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TOWARDS A MORE COMPREHENSIVE UNDERSTANDING OF *FOSTERING CONNECTIONS: THE TRAUMA-INFORMED FOSTER CARE PROGRAMME*: A MIXED METHODS APPROACH WITH DATA INTEGRATION

Maria Lotty, Eleanor Bantry-White, and Audrey Dunn-Galvin

Abstract: Foster carers require high-quality training to support them in caring for children with trauma-related difficulties. This paper describes a mixed methods approach that was applied to evaluate the complex intervention *Fostering Connections: The Trauma-Informed Foster Care Programme*, a recently developed trauma-informed psychoeducational intervention for foster carers in Ireland. A quantitative outcome evaluation and a qualitative process evaluation were integrated to capture a comprehensive understanding of the effects of this complex intervention. A convergent mixed methods model with data integration was used. Coding matrix methods were employed to integrate data. There was convergence among component studies for: programme acceptability, increased trauma-informed foster caring, improvement in child regulation and peer problems, and the need for ongoing support for foster carers. This research provides support for the intervention suggesting the importance of its implementation in Ireland. The integrative findings are discussed in relation to effects and future implementation.

Keywords: foster care; trauma-informed care; evaluation; mixed-methods

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According to Tusla, the national agency responsible for child care services, in 2019 in Ireland about 1 child in 200 below the age of 17 was in alternative care (5,916 children; Tusla Child and Family Agency, 2020). The reasons for their initial placement in care, and for remaining in care, were neglect (38%, 36%), child welfare concerns (36%, 40%), emotional abuse (12%, 12%), physical abuse (10%, 7%), and sexual abuse (4%, 3%; Tusla Child and Family Agency, 2020). Resource deficiencies exist in Ireland both for children in foster care and for foster carers (McElvaney & Tatlow-Golden, 2016). It is often the case that children have difficulty accessing treatments specific to their needs, despite high levels of attachment- and trauma-related difficulties (McNicholas & Bandyopadhyay, 2013).

In keeping with internationally recognised standards of best practice (CORU, 2019), the foster care system in Ireland is managed by professionally trained social workers assigned to child protection and fostering teams, which are predominantly governed by Tusla (Lotty, 2021). Social workers have the responsibility for recruiting, screening, and assessing potential foster carers, and providing ongoing support and training (Lotty, 2021). There is no national training policy (Irish Foster Care Association & Tusla, 2017); therefore, training varies from area to area and is dependent on local resources and expertise. Foster care services in Ireland operate in the context of an under-resourced and overstretched service which is reflected in a lack of evidence-based training for foster carers and of supports to meet children's needs, such as access to therapeutic services (Lotty et al., 2021a). Considering both the many stresses on foster carers of children who have experienced trauma, and the low availability of resources, *Fostering Connections: The Trauma-Informed Foster Care Programme* (hereafter *Fostering Connections*), a psychoeducational intervention for foster carers, was systemically developed in Ireland (Lotty, Bantry-White, et al., 2020). *Fostering Connections* seeks to support foster carers by increasing their capacity to provide trauma-informed care (TIC) to children and families involved in the child welfare system, thus reducing the children's trauma-related emotional and behavioural difficulties (Lotty, 2021). *Fostering Connections* represents a new departure in the state provision of support to foster carers in Ireland; this research is the first mixed methods evaluation of the programme.

A study that examined the level of need of children and young people (n = 4272) in the care of the Illinois child welfare system reported that many had experienced complex trauma that included neglect and family violence (Kisiel et al., 2009, pp. 148–149). In response to these challenges, a number of trauma-informed interventions and treatments have emerged (Black et al., 2012). A distinction must be made between specific trauma-informed treatments delivered by clinicians and interventions by non-clinicians. Outside a formal clinical setting, trauma-informed interventions can be carried out by practitioners and carers, including those with roles in social work, social care, therapeutic caregiving, residential care, education, and community work (Lotty, 2019). The three "pillars of TIC" — central components of these types of interventions — were first identified by van der Kolk (2005) and later by Bath (2008). As described by Bath (2008), they are (a) developing

the child's sense of safety, (b) promoting trusting carer–child relationships, and (c) teaching the child self-regulatory strategies and coping skills.

The TIC approach, which aims to provide a focused and effective intervention for children and their families who have experienced trauma, is based on a wider holistic biopsychosocial approach, rather than on approaches that are purely psychosocial (Lotty et al., 2021b). TIC focuses not only on children but also on their caregivers and those who seek to support them, that is, those who work directly with children and families. It recognises that all of these groups are affected by both primary exposure to trauma, and secondary exposure from caring for or working with children and their families that have experienced trauma (Lotty, 2019). TIC also goes beyond understanding the effects of trauma in that it emphasises the need for the child welfare system to apply that understanding in daily practice within the culture of organisations and within interagency partnerships. TIC is underpinned by a set of practice principles: safety, choice, trustworthiness, collaboration, and empowerment (Elliott et al., 2005; Substance Abuse and Mental Health Services Administration, 2014). TIC seeks to ensure that these principles consistently underpin social work practices at all stages (Levenson, 2017), which serves to support both the provider and survivor in experiencing "physical and emotional safety" (safety), ensuring they are "provided a clear and appropriate message about their rights and responsibilities" (choice), maintaining "respectful and professional boundaries" (trustworthiness), sharing "a significant role in planning and evaluating services" (collaboration), and creating "an environment that allows individuals to feel validated and affirmed with respects to all contact with the service" (empowerment; Institute on Trauma and Trauma-Informed Care, 2015).

It is well established that many children in the foster care system have suffered multiple and prolonged experiences of abuse prior to entering the system (Greeson et al., 2011) and have difficulties in their neurobiological, psychological, emotional, social, and cognitive development, as well as often having poor mental and psychological health outcomes (Tarren-Sweeney et al., 2013). Foster carers are often supported to care for children and young people with complex needs through psychoeducational programmes (Benesh & Cui, 2017). TIC psychoeducational programmes for foster carers are a growing area of practice in which support for foster carers is drawn from a biopsychosocial theoretical model (Bath & Seita, 2018) based on a multidisciplinary integration of neurobiology, trauma, attachment, and resilience research (Blaustein & Kinniburgh, 2018). Lotty, Bantry-White, et al. (2020) described the core features of these programmes as (a) understanding the impact of trauma on children, (b) understanding the impact on the caregiver of caring for children who have experienced trauma, and (c) developing skills that address trauma impact through remedial relationships.

