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2026

**DOI (link to publisher)**  
[10.5463/thesis.1649](https://doi.org/10.5463/thesis.1649)

**document version**  
Publisher's PDF, also known as Version of record

[Link to publication in VU Research Portal](#)

### **citation for published version (APA)**

Fictorie, V. (2026). *Rewind and Fast Forward: Understanding, improving and accelerating recovery in youth after family violence*. [PhD-Thesis - Research and graduation internal, Vrije Universiteit Amsterdam].  
<https://doi.org/10.5463/thesis.1649>

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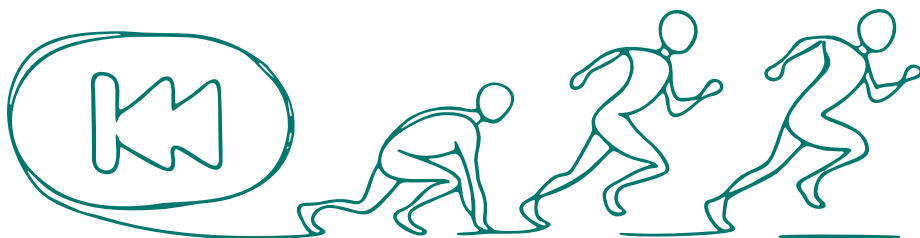
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# Rewind and *Fast Forward*

Understanding, improving and accelerating  
recovery in youth after family violence



Valerie Fictorie

# **Rewind and *Fast Forward***

**Understanding, improving and accelerating  
recovery in youth after family violence**

Valerie Fictorie

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Provided by thesis specialist Ridderprint, [ridderprint.nl](https://www.ridderprint.nl)

Printing: Ridderprint

Layout and design: Ryanne Keja, [persoonlijkproefschrift.nl](https://persoonlijkproefschrift.nl)

Cover design illustration: Rutger de Jong

DOI: <https://doi.org/10.5463/thesis.1649>

This dissertation was conducted within the Academic Collaborative Center for Child Abuse Research ("Academische Werkplaats Kindermishandeling"), a collaboration between the VU Amsterdam and Kenter Youthcare.

The randomized controlled trial, described in Chapter 3 and 4, was funded by a research grant from the Netherlands Organization for Health Research and Development (ZonMw, grant number: 10260011910002), within the research program 'Violence does not belong anywhere'. Data of the longitudinal study, presented in Chapter 2, was collected by the Verwey Jonker Institute and made possible with the financial support from the Dutch ministry, Dutch municipalities, and Augeo Foundation.



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# REWIND AND FAST FORWARD

Understanding, improving and accelerating recovery in youth after family  
violence

ACADEMISCH PROEFSCHRIFT

ter verkrijging van de graad Doctor of Philosophy aan  
de Vrije Universiteit Amsterdam,  
op gezag van de rector magnificus  
prof.dr. J.J.G. Geurts,  
volgens besluit van de decaan  
van de Faculteit der Gedrags- en Bewegingswetenschappen  
in het openbaar te verdedigen  
op woensdag 22 april 2026 om 9.45 uur  
in de universiteit

door

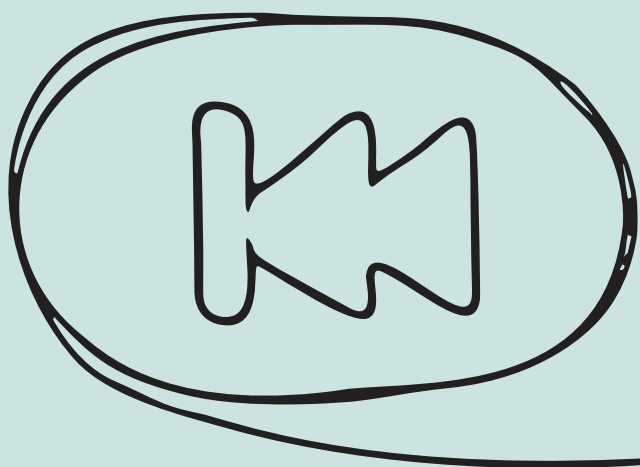
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# 1

## **General Introduction**

## General introduction

*Ray, a 15-year-old boy living with his father and two siblings, leaves the therapy session and, once again, the EMDR tools remain unused. He told me that he was afraid of the feelings the EMDR could elicit and I noticed that he was occupied with daily situations that caused him stress. One of these situations was the fighting between his siblings, which continued for years. This brought back memories of family violence between his parents when he was little. He also experienced social difficulties at school, causing feelings of loneliness and worthlessness. He felt that he could not turn with these issues to his father. His father had to deal with a lot of stress, which made it difficult to see that Ray was having a hard time and in need of his emotional support. His father was also triggered by the fights between his children, making his father feel powerless. Sitting alone in the therapy room after Ray left, I struggled with how I could help him and his family. Trauma therapy was clearly needed to feel less triggered at home and at school, but at the same time, daily stress and lack of support prevented him from encountering and maintaining trauma therapy. Where did I have to start? Work toward reducing daily stress, increasing family safety and support, or trauma processing? Or was it possible to create a context in which we could work on all these goals simultaneously? It was important that a solution was within reach, because the traumas had a significant impact on Ray and I did not want them to affect his development any further.*

