedness or theory-of-mind or insightfulness) AND ts=((parent* or maternal or paternal or mother* or father* or mom or moms or dad or dads))

Scopus (Scopus database)

Search date: March 11, 2021

Results: 2013

Advanced search

TITLE-ABS-KEY(metacognition OR meta-cognition OR reflective-functioning or mentalization or mentalisation or co-regulation or coregulation or mirror-neurons or mind-mindedness or theory-of-mind or insightfulness) AND TITLE-ABS-KEY ((parent* or maternal or paternal or mother* or father* or mom or moms or dad or dads))

Appendix 2

Inclusion Criteria

Population

- Parents of children up to and including 36 months of age

Study design

- randomized controlled trials (RCTs)
- case-control studies
- interrupted time series
- cohort studies
- cross sectional studies
- observational studies
- qualitative studies
- case series
- case studies

Systematic reviews, meta-analysis and narrative reviews will be included in the screening phase. However, the references will be checked for primary sources that meet our inclusion criteria, and the review will be excluded.

Measures

- Use of a validated psychometric scale as an outcome measure
- Reflective functioning scale (eg. used in the Adult Attachment Interview, etc), or;
    - Specific domain(s) – parental mental health, child attachment security, parent-infant interaction
- Interventions targeting reflective functioning/coregulation/mind-mindedness/mirror neurons/mentalization in caregiver-child dyads

Country of studies

- Any country

Date of publication

- No restrictions

Language

- No restrictions

Exclusion Criteria:

- Grey literature (including dissertations and theses)
- Posters
- Brief communications and letters to the editor
- Animal