Psychoeducational programmes for foster carers are complex interventions that by their nature require development and evaluation to be approached using several methodologies (Craig et al., 2008). The Medical Research Council (MRC) framework for the development and evaluation of complex interventions recommends taking both quantitative and qualitative approaches in the evaluation stage (Craig et al., 2008): a quantitative approach to assess intervention effectiveness,

and a qualitative approach to evaluate the intervention process. The MRC framework recognises the limitations of experimental studies when considering the development and evaluation of complex interventions (Penkunas et al., 2020). Whilst randomised controlled trials (RCT) are considered to be the gold standard of intervention evaluation, as a singular approach they limit the evaluation of complex interventions. They cannot provide needed data on how complex interventions work and how contextual issues may influence intervention impacts. Process evaluations, however, can provide valuable data to complement an effectiveness study. Process evaluations may illuminate how the intervention was implemented, how it works (or does not work), and the influence of contextual issues, all of which could contribute to optimising intervention impacts (Moore et al., 2015). Process evaluations are not viewed as replacing an effectiveness study. Thus, the MRC advocates that "wherever possible, evidence should be combined from different sources that do not share the same weakness" (Craig et al., 2008, p. 980). Therefore, a mixed methods approach aligns with the MRC framework (Farquhar et al., 2011).

Research that evaluates psychoeducational interventions aimed at foster carers is scarce (Kaasbøll et al., 2019). Examples of rigorous research are limited (Festinger & Baker, 2013). This may be due to research being primarily produced through small-scale evaluations, which may be reported to governments rather than in academic articles (Kaasbøll et al., 2019). Existing research is primarily focused on effectiveness studies (Kaasbøll et al., 2019), which have reported mixed results (Festinger & Baker, 2013; Solomon et al., 2017).

In a recent review that examined the effects of TIC psychoeducational programmes for foster carers and adoptive parents, the inclusion criteria were met by 15 studies, all published between 2009 and 2020, reflecting that this is a growing area of practice (Lotty et al., 2021b). However, overall, Lotty et al. (2021b) report that evidence to support TIC psychoeducational interventions is limited, albeit with some suggestion that these interventions may increase caregivers' capacity to provide children with TIC and reduce children's trauma-related difficulties. The weakness of evidence was reflected in mixed findings, diverse designs and measures, and methodological weaknesses across the studies.

The inclusion of qualitative approaches in evaluations is more likely to illuminate the reasons behind negative results and promote successful refinement of interventions (Festinger & Baker, 2013). There are some examples of qualitative evaluation studies reported separately (Hewitt et al., 2018; Robson & Briant, 2009). There are also some examples of mixed methods evaluations, but data integration was not described (Conn et al., 2018; Gibbons et al., 2019). We have been unable to identify any mixed methods evaluation studies that explicitly described the data integration and integrated findings of a psychoeducational intervention for foster carers.

The Fostering Connections *Intervention*

Fostering Connections is a manualised trauma-informed psychoeducational intervention. It was facilitated by two trained practitioners and one trained foster carer over 6 weeks (6 sessions of 3.5 hours each) in a community setting; the intervention was delivered to two cohorts in

September and October 2017 (Lotty, Bantry-White, et al. 2020). The content is cumulative, based on information on trauma, attachment, fostering resilience, and collaborative working (Lotty, 2019). The format is based on experiential exercises, videos, demonstration role-play, discussion, and at-home exercises with limited slides. Foster carers received a toolkit and a homework copybook (Lotty, Dunn-Galvin, et al., 2020).

The toolkit was developed as a resource for foster carers to refer to during and beyond the programme. It contained information presented in each session, practical tools to support the foster carer, links to videos used, and resources (e.g., websites, book lists) to support ongoing learning. The homework copybook was a reflection journal that participants were asked to complete after each session with guided exercises to reflect on their learning in relation to the child or children they were caring for. *Fostering Connections* aims to develop foster carers' understanding and knowledge of trauma impact and to develop effective strategies to promote restorative relationships with children. This, in turn, aims to reduce the children's trauma and attachment-related difficulties within the context of the Irish care system (Lotty, Dunn-Galvin, et al., 2020).

Fostering Connections was evaluated by using the two elements identified by the MRC Framework: (a) assess effectiveness, and (b) evaluate the process (Craig et al., 2008). This framework was selected as it supports the development and evaluation of complex interventions extensively used in health and social care contexts. The first element was addressed by undertaking a quasi-experimental study that assessed the effectiveness of *Fostering Connections* to increase foster carers' capacity to provide children with TIC and in turn to reduce children's emotional and behavioural difficulties (Lotty, Dunn-Galvin, et al., 2020). The second element was addressed by a qualitative study that completed a process evaluation (Lotty, Bantry-White, et al., 2020) that examined how the programme was experienced by foster carers and facilitators and how the experience could inform future programme development and implementation. Three core processes outlined by the MRC guidance on process evaluations were explored. These were: (a) programme implementation (how the programme was delivered), (b) the change process (how intervention activities and participants' interactions with them generated change), and (c) contextual issues (how external factors to the programme could impede or strengthen the effects of the intervention (Moore et al., 2015).

Based on the research position taken by Lotty (2019) that the contribution to empirical knowledge is of prime importance in this research, the quantitative data was conceptualised as the primary database. To preserve the distinct methodological and paradigmatic integrity of each method, the integration of quantitative results and qualitative findings occurred after data were analysed and results identified (Onwuegbuzie et al., 2009). The qualitative study collected data — the secondary dataset — supporting and overlapping that of the quantitative study. By employing a mixed methods approach, the integration of findings aimed to produce more extensive analysis and a more robust evaluation study of *Fostering Connections* than would have been possible using either approach alone (Creswell & Plano Clark, 2011). The findings from the quantitative study and the qualitative study were compared to assess how they related to each other.

In this paper, we present the integration of findings from each study using a mixed-methods approach (Figure 1), the first mixed-methods evaluation of *Fostering Connections*. Taken together, our findings provide a comprehensive evaluation of the *Fostering Connections* intervention. Our study also contributes to the research literature by detailing our data integration methodology.