Ray and his family represent many families that I see on a daily basis in my work as a therapist in a child and youth trauma center. Globally, one in six people experienced family violence in childhood, either as a victim or witness (Whitten et al., 2024). The consequences of family violence can be severe. Youth are at risk of experiencing posttraumatic stress (PTS) symptoms (Alisic et al., 2014) and other psychological problems (Holt et al., 2008). As shown in the example of Ray and his family, family violence also has an impact at a family level. Parents can experience PTS symptoms (Ferrari et al., 2016), and, in general, parents' PTS symptoms are associated with increased levels of parenting stress (Christie et al., 2019). Family violence is also related to negative parenting (Lee et al., 2024). As is known from systems theory, changes in one family member impact other family members and vice versa (Kelledy & Lyons, 2019). Parenting difficulties were also negatively associated with children's mental health (Crusto et al., 2010; Roberts et al., 2013; Telman et al., 2016) and children's feelings about the relationship with their parents (Sousa et al., 2011). In view of this reciprocal interaction, recovery can be difficult. A study on families referred to the Child Protection Service (CPS) after signs of abuse and / or neglect showed that one and a half years later, more than half of the families still had to deal with family violence (Steketee et al., 2021). About 55% of the children in these families showed a low and stable trajectory of PTS symptoms and 9% recovered from PTS symptoms, while the other children still

experienced moderate to high PTS symptoms after one and a half years (Meijer et al., 2019). Difficulties in recovery are also reflected in intervention studies. Although effect sizes for trauma treatment for youth exposed to family violence can be large, many families do not complete treatment, with dropout rates ranging from 27% to 40% (Cox et al., 2025), which is higher than the dropout rate of 11% found in studies on general trauma (Simmons et al., 2021). This means that some families recover and restore safety, while others continue to face violence and psychological issues, emphasizing the need to improve treatment.

To understand which ingredients are necessary in effective treatments, it is important to first understand how families recover after family violence. Although much is known about the mechanisms that play a role in the impact of family violence on youth and families, less is known about the mechanisms responsible for recovery. Therefore, the aim of this dissertation is two-fold. The first aim is to understand the mechanisms that play a role in children's recovery after family violence. The second aim is to improve and accelerate recovery in youth exposed to family violence by testing a family-based intensive trauma treatment. To achieve these aims the following research questions were formulated: a) Which mechanisms contribute to youth's recovery after family violence?; b) Which systemic elements are needed in trauma treatment for youth exposed to family violence?; c) How can treatment be optimized for families exposed to family violence?

### **Mechanisms in youth's recovery after family violence**

Existing knowledge on the pathway of family violence to child psychosocial problems could offer hypotheses on mechanisms underlying recovery. Although there are several theories that offer a systemic lens on children's psychological problems, Emotional Security Theory (EST; Davies & Cummings, 1998) offers a theoretical framework that specially focuses on the impact of family violence on children. This theory states that children adapt to family situations to maintain a sense of protection, safety, and security within the family. In situations where children repeatedly cannot preserve their feeling of emotional security or can only do so through costly emotional, cognitive, and behavioural adaptations, such as in the context of family violence, children can develop psychological problems. The duration, severity, and characteristics of the conflict influence the degree to and the ways in which children can preserve their feelings of emotional security. A second path from family violence to child psychological problems is through parenting, as family conflicts can lead to parenting difficulties. These parenting difficulties can serve as a direct source of stress for children, but can also indirectly impact children, as it can undermine their feeling of emotional security. As illustrated in the example of Ray's family, his father experienced parent PTS and this also affected him as a parent. Both parent PTS and parental stress have been directly or indirectly linked with child functioning (Banyard et al., 2003; Crusto et al., 2010; Fogarty et al., 2019; Telman et al., 2016). Because the impact of family violence

on feelings of emotional security and parenting can be seen as important mechanisms by which children are affected by family violence, it is important to test if these feelings also play a role in their recovery. Understanding the mechanisms underlying recovery can provide valuable insight with which interventions can be improved. In the case of Ray, this could offer strategies to support his recovery. Would his recovery benefit more if the fighting between his siblings stopped, or is it necessary that his father felt less stressed or developed better coping mechanisms, making him more emotionally available to his son? In Chapter 2 of this dissertation, the mediating pathways between changes in family violence and children's PTS through children's emotional security, parental stress, and parents' PTS, were tested in a sample of families referred to CPS.

### **Systemic elements in trauma treatment for youth exposed to family violence**

Taking into account the impact of family violence on parents and therefore on youth, it is plausible that the addition of systemic elements to trauma treatment may enhance treatment success. Treatments developed from trauma theory have a main focus on youth and vary in the degree to which parents are involved in the treatment (de Haan et al., 2024). Other treatments developed in the field of child abuse and interparental violence originally focused mainly on parents. Because the relationship between family violence and children's well-being is established and interparental violence is increasingly recognized as a form of child abuse and/or neglect (Black et al., 2025), more interventions targeting children are developed and studied (Rizo et al., 2011). Empirical evidence shows that in the context of family violence, parenting programs have a positive effect on parenting (Lindstrom Johnson et al., 2018; Rizo et al., 2011) and there is promising evidence for treatments that focus on parents, children, and their interaction (Anderson et al., 2018). However, a review on trauma treatment in general did not find that parental participation outperforms child-only treatment (de Haan et al., 2024). Furthermore, the variety in programs is large and active control groups are often missing, making it impossible to draw conclusions about the contribution of parental and systemic components to youth's recovery. In Chapter 4 of this dissertation, the results of a randomized controlled trial (RCT) on the added value of parent and systemic components complementing child trauma treatment will be presented. This was tested in a sample of youth exposed to family violence and referred to trauma treatment. Complementing theory and empirical evidence, the experiences of the youth involved in this RCT were also elicited and studied. Chapter 5 includes a qualitative study on the views of youth regarding outcomes and key components of trauma treatment with and without parental and systemic components.

## Optimizing treatment for families exposed to family violence

If we succeed in establishing treatments that can be effective in simultaneously reducing PTS symptoms and enhancing parenting and family relationship, how can we further optimize treatment to ensure families encounter and maintain treatment? Optimizing treatment outcomes is especially important for youth, as they are developing on many levels (Brown et al., 2008), and this may be hampered by PTS (Fowler & Chanmugam, 2007). As shown in the example of Ray, fear of the feelings that EMDR therapy might elicit and daily stress often hindered him from starting EMDR therapy. On the occasions he had an EMDR session, he had to wait for a week for the next EMDR session, and during this week the barriers to restart the EMDR increased again. A recent trend to overcome these barriers and optimize treatment effects is to intensify treatment programs. Although there is evidence that more people complete trauma therapy in intensive formats (Hoppen et al., 2023) and there is increasing evidence for the effect on PTS reduction in youth (Rentinck et al., 2025; van Ee et al., 2024), a study on symptom retention showed that around half of participants who no longer met PTSD criteria after intensive trauma treatment still experienced PTS symptoms (Wesseling et al., 2025). Because most studies on intensive trauma treatment lack control groups, it remains unclear whether treatment effects can be attributed to the intensive format. Furthermore, because different studies exclude youth such as Ray's, that is, with unsafe family situations (Tijsseling et al., 2024) or with parents who experience PTS symptoms (Hendriks et al., 2017; Ooms-Evers et al., 2021), the effectiveness of intensive treatment for youth exposed to family violence remains unknown. It is of utmost importance that intensive trauma treatments for youth exposed to family violence is accessible and studied. In Chapter 4 of this dissertation, the RCT also compared family-based intensive trauma treatment to non-intensive trauma treatment as usual to understand if intensifying treatment can optimize treatment outcomes for youth exposed to family violence. Chapter 5 includes the perspectives of the youth themselves on receiving treatment in a high intensity format.

Before presenting the outline of this dissertation, the definitions of family violence and trauma are first described, as well as a description of Family-Based Intensive Trauma Treatment.

## Family Violence

This dissertation is focused on families exposed to family violence. Family violence is a broad term used for different forms of violence. Warren et al. (2024, p. 978) defined family violence as “any violent incident or pattern of incidents, which includes both actions and failures to act, perpetrated by a family member or intimate partner, which causes or has the potential to cause physical and/or emotional harm to the victim”. In this dissertation, the definition includes family violence performed by family members, (ex) partners of

parents, or other caregivers. It can include physical, emotional, and/or sexual abuse and neglect. The inclusion of both child abuse and interparental violence can be justified by several arguments. First, child abuse and interparental violence often co-occur (Wolbers et al., 2023) and have a cumulative impact (Felitti et al., 2019; Finkelhor et al., 2007; Guedes et al., 2016). Second, it can elicit similar psychological responses because both forms can reflect broader family dysfunction (Herrenkohl et al., 2008; Montgomery et al., 2019).

## **Trauma**

In this dissertation different terminology related to trauma is used. In general, the word 'trauma' can refer to the event itself or the reaction to the event. Trauma is defined as "any disturbing experience that results in significant fear, helplessness, dissociation, confusion, or other disruptive feelings, intense enough to have a long-lasting negative effect on a person's attitudes, behavior, and other aspects of functioning" (American Psychological Association, 2018). Examples of potentially traumatic events are different forms of abuse, accidents, wars, and natural disasters. The term 'Adverse Childhood Experiences' refers to potential traumatic experiences in childhood that can have a long lasting impact on health and well-being (Felitti et al., 2019). It includes different forms of abuse, neglect, and household dysfunction, such as exposure to domestic violence and substance abuse from a parent. The *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; DSM-5; American Psychiatric Association [APA], 2013) defines trauma, within the criteria for posttraumatic stress disorder (PTSD), as: "the person was exposed to: death, threatened death, actual or threatened serious injury, or actual or threatened sexual violence" (APA, 2013, p. 271). This also applies to people who witnessed the trauma or learned that it happened to someone close to them. Not all people experiencing a potential traumatic event develop symptoms of PTS. A person can experience an adverse event, such as sexual abuse, without developing PTSD. People meet the criteria for PTSD if they are exposed to a traumatic event and experience symptoms of PTS for more than a month, which affects daily functioning (APA, 2013).