Introduction to Mixed Methods Design

A convergent mixed methods model with data integration (Curry et al., 2013; Fetters et al., 2013) was used (Figure 1). The findings from two component studies, a quantitative outcome evaluation and a qualitative process evaluation, were integrated using a triangulation protocol (Farmer et al., 2006). Data were integrated from two respondent sources, foster carers and facilitators, with the aim of strengthening the overall evaluation, similar to other studies (Heslehurst et al., 2015). The foster carers participated in both component studies and the facilitators participated in the qualitative study only. The findings of each study have been reported separately elsewhere (Lotty, Bantry-White, et al., 2020; Lotty, Dunn-Galvin, et al., 2020). Findings were integrated into a single study based on all available data that were likely to strengthen the overall study (Gorard & Taylor, 2004). Here we summarise the findings of the component studies, and then the findings of the integration of the component studies in line with the recommendations of the triangulation protocol (Farmer et al., 2006; O'Cathain et al., 2010). Ethical approval was granted by both the Social Research Ethics Committee in University College Cork and by the Tusla Ethics Review Group.

Method of Integration of the Component Studies

The triangulation protocol used coding matrix methods to integrate the data, following six key steps (Farmer et al. 2006, O'Cathain et al., 2010):

Step 1. Sorting: This process involved preparing the data for integration. The findings from each dataset were reviewed and sorted by comparing the identified key themes (results and findings) from each dataset to identify similarities and differences.

Step 2. Convergence coding: Convergence matrix methods were used to compare identified similarities and differences. The convergence coding scheme was guided by Farmer et al. (2006), O'Cathain et al. (2010), and similar research (Heslehurst et al., 2015). It was defined as:

- Convergence: full agreement between both sets of results.
- Complementarity: findings suggest complementary information on the same issue.
- Silence: themes arise from one component study but not the other.
- Dissonance: there is disagreement between the datasets.

In applying this coding scheme, it was determined whether there was convergence (agreement) based on the meaning and prominence of the theme and also on the coverage and specific examples of the theme.

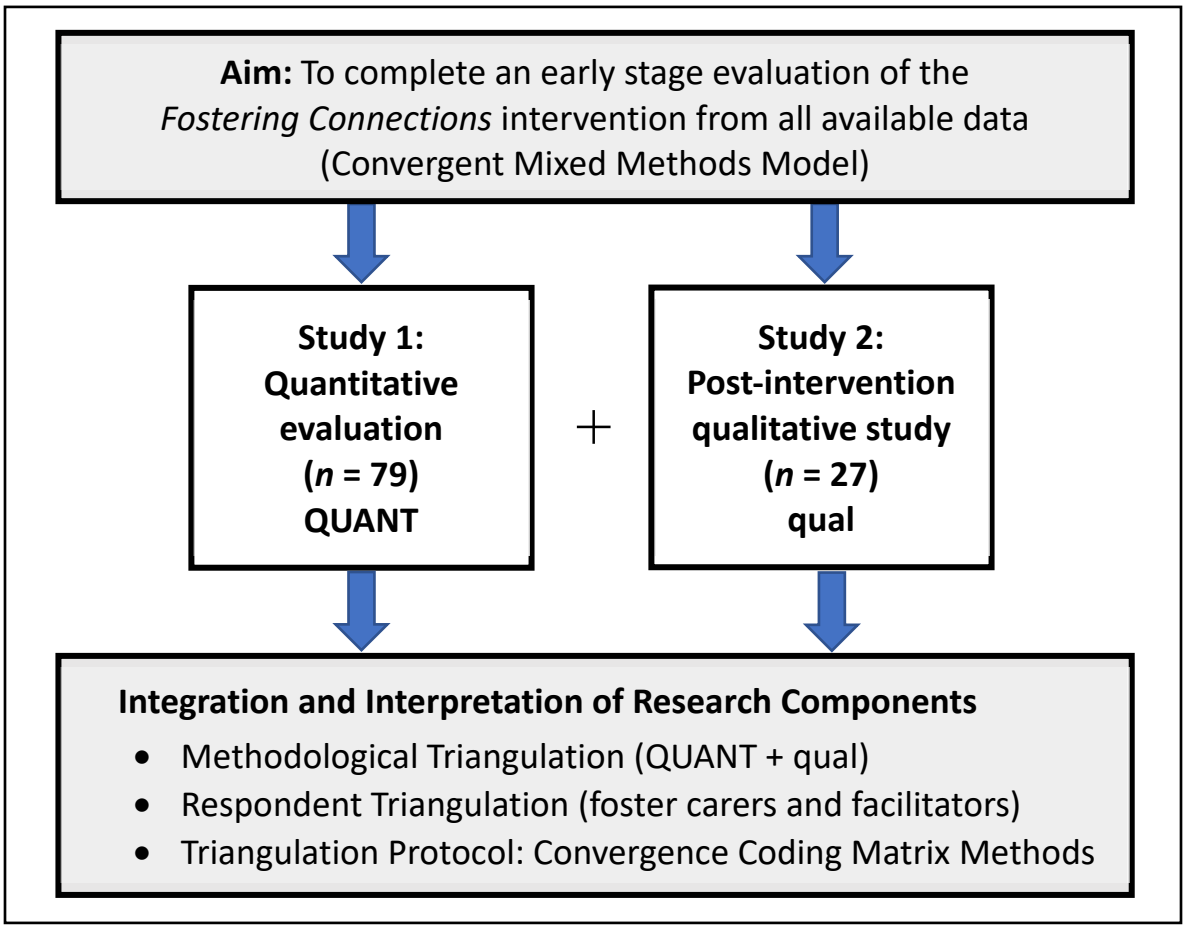
Step 3. Convergence assessment: An overall assessment was carried out on the level of convergence between the two component studies in relation to each theme.

Step 4. Completeness assessment: For each identified theme, the combined finding was assessed for completeness by evaluating the differences in nature and scope of what each component study brought to the combined finding.

Step 5. Researcher comparison: The three authors compared assessments of convergence and dissonance, reaching agreement on triangulated findings.

Step 6. Feedback: A summary of the triangulated results was presented to the stakeholder group on May 16, 2019. Feedback and comment were invited from the stakeholder group members, and the nuances of the mixed methods approach were explored. The stakeholder group members discussed the research results and felt that they reflected local practices, contextual influences, and the implementation of the programme during the study period, reinforcing the validity of the results.

Figure 1. *Flowchart Showing Convergent Mixed Methods Model*



Note: QUANT = quantitative, qual = qualitative.

Study 1: Quantitative Evaluation Study

Methodology

The objective of the quantitative study (Lotty, Dunn-Galvin, et al., 2020) was to assess intervention effectiveness through testing four research hypotheses (three primary and one secondary) that reflected the following research questions:

When foster carers receive *Fostering Connections*, do the outcomes include:

- Increased knowledge of trauma-informed fostering?
- Increased tolerance of the child's misbehaviour?
- An increase in their fostering efficacy? (Fostering efficacy refers to foster carers' confidence in their capacity to care for children in foster care, who often have trauma-related difficulties.)
- A reduction in children's emotional and behavioural difficulties?

The quantitative study also reported findings from a satisfaction questionnaire that was administered post-intervention. A longitudinal non-randomised quasi-experimental study design with a control group was used. Quantitative data were collected over four time-points (Time 1, before the intervention; Time 2, on completion; Time 3, at 16 weeks post-intervention; and Time 4, at 15 months post-intervention) to measure the degree of change occurring over the course of the intervention on the predefined outcomes.

Foster carers were recruited from the Irish national child welfare agency in two geographical sites in the south of Ireland in May 2017 ($N = 128$). Following assessment for eligibility, 79 foster carers were included in the study. A broad recruitment strategy was applied as *Fostering Connections* is targeted at all approved foster carers. Participants were allocated to either the intervention group or the control group according to the geographical area in which they resided. This strategy was employed to reduce the risk of contamination from the intervention group to the control group and to make attending the programme more accessible for intervention participants. The study comprised 79 foster carers (intervention group = 49, control group = 30). The 79 foster carers reported on 121 children. The average age in both groups was 49 years. The majority of participants were female (81%, $n = 64$), in a relationship (82%, $n = 65$), Irish (92%, $n = 73$), and were general foster carers (67%, $n = 53$). Demographically, the intervention group was roughly similar to the control group: education levels (completed secondary school: 51% vs. 46%), number of birth children living at home (1–2 children: 53.1% vs. 36.7%), income levels (20K–50K: 44.9% vs. 55.2%), and the number of years they had been fostering (3–5 years: 36.7% vs. 23.3%). Differences in the groups were found for their residence and the number of children that they fostered. Those in the intervention group were more likely to live in an urban location (55.1% vs. 23.3%; $p = .006$). It was more common for one child to be fostered in the control group (56.7%); in the intervention group, fostering two children was more common (59.2%; $p = .009$) (Lotty, Dunn-Galvin, et al., 2020).

Measures

The Knowledge and Beliefs Survey (KBS) is a 33-item self-report measure designed to assess beliefs and attitudes related to caring for children who have experienced trauma (Murray, 2014). The KBS has three separate scales: Trauma-Informed Parenting, Tolerance of Misbehaviour, and Parenting Efficacy. It was administered at all four time-points of the study.

The Strengths and Difficulties Questionnaire (SDQ), a short 25-question behavioural screening questionnaire that can be completed by carers (Goodman et al., 2001), assessed children's emotional and behavioural difficulties. The SDQ has five subscales: four that assess emotional problems, conduct problems, hyperactivity/inattention, and peer relationship problems, which together generate a total difficulties score; and one to assess prosocial behaviour. The SDQ also contains eight questions on the impact of an intervention using a Likert scale. The study used two of these questions. Intervention participants were asked: How helpful did you find the intervention to be in other ways — for example, by providing you with more information or making your child's problems more bearable? All participants were asked: Are your child's problems worse since the last questionnaire? The SDQ was administered at all four time-points of the study.

Only the intervention group participants completed the satisfaction questionnaire ($n = 46$) which was administered at Time 2.

Analysis

A two-way mixed ANOVA was conducted to investigate if there were changes across the four time-points (baseline, immediately post-intervention, 16 weeks post-intervention, and 15 months post-intervention) and, if so, whether the changes differed significantly between the intervention and control groups. Group, time, and the interaction of group by time (group*time) were included as fixed effects in the model. The interaction of group*time tested whether changes over time differed significantly between the intervention and control groups; these were of the most interest in this study. If the interaction was found to be statistically significant, post-hoc pairwise comparisons between the intervention and control groups were performed at each time-point separately. Post-hoc comparisons between Time 4 and Time 1 were also performed for each group. The effect size of the interaction was measured using partial eta squared (η^2; Lotty, Dunn-Galvin, et al., 2020). Using Cohen's guidelines, 0.01 was considered a small effect, 0.06 a medium effect, and 0.14 a large effect (Cohen, 1988, pp. 284–287). Descriptive statistics were calculated and the means and standard deviations were reported for the nine questions on the satisfaction questionnaire that were rated on a 5-point Likert scale. All statistical analyses were performed in IBM SPSS Statistics (Version 24, IBM Corp, Armonk, NY, USA).

A separate dataset containing cases and identification numbers relating to each child was used to facilitate statistical analysis of the SDQ questions on the impact of the intervention. Frequencies were then calculated and reported with regard to participants' responses on the Likert scale for each question.

Quantitative Results

Primary Outcome Results

The quantitative results indicated that foster carers who attended *Fostering Connections* had improved scores on knowledge of trauma-informed fostering, tolerance of child misbehaviour, and fostering efficacy, supporting the primary outcome hypotheses. Scores improved on the Trauma-Informed Fostering scale of the Knowledge and Beliefs Survey (KBS), suggesting that foster carers' trauma-informed fostering increased following the intervention. The interaction of group*time was statistically significant (F [2.43, 155.32] = 8.916, $p < .001$), with a medium effect size (0.12), indicating that changes in the Trauma-Informed Fostering score over time differed between the intervention and control groups. Scores improved on the Tolerance of Misbehaviour scale of the KBS, suggesting that foster carers' tolerance of child misbehaviour increased following the intervention. The interaction of group*time was statistically significant (F [2.57, 164.21] = 4.55, $p = .007$)], with a medium effect size (0.07), indicating that changes in the Tolerance of Misbehaviour score over time differed between the intervention and control groups. Scores improved on the Fostering Efficacy scale of the KBS, suggesting that foster carers' fostering efficacy increased following the intervention. The interaction of group*time was statistically significant, (F [2.68, 171.20] = 10.08, $p < .001$), with a large effect size (0.14), indicating that changes in the Fostering Efficacy score over time differed between the intervention and control groups. For all primary outcomes, the interaction of group*time was statistically significant demonstrating that changes over time differed between the intervention and control groups. At all intervention time-points, foster carers in the intervention group had significantly higher (better) mean scores than foster carers in the control group. For two outcomes, the effect size was medium (Trauma-Informed Fostering: 0.12, Tolerance of Misbehaviour: 0.07) while for the third outcome, the effect size was large (Fostering Efficacy: 0.14; Lotty, Dunn-Galvin, et al., 2020).