## **Family-based Intensive Trauma Treatment**

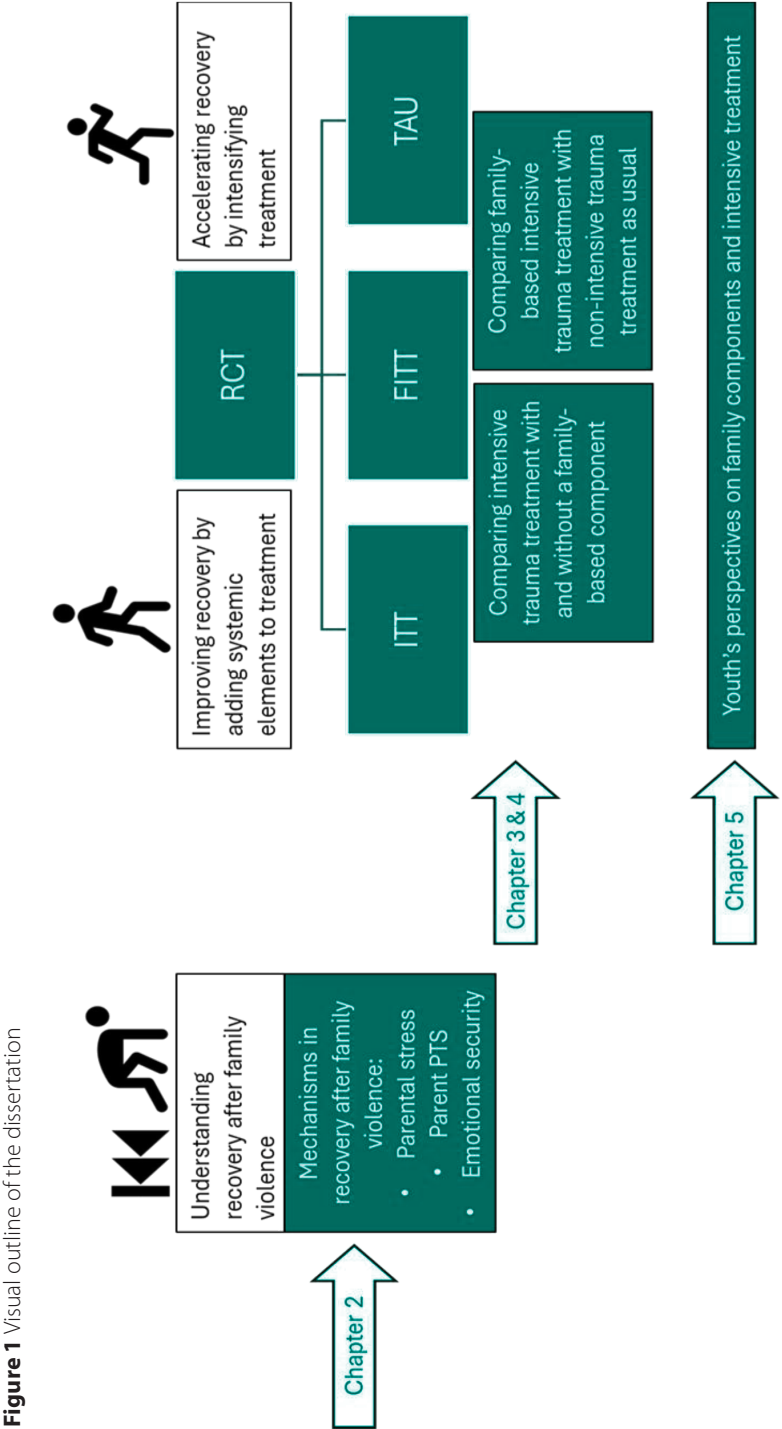
In this dissertation, the effectiveness of Family-based Intensive Trauma Treatment (FITT) was tested in a RCT by comparing FITT to a) Intensive Trauma Treatment without parental and systemic components and to b) non-intensive trauma treatment as usual. FITT was developed in 2018, by my colleagues and me at the Children's and Youth Trauma Center of Kenter Youthcare. FITT is a four-week treatment program divided into three phases: a) the preparation phase; b) the trauma-processing phase; and c) the integration phase. In all phases, parents are involved. An overview of the program can be found in Table 1.

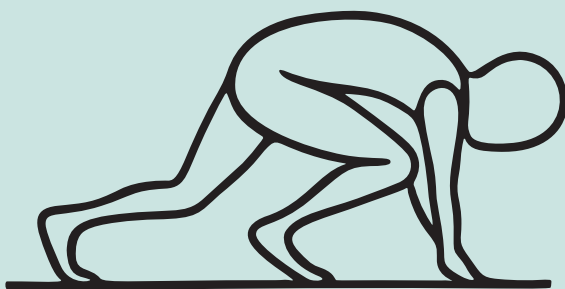
**Table 1** Overview of Family-based Intensive Trauma Treatment

| Week  | Phase                           | Session                      | Target                                            | Aims                                                                                                                                                                |
|-------|---------------------------------|------------------------------|---------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1     | Preparation                     | Psychoeducation (90 min)     | Youth, parents, and members of the family network | Increasing knowledge about family violence, PTS, trauma sensitive parenting, and FITT                                                                               |
|       |                                 | Clustering (90 min)          | Youth                                             | Ordering and choosing six traumatic memories that cause current complaints and will be the target in phase 2.                                                       |
| 2 & 3 | Trauma-processing<br>3 days p/w | Imaginal Exposure (90 min)   | Youth                                             | Decreasing PTS and comorbid symptoms                                                                                                                                |
|       |                                 | Psychomotor therapy (60 min) | Youth                                             | Decreasing PTS and comorbid symptoms, increasing insight in the effect of trauma, increasing awareness of bodily and stress signals, and improving stressregulation |
|       |                                 | EMDR (90 min)                | Youth                                             | Decreasing PTS and comorbid symptoms                                                                                                                                |
|       |                                 | Parent training (90 min)     | Parents                                           | Lowering parental stress, recognizing adolescent and parent PTS, increasing support and trauma-sensitive parenting, constructing family narrative                   |
|       |                                 | Interaction session (30 min) | Youth and parent                                  | Practicing sharing and trauma-sensitive parenting                                                                                                                   |
| 4     | Integration<br>3 days p/w       | Family session (90 min)      | Family                                            | Sharing and constructing the trauma narrative, recognizing destructive communication patterns and vulnerability cycle, increasing family safety                     |

## Outline of the dissertation

This dissertation focuses on understanding recovery in youth after family violence and how to improve and accelerate this process. The dissertation is based on a longitudinal study, a randomized controlled study, and a qualitative study. The first research question on understanding the mechanisms that can contribute to youth's recovery after family violence is covered in **Chapter 2**, in which three mechanisms were tested in a longitudinal study: a) the intensity and severity of the violence; b) parental stress; c) parent PTS and; d) emotional security. This is tested in a Dutch sample of families who were referred to the CPS due to signs of child abuse and neglect. The second research question on necessary systemic elements in trauma treatment for youth exposed to family violence is answered in **Chapter 4** and **5**. **Chapter 4** includes the effectiveness study of family-based intensive trauma treatment. The randomized controlled trial tested whether recovery can be improved with the addition of parental and systemic components to intensive trauma treatment. To answer this question, FITT was compared with intensive trauma treatment without parents or family members participating (ITT). **Chapter 5** includes the qualitative study, based on interviews with youth who participated in ITT or FITT. It explored what youth perceive as outcomes, key components, facilitators, and barriers of intensive trauma treatment and if their perspectives varied depending on the inclusion of a family-based component. The study protocol of this trial can be found in **Chapter 3** and describes the background of the study, the rationale of FITT, and the method of the trial. The last research question on optimizing treatment for families exposed to family violence is also answered in both **Chapters 4** and **5**. The RCT, described in **Chapter 4**, also tested whether recovery can be accelerated with an intensive format by comparing FITT with a non-intensive weekly trauma treatment as usual with participating parents and family members (TAU). In **Chapter 5** youth were also interviewed on their perspectives on receiving treatment in a high-intensity format and what they perceived as key components, facilitators, and barriers. In **Chapter 6** the three main questions of the dissertation are answered. Furthermore, the limitations of the dissertation are discussed and implications and recommendations are presented. A visual outline of the dissertation is shown in Figure 1.