Secondary Outcome Results

The quantitative results showed that there was a reduction in observed child emotional and behavioural difficulties, supporting the secondary outcome hypothesis that these problems would be reduced by the intervention. Regarding Time 4 versus Time 1, foster carers in the intervention group reported a reduction (i.e., improvement) in mean scores and the foster carers in the control group reported an increase (i.e., worsening) in mean scores. Foster carers in the intervention group reported a significantly higher reduction (i.e., improvement) in mean scores than did foster carers in the control group for total observed child emotional and behavioural difficulties over the course of the study (F [3, 177] =3.385, $p = .034$), with a small effect size (0.05). There was variation in the results of the subscales on the SDQ. Two of the subscales indicated small and medium effect sizes (Hyperactivity = 0.05; Peer Problems = 0.07). For the secondary outcome, the effect size was small (SDQ: 0.05). Compared with British norms, the children had higher mean scores (YouthinMind, n.d.) in the emotional and behavioural difficulties subscales (emotional, conduct,

hyperactivity, and peer problems) and lower scores on the prosocial subscale at baseline (Lotty, Dunn-Galvin, et al., 2020).

Results of Intervention Impact Questions

The questions on intervention impact from the SDQ results demonstrated that, for more than 91% of foster carers who participated in the intervention, *Fostering Connections* was beneficial in terms of supporting their care of the children at all time-points post-intervention. Moreover, the intervention group reported higher rates of improvement in the children's problems than did the control group at each post-intervention time-point (Time 2 = 44.6% vs. 15.7%, Time 3 = 58.9% vs. 42.2%, Time 4 = 57.2% vs. 50.0%).

Results of the Post-Intervention Satisfaction Questionnaire

Foster carers reported a high level of satisfaction with the intervention. Intervention design, content, the foster carer facilitator's contribution, and emphasis on developing skills were all deemed satisfactory. The same was true for aspects of the intervention experience: group facilitation, learning methods, and feeling comfortable in the group. High rates of attendance (88% attended at least 5 of the 6 sessions) were also seen. Foster carers reported that receiving the intervention earlier in their fostering career would have been more beneficial and some suggested compulsory attendance. Foster carers also reported the need for follow-up training. As teachers are important players in the foster care system, participants felt that teachers should receive training, since trauma awareness in teachers would help to support children in foster care.

Study 2: Qualitative Study

Methodology

The qualitative study (Lotty, Bantry-White, et al., 2020), which explored how the *Fostering Connections* intervention was experienced by foster carers and facilitators, followed the MRC's guidance on process evaluations (Moore et al., 2015). Thus, this study was concerned with dimensions of (a) implementation, or how the intervention was delivered; (b) the change process, or how intervention activities and participants' interactions with them generated change; and (c) contextual issues, or how factors external to the intervention, such as ongoing supports for facilitators and follow-up training, could impede or strengthen the intervention's effects (Moore et al., 2015). All foster carers and facilitators that were involved, either as participants or in the delivery of the programme, were invited to participate in the focus groups. The term "facilitators" refers here to all facilitators (foster carers and practitioners) who delivered the programme, as well as facilitators-in-training who observed the programme. In October 2017, three post-intervention focus groups were carried out: two foster carer groups and a facilitator group. The groups were of one-hour duration. A sequence of semi-structured open-ended questions was asked that sought to understand how the programme was implemented, the process of change brought about by the programme, and contextual matters that could support future implementation of the programme.

Foster carers were invited to respond to questions on whether they had prior expectations of the programme, how they experienced the programme, the rewards and challenges of attending, and how they had applied this learning to their fostering. Facilitators were invited to respond to questions on what their expectations of the programme were, how they experienced the programme, the challenging aspects of facilitating, and how they felt foster carers experienced the programme. They were also invited to express how they thought foster carers would apply their learning from the programme and if there were any areas they could identify in the programme that they felt needed improvement (Lotty, Bantry-White, et al., 2020).

The discussion was recorded using a digital voice recorder and transcribed verbatim. Gender differences, whether participating as a couple, and fostering type (general and relative) were represented in both foster carer groups. The three focus groups comprised 21 participants, and written feedback was received from another six. Of the 27 total participants, 17 were foster carers and 10 were facilitators. The four male participants were all foster carers. Three foster carers were kinship carers. Thematic analysis was used to analyse data (Braun & Clarke, 2006). All data were uploaded to NVivo 12 Plus software, which was used for data storage, coding, and theme development (Lotty, Bantry-White, et al., 2020).

Qualitative Findings

Four main themes were identified in the study: (a) facilitating the reflective process, (b) transformative learning, (c) the carer–child relationship, and (d) sustainability. The findings are summarised here under the following headings: Implementation of the Intervention, The Process of Change, and Future Intervention Development and Implementation (Lotty, Bantry-White, et al., 2020).

Implementation of the Intervention

The findings showed high rates of satisfaction with the intervention (design, content, and learning methods). The content and methods included discussion groups, videos, experiential exercises, and demonstration role-play. Foster carers were pleased that quotes were used from actual foster carers and that the case studies used in the intervention were developed from local foster carers' experiences. The homework copybook and the toolkit were also identified as useful to support learning. Participants expressed approval of the practical orientation of the intervention, the experiential group-work format, sharing experiences, and being emotionally engaged with the material, which they felt was facilitated by a feeling of psychological safety in the group. The contribution of the foster carer facilitator was viewed as an essential component of the intervention. Foster carers felt it would have been beneficial if they had been able to attend the intervention sooner in their fostering careers and the majority expressed a desire to make the intervention compulsory for foster carers.

The Process of Change

Foster carers who attended the intervention appear to have undergone a process of change. This involved a reflective process that led to transformative learning (Mezirow, 1990), which supported a better understanding of TIC. The reflective process also led to changes in the carer–child relationship. The children benefited from their foster carers adopting a more trauma-informed approach, resulting in a reduction in the children's emotional and behavioural difficulties over the study period. This change process is described in three stages: (a) the reflective process, (b) transformative learning, and (c) the carer–child relationship.

The reflective process: The carers engaged in a reflective process that was facilitated by the use of experiential learning methods in a group work milieu. The reflective process was mediated by four elements recognised as: reflection on experience, emotional engagement, being able to understand the child's experience (seeing through the child's eyes) and sharing with the group (stories shared). A feeling of safety and containment within the group work setting was experienced by foster carers. The reflective process was identified by participants as an important stage in the change process, which led to transformative learning.

Transformative learning: Foster carers underwent a process of transformative learning that reoriented unsupportive frames of reference to enable the carers to become more reflective and open to change. This was instigated by engagement in a reflective process in which they critically appraised their beliefs and perceptions about the children's difficulties. The transformative learning had three elements, identified as: reframing their experiences, changing their mindset about the children's experiences (to a trauma-informed perspective), and increasing their confidence as foster carers. This confidence was associated to a sense of hopefulness about the children's future and feeling the skills they had learned made them better equipped to care for the children. Thus, the qualitative findings suggest a pathway from transformative learning to changes in the carer–child relationship.

The carer–child relationships: Foster carers adopted a more trauma-informed approach in their interactions with the children. This involved responding in calmer and reflective (less reactive) ways to the children's behaviours that they had found challenging, and becoming more focused on developing a supportive relationship with the children. Foster carers described changing their approach to responding to challenging behaviours, creating more opportunities to connect with the children through positive experiences, and communicating with the children in more positive ways (such as bringing more humour to these interactions). The qualitative findings suggest the existence of a pathway from foster carers responding to the children in more trauma-informed ways to positive changes in the children themselves. The foster carers described the children as being generally calmer and more communicative, along with exhibiting improved behaviour (including playing well with friends).

Future Intervention Development and Implementation

The qualitative findings suggest that some contextual issues need to be addressed to sustain these changes and to support future implementation of the intervention. Supports for foster carers, facilitators, and training for stakeholders in foster care were highlighted.

Foster carers need ongoing supports such as social worker support, follow-up training, and support groups. Foster carers felt that receiving the intervention earlier in their fostering career (after the approval stage) would have been helpful. The majority of participants in the study expressed a wish to make the intervention compulsory for foster carers. Attending as a couple was seen as an added benefit by those who did so, as they were likely to support each other's learning through shared experiences and ongoing discussions.

Supports are also required for facilitators to enhance the implementation of the intervention. Facilitators identified the need for support in preparing the intervention, coping with the emotional impact of the delivery of the intervention, managing the level of disclosure in the group, and balancing other work commitments. Participants (both facilitators and foster carers) highlighted the need for more collaborative practices between social workers and foster carers. These were identified as ensuring that foster carers receive all relevant information on the child and that foster carers' views are represented in child planning meetings. Participants felt that TIC training would also be beneficial for other professionals who play a role in supporting children in foster care to ensure consistency of approach.

Findings

Integration of Results: Studies 1 and 2

The integration of the quantitative (study 1) and qualitative (study 2) component studies identified four metathemes: Acceptability of *Fostering Connections*, Trauma-Informed Foster Caring, Child Progress, and Sustainability. Following the steps described above in the Method of Integration section, the integration focuses on the levels of convergence, complementarity, dissonance, and silence between the two studies in relation to each theme.

Metatheme 1: Acceptability of Fostering Connections

There was convergence found across the studies in the acceptability of the intervention. Convergence was found in subthemes of intervention relevance, intervention experience, and attendance. See Table 1.

Table 1. *Convergence Coding Matrix for Metatheme 1: Acceptability of Fostering Connections*

Metasubtheme	Study 1 (QUANT) (Satisfaction questionnaire and attendance rate)	Study 2 (qual)	Convergence assessment
1. Intervention relevance	High satisfaction was reported with design, content, foster carer facilitator's contribution, and emphasis on skills in the intervention. High attendance rates were recorded.	Foster carers and facilitators described high satisfaction with design and content. Quotes and case studies based on local experiences, foster carer facilitator's contribution, and emphasis on skills in the intervention were highly acceptable to carers.	Convergence
2. Intervention experience	High satisfaction was reported for the overall experience. Learning methods, experiential exercises, case studies, facilitation, and feeling comfortable were indicated as important factors in foster carers' experience of the intervention.	Participants described high satisfaction with the intervention experience; they valued experiencing emotional engagement through videos, case studies, experiential exercises, and sharing of stories in the group. They also liked engaging with the reflective homework and toolkit. Foster carers described feeling safe to engage in the group.	Convergence
3. Attendance	Foster carers reported that receiving the intervention earlier would have been beneficial and that attendance should be made compulsory.	Foster carers felt that attending the intervention earlier would have been beneficial. The majority felt that all foster carers' attendance should be compulsory.	Convergence

Metatheme 2: Trauma-Informed Foster Caring

There was convergence and silence found across studies for trauma-informed foster caring. Convergence was found in the subthemes of TIC knowledge, TIC attitude, and increased confidence. Silence was found across studies in fostering reflection and TIC carer–child interaction, which were not examined in the quantitative study. The qualitative study illuminated the changes that foster carers made in developing their capacity to be reflective about fostering. As noted above, this reflective process involved the dimensions of reflection on past experiences, emotional engagement, being able to see the child's perspective (seeing through the child's eyes) and sharing in the group (stories shared) during the intervention. The qualitative study also illuminated ways that foster carers changed in their interactions with the children: they became more aware and regulated in responding to child misbehaviour and were motivated to create connecting opportunities that would promote positive carer–child relationships. See Table 2.