# 2

## **Recovery of children's posttraumatic stress after family violence: The role of parental stress, parents' posttraumatic stress, and emotional security**

Fictorie, V., Schuengel, C., de Moor, M. H. M., Xerxa, Y., Tierolf, B., Jonkman, C. S., Visser, M., & Steketee, M. (in press). Recovery of children's posttraumatic stress after family violence: The role of parental stress, parents' posttraumatic stress, and emotional security. *Development and Psychopathology*. doi:10.1017/S0954579425100722

## **Abstract**

Posttraumatic stress symptoms (PTS) have been observed in children exposed to family violence. Although functioning improves for many children after cessation of violence, pathways to recovery are poorly understood. This study tests the mediating pathways between changes in family violence and children's PTS through children's emotional security, parental stress, and parents' PTS. We used longitudinal data of 562 children and their parents who were referred to child protection service. Data included three waves over a one and a half years period. Questionnaire data of both children and parents were analyzed in R Lavaan with Random Intercept Cross Lagged Panel Models to examine intrafamilial associations. Child-reported, but not parent-reported, decreases in family violence predicted decreases in child PTS from the first to the second wave. Changes in parental stress, parent PTS, and emotional security did not mediate the associations between change in family violence and child PTS. We found in exploratory analyses that decreases in parental stress predicted decreases in parent-reported family violence. The results emphasize the importance of reducing family violence for children to recover from PTS. Parental stress may be a factor in restoring safety.

## Introduction

Family violence is a broad term that includes child abuse, exposure to interparental violence, and neglect (Warren et al., 2024). Globally, one in six people has been exposed to childhood family violence (Whitten et al., 2024). Exposure to family violence has been found to be associated with negative developmental outcomes (Felitti et al., 2019; Fowler & Chanmugam, 2007; Lee et al., 2023; Shonkoff et al., 2012; Sturge-Apple et al., 2008). A particularly important outcome for mental health are posttraumatic stress (PTS) symptoms (Artz et al., 2014). Continuous exposure to family violence even predicted longitudinal increases in children's PTS (Galano et al., 2021). Child abuse and interparental violence are forms of family violence that often occur together (Hamby & Grych, 2013). In a Dutch study, professionals reported that in 48% of children who were exposed to child abuse, different forms of domestic violence, including interparental violence, cooccurred (Alink et al., 2018). Referral to child protection services (CPS) is aimed to stop this violence and support family members in their recovery from its cumulative impact (Felitti et al., 2019; Finkelhor et al., 2007; Guedes et al., 2016). In 55% of children exposed to interparental violence and referred to CPS, PTS symptoms were low and stable over a period of one and a half years and 9% of children recovered from PTS symptoms (Meijer et al., 2019). Finding out how children recover after referral to CPS and which factors play a role in their recovery, might hold clues for preventive interventions. Emotional Security Theory (EST; (Davies & Cummings, 1998) may provide a useful framework for understanding how psychosocial problems in children may be linked to the dynamics of destructive family conflict and violence. The current study aimed to test to what extent emotional security may particularly explain recovery in children's PTS, as child protection support may lead to reduction of violence between parents as well as child abuse, and parents' own stress and PTS may ameliorate as well.

## Emotional Security Theory

EST describes how children adapt to signals that the integrity of the family system may come to an end, thereby restoring a sense of safety and security. One adaptation is behavioral avoidance of conflict or attempts to resolve such conflicts and their aftermath (DeBoard-Lucas & Grych, 2011; Koss et al., 2011), and another is to cognitively alter internal representations of the relationships within the family (Fosco, Deboard, et al., 2007). If prolonged, these adaptations may lead to maladaptive functioning in other contexts than the family (Davies & Martin, 2013). According to EST, various characteristics of the conflict, including duration and severity of the conflict, as well as poor resolution, make it difficult for children to regain homeostasis after being witness to it. In EST, parental functioning in the aftermath of conflict may also affect their children, both directly as a stressor or indirectly as another indication of the tenuous state of the family system. EST was originally developed to understand children's responses in the context of interparental violence.

However, child abuse could elicit similar psychological responses as interparental violence because it also signifies broader family dysfunction (Herrenkohl et al., 2008; Montgomery et al., 2019). To understand the links between dynamics in family violence and recovery, we therefore start with examining the role of parent functioning, emotional security, and frequency and intensity of the violence in the association between family violence and children's PTS. In this study, mediation pathways will be tested between changes in family violence and children's PTS through children's emotional security, parental stress, and parent PTS in a Dutch sample of families who were referred to CPS.