Table 2. *Convergence Coding Matrix for Metatheme 2: Trauma-Informed Foster Caring*

Metasubtheme	Study 1 (QUANT) (Experimental study)	Study 2 (qual)	Convergence assessment
1. Increased TIC knowledge	Increased knowledge of trauma-informed fostering was reported in the intervention group compared to the control group.	Foster carers and facilitators described an increase in understanding and awareness of the impact of trauma on children and on caregivers of traumatised children. Foster carers described a process of reframing existing knowledge to a TIC perspective.	Convergence
2. Increased TIC attitude	Increased tolerance of child misbehaviour was reported in the intervention group compared to the control group. SDQ (impact question 1) reported high rates of child problems being more bearable at Times 2, 3, and 4.	Foster carers described how they had changed their "mindset". They described a shift in their thinking from a less tolerant, personalising, and judgemental stance to a more reflective, empathetic, and trauma-informed understanding of child behaviour.	Convergence
3. Increased fostering confidence	Increased fostering efficacy was reported in the intervention group compared to the control group.	Participants described foster carers feeling more confident and hopeful. Confidence was linked to feeling more equipped to provide care.	Convergence
4. Fostering reflection	Not applicable	Participants described foster carers engaging in a reflective process	Silence
5. TIC carer–child interaction	Not applicable	Foster carers described interacting with the children more calmly and creating more connecting experiences.	Silence

Metatheme 3: Children's Emotional and Behavioural Difficulties

There was convergence and complementarity across studies in relation to child progress. Convergence was found in the level of need, fostering time, improving children's regulation, and peer problems. There was complementarity across studies regarding improvement in problems the children were experiencing: the quantitative study reported that child problems had improved generally; the qualitative study reported that foster carers saw improvement in children's communication and behaviour. See Table 3.

Table 3. *Convergence Coding Matrix for Metatheme 3: Children's Emotional and Behavioural Difficulties*

Metasubtheme	Study 1 (QUANT) (Experimental study)	Study 2 (qual)	Convergence assessment
1. Level of need	The children had higher mean scores than the national (British) norms in difficulties subscales and lower scores on the prosocial subscale at baseline.	Participants described the children the foster carers were caring for as having high levels of difficulties.	Convergence
2. Changes over time	Foster carers in the intervention group reported improvement in child outcomes at Time 4 only compared to the control group (SDQ scale).	Owing to the children's difficulties, facilitators felt that it would take time to see changes in them.	Convergence
3. Improved child regulation	Foster carers in the intervention group reported a higher reduction in child hyperactivity over the 15-month study period than those in the control group.	Foster carers described changes in the children in terms of the children being calmer overall.	Convergence
4, Improvement in peer problems	Foster carers in the intervention group reported a higher reduction in child peer problems over the 15-month study than did those in the control group.	Foster carers described improvement in playing with friends.	Convergence
5. Improvement in child problems	For SDQ impact question 2, the intervention group reported the children's problems had improved compared with the control group at Times 2, 3, and 4.	Foster carers described their feeling that the children were communicating more and that their behaviour had improved.	Complementarity

Metatheme 4: Sustainability

In relation to sustainability, there was convergence, complementarity, and silence across studies. Convergence was found in the subtheme of supporting foster carers. Complementarity was found in the subtheme of training for stakeholders in foster care. Silence was found in the subtheme of supporting facilitators. See Table 4.

Table 4. *Convergence Coding Matrix for Metatheme 4: Sustainability*

Metasubtheme	Study 1 (QUANT) (Satisfaction questionnaire)	Study 2 (qual)	Convergence assessment
1. Supporting foster carers	Foster carers indicated they needed follow-up training to support their learning.	Foster carers and facilitators described the need for ongoing support and training to sustain their learning.	Convergence
2. Training for stakeholders	Foster carers indicated training in TIC was needed for teachers.	Foster carers and facilitators described the need for those working in foster care to receive TIC training.	Complementarity
3. Supporting facilitators	Not applicable	Facilitators described their need for supports to aid their facilitation of the intervention.	Silence

Integrated Results

A summary of the integrated results is presented in Table 5.

Table 5. *Summary of Integrated Results*

Metatheme	Convergent Results (QUANT = qual)	Complementary Results (QUANT + qual)	Silent Results (QUANT)
Acceptability	1. Intervention relevance 2. Intervention experience 3. Attendance		
Trauma-informed foster caring	1. Increased TIC knowledge 2. Increased TIC attitude 3. Increased fostering confidence		4. Fostering reflection 5. TIC carer–child interaction
Children's emotional and behavioural difficulties	1. Level of need 2. Fostering time 3. Improved child regulation 4. Improvement in peer problems	5. Improvement in child problems	
Sustainability	1. Supporting foster carers	2. Training stakeholders	3. Supporting facilitators

Limitations

The data were obtained through self-reported measures only, which is a limitation of the study and entails potential validity problems (Barker et al., 2002). In this case, the data relied on perceptions of foster carers and facilitators only. This study's potential bias in self-reporting could arise from the participant's relationship with the child, with the agency, and with the researcher; previous experience of fostering; and perspective on TIC. Future studies should include reports from other perspectives such as those of teachers and social workers. This study also did not include children's views. Given the possible burden imposed on children by involving them in early-stage intervention research, relying on foster carers and facilitator reports seemed to be a less problematic route. However, including children as participants will be considered for future research. It is possible that using additional methods such as observation would have yielded a deeper understanding of the programme.

The collection of both forms of data (quantitative and qualitative) overlapped. Data were gathered in the qualitative study between Time 2 and Time 3 of the experimental study. This was necessary to capture the participants' experience of the intervention. Waiting until after Time 4 (15 months post-intervention) to collect data would probably have reduced participants' recall of intervention experiences and might have reduced the level of participation in the study. However, the timing of the qualitative study may have introduced bias. The lead researcher (Lotty) was both the intervention developer and the lead facilitator of the intervention. Thus, allegiance bias posed a risk when interpreting and reporting findings (Munder et al., 2011).

The differences in data type limited the level of integration that was practical. The datasets differed in their purpose, type of data, and content; thus, the nature and coverage of the findings identified in each component study also differed. The two respondent sources (facilitators and foster carers) in this research were drawn from one foster care service, which likely meant that they had some shared understandings at the outset regarding foster care. This too could be criticised as methodologically inappropriate (Bazeley, 2009). However, similar to other studies, we took a pragmatist approach in this research with the aim of eliciting a more comprehensive understanding of the intervention in one foster care service by using two different respondent sources (Heslehurst et al., 2015). The lack of dissonance could have reflected the difficulty in fully integrating the two datasets (quantitative and qualitative) owing to their marked epistemological differences (Heslehurst et al., 2015). The use of mixed methods has been criticised in this regard (Brannen, 2005) as dissonant findings are likely to be important in increasing understanding and programme implementation. Nevertheless, a comparison was achieved guided by a triangulation protocol (Farmer et al., 2006). This provided a framework to organise and interpret the two component datasets. Silent themes highlighted gaps in the quantitative study where data could have been gathered using measures on carer reflective functioning and caregiving behaviour. Filling in these gaps will be considered as a goal for future research, which could enable a more complete integration of findings and a better understanding of the process of change brought about by the programme.

Discussion

We have described a mixed methods evaluation of the *Fostering Connections* intervention. Our findings have identified metathemes that cut across methods and data sources, thus enhancing the credibility and transferability of the findings.

Effects of the Intervention

Our research indicates that the intervention was highly acceptable to foster carers. Participants identified the foster carer facilitator, who added their experiences of the local context to the intervention, as an important factor for the acceptability of the intervention, consistent with other studies (Murray et al., 2019; Sullivan et al., 2016). This could be an indication that providing Irish-based foster care research that is culturally sensitive is more likely to result in successful implementation of such interventions. Our research found corroborating evidence in the areas of TIC knowledge, change in attitude, and fostering confidence — all core elements of trauma-informed foster care — to suggest that *Fostering Connections* may be an effective intervention for increasing foster carers' capacity to provide children with TIC. The qualitative study found that changes in attitude were associated with an increase in empathy for the child. Increased empathy for children has been associated with positive caregiving (Padilla-Walker & Christensen, 2011), more resilience in foster carers (Geiger et al., 2016), and successful placements (Oke et al., 2013). The qualitative study also expanded findings that indicated foster carers increased their confidence in fostering. Qualitative findings linked increased fostering confidence to feeling more equipped

to care for foster children and, in turn, to an increased sense of hopefulness about the children's future. This aligns with Herbert and Wookey's (2007) study, which also found that foster carers' upskilling was associated with increased self-confidence in foster carers.

Silence was found in the quantitative study for the themes "TIC carer–child interaction" and "fostering reflection". The silence on these themes suggests that our use of quantitative measures left gaps where these outcomes could have been examined. The qualitative study identified TIC carer–child interaction as an important component of the change process, providing information on how foster carers interacted with the children in more trauma-informed ways. The integrated findings suggest that this change was underpinned by increased TIC knowledge, TIC attitude, and fostering confidence, as well as the enhanced skills foster carers learned in the intervention, which included managing trauma-related behaviours, non-directive play, connecting activities, and attunement and communication skills.

The qualitative study suggested that an increase in fostering reflective capacity (awareness and regulation) also underpinned these changes. Foster carers "fostering reflective" capacity, also referred to as "mentalising", was reported to have increased in similar psychoeducational interventions for foster carers (Adkins et al., 2018; Selwyn et al., 2016; Staines et al., 2019). This increase enabled the foster carers to reflect more on both the needs of the children and their own needs as caregivers in the context of caring for children who have experienced trauma. The intervention encouraged foster carers to avoid reactive responses and develop a more reflective caregiving (mentalising) approach that involved reflecting on what was happening within the child (internal world of the child) and what was happening in their interactions with the child (interpersonal child–carer space).

It is well established that positive carer–child interactions serve to build children's emotional regulation and secure attachment (Fonagy et al., 2007; Schore & Schore, 2008; Siegel, 2015). Best practice for children with trauma history centres on enhancing the child–carer relationship (Shonkoff et al., 2012) as it aims at reducing the impact of trauma (van der Kolk, 2015).

Our results indicated that many children in this study were experiencing serious developmental difficulties, consistent with other studies (Cousins et al., 2010; Goemans et al., 2018). Our study found corroborating evidence on improvement in the children's difficulties over the 15-month study period, a longer time frame than the intervention, suggesting the intervention had a latent effect. Consistent with other research, achieving improved outcomes in children in foster care necessitates substantial commitment on the part of foster carers (Lindhiem & Dozier, 2007).

Our results suggested improvement in the children's regulatory capacity and peer problems over the study period, perhaps because foster carers who participated in *Fostering Connections* had increased their capacity to provide children with TIC**.** The provision of TIC involved foster carers providing co-regulatory and positive relational experiences to the children over the study period. Complementary evidence was found in the improvement seen in the children's problems.

These were reported as general improvements in the quantitative study and, in the qualitative study, particular improvements in the areas of communication and behaviour. The intervention specifically targeted children's regulation based on research strongly showing that trauma such as abuse and neglect impact children's developing stress-regulatory system, resulting in difficulty regulating emotions (Perry et al., 1998; Vanderwert et al., 2016). Challenging behaviours are linked to emotional dysregulation (Cole et al., 1994). Thus, by targeting children's regulation through the foster carers' capacity to provide co-regulatory experiences, the intervention aimed to support improvement in children's behaviour. When children experience a feeling of safety and security in the foster carer–child relationship, this is also likely to alleviate trauma-related difficulties (Rayburn et al., 2018) and reduce disruptive child behaviour (Wojciak et al., 2017).

Supporting Future Implementation

Given that the quantitative study did not seek to gather data on contextual issues, we found surprising results on how to sustain the changes the foster carers had made. Foster carers offered this data themselves in the open-ended question on the post-intervention satisfaction questionnaire. This reflected that they felt these were important issues to express. Our research found that there is a need for foster carers to receive ongoing support and training in order to sustain the changes they make. In the qualitative study, complementary evidence was found that training is needed for stakeholders, which suggests that there is a need for a parallel intervention to address the gaps in practitioner knowledge and skills in the application of TIC. Parallel practitioner training in TIC would likely encourage more consistent and aligned social work practices that reflect a greater understanding of the role the foster carer plays in children's lives (Rodger et al., 2006).

The qualitative study highlighted the importance of facilitators receiving training before running the intervention, and supervision and support during the intervention. The role of the facilitator has been identified as an important change agent in the success of intervention implementation (Harvey et al., 2002) and thus requires appropriate support.

The study has several implications for future research. Its results contribute to the small but growing body of evidence in favour of providing TIC psychoeducational programmes for foster carers. However, more research is necessary to support the effectiveness of *Fostering Connections*. Silent themes highlighted gaps in the quantitative study where data could have been gathered on carer reflective functioning (mentalising) and caregiving behaviour. Examining these outcomes is likely to add value to future research, enabling more complete integration of results and better understanding of the process of change brought about by the intervention. The study also highlights the need to develop a parallel practitioner intervention. We conclude that *Fostering Connections* is likely to make an important contribution to the provision of training for foster carers in Ireland, supporting foster families caring for children with trauma-related difficulties.

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