### **Family violence and children's PTS**

According to EST, frequency and intensity of family violence itself are indirectly related to child outcomes (Cummings & Miller-Graff, 2015). Studies on this topic found mixed results. Although higher frequency of exposure to family violence was positively associated with behavioral maladjustment (Graham-Bermann et al., 2009) and PTS symptoms (McDonald et al., 2016), severity and frequency of the violence alone predicted only to a limited degree children's adjustment and functioning after family violence (Graham-Bermann et al., 2009; Manning et al., 2014). In a longitudinal study, changes in the severity of family violence did not predict a decrease or increase in externalizing and prosocial behavior (Manning et al., 2014). In a study of Lünemann et al. (2022), PTS symptoms decreased in families where family violence decreased. However, in families where the violence had stopped, children still experienced the same level of PTS symptoms as in families where the violence persisted. One explanation for these mixed results is that most of these studies on family violence focus on one type of family violence and therefore miss the possible impact of changes in other forms of family violence. Also, some studies included only a single informant and did not compare multiple informants (Graham-Bermann et al., 2009; Manning et al., 2014; McDonald et al., 2016). Others combined parent and child-report by using the score of the family member that reported the highest number of incidents (Lünemann et al., 2022), even though parent-and child-report on family violence are modestly associated and therefore contain partly unique information (Compier-de Block et al., 2017). Another explanation could be that studies analyzed differences between persons (interindividual) or families (interfamilial) and not intraindividual or intrafamilial changes. Studying intrafamilial changes is important because it accounts for the stability of a construct that can differ between families (Berry & Willoughby, 2017). For example, an increase in family violence in a family that showed low, stable levels of family violence might have a different effect on child PTS than an equal increase in family violence in a family that showed high, fluctuating levels of family violence. When searching for associations between constructs, it is thus important to separate interfamilial differences from intrafamilial changes and assess if intrafamilial changes in one construct relate to intrafamilial changes in another construct. In our study, we will therefore employ a novel

technique (random intercept cross-lagged panel modeling) that enables us to examine intrafamilial processes while accounting for interfamilial differences.

### **Family violence, parental stress, and children's PTS**

According to EST, violence-induced changes in parents' functioning can directly and indirectly affect children's emotional security and emotional and behavioral problems (Davies & Martin, 2013). Levendosky and Graham-Bermann (2000) argued that the effect of violence on parenting may be mediated by parents' PTS. Parents' PTS symptoms were associated with increased levels of parenting stress (Christie et al., 2019), and, in turn, higher levels of parenting stress were associated with higher levels of children's PTS symptoms (Crusto et al., 2010; Telman et al., 2016) and worse mental health in children (Roberts et al., 2013). Also, maternal mental health significantly predicted children's resilience after family violence (Fogarty et al., 2019). Parents who were exposed to family violence were less satisfied with their parenting and reported a higher incidence of child PTS (Banyard et al., 2003). We therefore hypothesize that parents' PTS and parenting stress are mediators that help to explain how family violence relates to changes in child PTS symptoms.

### **Family violence, emotional security, and children's PTS**

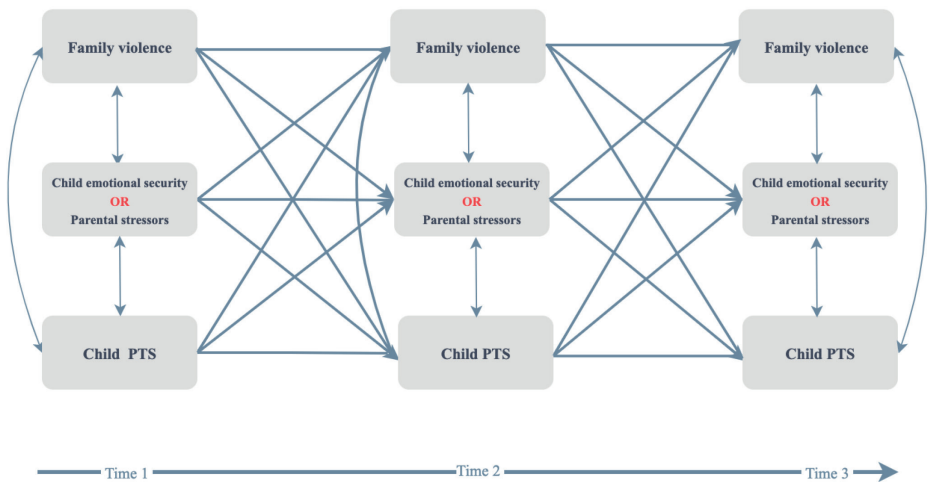
Cross-sectionally, emotional security was found to account for the association between marital aggression and children's PTS symptoms (El-Sheikh et al., 2008). Emotional security was also found to longitudinally explain the link between interparental discord and children's internalizing and externalizing problems (Cummings et al., 2006). However, both studies regarded the general population, while processes in families receiving support due to family violence may be not only quantitatively, but also qualitatively different. Furthermore, neither study included child abuse. Additionally, previous studies only tested whether EST could serve as an explanatory mechanism for psychological problems but did not test whether EST could also explain recovery after decreases in family violence. Thus, the role of emotional security remains unclear with respect to recovery of PTS that may or may not occur as family violence, including child abuse, subsides.

### **Present study**

The aim of our study was to better understand how children recover after family violence. First, the association between changes in family violence and children's PTS was tested in a Dutch sample of families who were referred to CPS. Then we tested the mediation pathways between changes in family violence and children's PTS through children's emotional security, parental stress, and parents' PTS. We first hypothesized that intrafamilial decreases of family violence predicted decreases in children's PTS symptoms and that this decrease in PTS symptoms in turn predicted decreases in family violence. Furthermore, we hypothesized that intrafamilial decreases in parental stress, parent PTS, and emotional

insecurity were preceded by decreases in family violence and predicted decreases in children’s PTS. These hypothesized pathways are presented in Figure 1. We employed a multi-informant approach and conducted separate analyses for parent and child-report to identify potential differences in perspective. We used the Random Intercept-Cross Lagged Panel Model to test our hypotheses (RI-CLPM; Hamaker et al., 2015), which is an extension to the classical cross-lagged panel model (CLPM).

**Figure 1** Hypothesized intrafamilial pathways between family violence, emotional security, parental stressors (parental stress and parents’ PTS) and child PTS



## Methods

### Design

The sample used in this study is part of a cohort study of the Verwey Jonker Institute (Lünnemann et al., 2019). All children lived in families who were referred to CPS because of signals of interparental violence and/or child abuse and neglect. CPS assesses and intervenes in situations of family violence. If situations are complex and severe, they can refer to the Child Protection Board for further investigation into the child’s well-being and safety. While the original sample included families with children in the age of 3 to 18 years, this study only considered the data of children in the age of 8-18 years, because this age-group provided self-report in addition to parent-report, offering multiple perspectives on family functioning. Family members completed questionnaires at three different time points. The first was shortly after referral to a national service tasked with child protection in case of family violence and child abuse, the second was one year later, and the third was one and a half years after the first measurement.

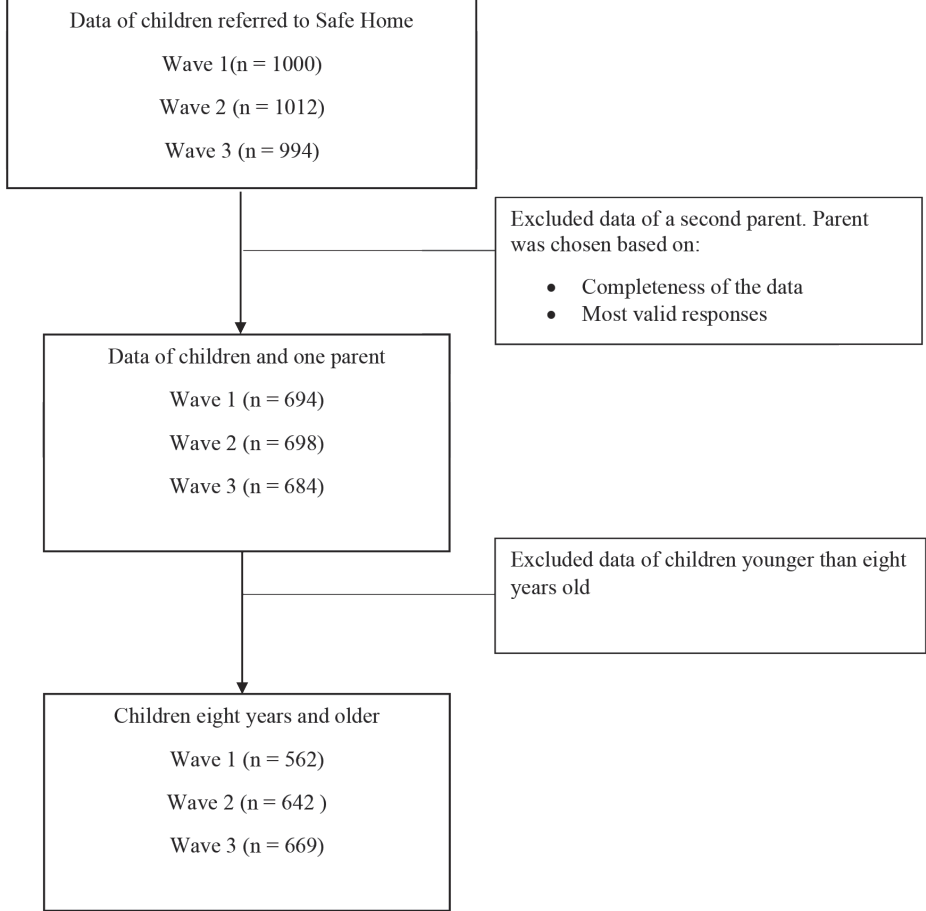
The study hypotheses were registered on Open Science Framework on June 2, 2022 [<https://osf.io/t23us>]. After preregistration, we amended the proposed autoregressive latent trajectory using the structural residuals model (ALT-SR), which combines LGCM and CLPM, with the RI-CLPM, because the ALT-SR model is not identified for data with three waves (Mund & Nestler, 2019). Full information about the amendments relative to the preregistration is in the Supplementary Material.

## Participants

For the total sample, 1,998 families met inclusion criteria and were approached. 1,046 families participated, resulting in an inclusion rate of 52%. Families gave varying reasons for declining their participation. Many were simply not interested, others were too busy or regarded the involvement of CPS as a closed matter and some families were preoccupied with other problems in their lives. Of the included families, the data of children between 8 and 18 were included in the present study.

The first wave included 562 children and one of their parents. For the second and third wave, these numbers increased respectively to 642 and 669 because some children reached the age of eight on those waves and therefore their data could be included. Children were included from the time they met the age criterion. This was done to maximize the sample size. Parent data also were included from the time the child was eight years or older. In case of available data from two parents, the parent with the lowest number of missing items was selected. If both parents had an equal number of missing data, the data from the parent with clinical levels on the TSI validity scales was excluded. If parents had equal scores on the validity scales, one parent was selected at random. The flowchart is presented in Figure 2. Descriptive statistics for sociodemographic characteristics at each wave are shown in Table 1.

**Figure 2** Flowchart cohort study



**Table 1** Sociodemographic characteristics

| Characteristics                   | Wave 1       | Wave 2       | Wave 3       |
|-----------------------------------|--------------|--------------|--------------|
| <i>N</i>                          | 562          | 642          | 669          |
| Child age, <i>M</i> ( <i>SD</i> ) | 12.28 (2.83) | 12.37 (3.06) | 12.60 (3.21) |
| Child sex (% boy)                 | 50           | 50           | 50           |
| <b>Parent age group (%)</b>       |              |              |              |
| < 25 years(%)                     | 0            | 0            | 0            |
| 25-35 years (%)                   | 13           | 13           | 12           |
| 35-45 years (%)                   | 48           | 47           | 44           |
| > years 45 (%)                    | 39           | 40           | 44           |
| <b>Parent sex (% men)</b>         | 23           | 21           | 23           |
| <b>Family composition (%)</b>     |              |              |              |
| Two-parent family                 | 42           | 39           | 44           |
| One-parent family                 | 58           | 61           | 56           |
| <b>Netto income per month (%)</b> |              |              |              |
| < 1500 euro                       | 45           | 40           | 39           |
| > 1500 euro                       | 55           | 60           | 61           |

## Procedure

Before data collection started, the ethical review committee of the Faculty of Behavioural and Movement Sciences of the Vrije Universiteit Amsterdam granted approval (protocol number: VCWE-2016-217R1). After participants received written information about the study, the organization for child protection informed them about the study. After consent by phone, a child protection worker made an appointment for the first assessment and provided the contact information of the participants to the Verwey-Jonker Institute. The researchers obtained written informed consent at the first visit before family members completed the questionnaires. During home visits and in presence of a trained research assistant, one or two caregivers completed the questionnaires about one or two of their children. Administration of the questionnaires to the children was done by a research assistant when the caregiver was not present or the research assistant made sure the caregiver was not able to see the answers of the child. Caregivers were paid 20 euro and children 10 euro compensation per assessment.

## Measurements

### *Family violence from the parent's perspective*

To investigate family violence from the parent perspective, we respectively used the Revised Conflict Tactics Scale 2 (CTS2; Straus et al., 1996) and the Conflict Tactics Scale Parent-Child (CTSPC; Straus et al., 1998). CTS2 is a 39-item questionnaire for parents assessing the nature and frequency of tactics used by partners in an intimate relationship. It consists of four

scales: psychological aggression (Cronbach's alpha for wave 1, 2 and 3 ranged between .81-.89), physical assault ( $\alpha = .88-.95$ ), sexual coercion ( $\alpha = .72-.87$ ), and injury ( $\alpha = .80-.95$ ). The CTSPC is a questionnaire for parents measuring parent-child conflict management strategies (Straus et al., 1998). We used the five items measuring psychological aggression ( $\alpha = .76-.79$ ) and thirteen items measuring physical assault ( $\alpha = .58-.70$ ) because these two scales of the CTSPC represent child abuse and are similar to the scales in the child version of the CTSPC. The association between an observational test for parent-child interactions and the CTSPC supports the convergent validity (Cotter et al., 2018). The Dutch version of both questionnaires has an eight-point scale ranging from one (never happened) to eight (happened more than 20 times). According to the scoring manual and comparable to other studies using the CTS2 and CTSPC (Lünnemann et al., 2022; Tierolf et al., 2021) we converted the values on the eight-point scale into seven different scores (0, 1, 2, 4, 8, 25) that represent the number of year incidents. The scores were converted to 0 ("never happened past year"), 1 ("once in the past year"), 2 ("twice in the past year"), 4 ("three to five times in the past year"), 8 ("six to ten times in the past year"), 15 ("eleven to twenty times in the past year") and 25 ("more than twenty times in the past year"). Afterwards we combined scores on both measures by taking the sum of the number of year incidents.

### ***Family violence from the child's perspective***

The CTSPC measures parent-child conflict management strategies and tactics between parents (Straus et al., 1998). Four items measure psychological aggression ( $\alpha = .79-.82$ ) and thirteen items measure physical assault ( $\alpha = .78-.87$ ) from parent to child. Six items measure psychological aggression ( $\alpha = .83-.88$ ) and nine items measuring physical aggression ( $\alpha = .69-.92$ ) between parents. The scores were converted to year incidence scores in the same manner as the CTSPC for parents.

### ***Children's PTS symptoms***

The Trauma Symptom Checklist for Children (TSCC; Briere, 1996) is a questionnaire to assess self-reported PTS symptoms (8–18 years). It consists of 54 items and eight scales: two validity scales (underresponse, hyperresponse) and six clinical scales (anxiety, depression, post-traumatic stress, dissociation, anger, and sexual concerns). We used the 10-item PTS scale ( $\alpha = .85-.88$ ). In a study that compared the TSCC with the Trauma Symptom Checklist for Young Children (TSCYC; Lanktree et al., 2008), the TSCC showed moderate convergent and discriminant validity.

### ***Parental stress***

The Nijmegen Parental Stress Index—short version (NOSI-K; Brock et al., 1992) measures the level of parental stress. The NOSI-K is a 25-item Dutch version of the Parental Stress Index (Abidin, 2006). Items are rated on a 6-point scale, ranging from 0 ("totally disagree") to 5

("totally agree"). A total parenting stress score is obtained by summing the ratings across items, with high scores reflecting high levels of parenting stress. Concurrent, discriminant, and criterion validity are moderate (Brock et al., 1992). Cronbach's alpha was between .96-.97 in the present study sample.

### ***Parents' PTS symptoms***

The Trauma Symptom Inventory (TSI; Briere, 1995) was used to measure the trauma symptoms of the parents. This questionnaire consists of 100 items measuring PTS and other psychological sequelae of traumatic events. Respondents are asked to rate how often each symptom has happened to them in the past six months, on a 4-point frequency scale ranging from 0 ("never") to 3 ("often"). The mean score of the T-scores on the different scales was used. Cronbach's alpha ranged between .62 and .93. The TSI includes three validity (Atypical Responses, Response Level, and Inconsistent Responses) scales to identify responses that would invalidate the test results. The TSI has been found to be a reliable instrument to assess PTS and other psychological sequelae of traumatic events (Briere, 1995).

### ***Children's emotional security***

The Security in the Interparental Subsystem (SIS; (Davies, et al., 2002) is a questionnaire for children with 43 4-point scale items. The SIS asks children about their reactions to conflict between parents. Higher scores represent higher levels of feelings of emotional insecurity. It contains three scales and seven subscales: emotional reactivity, behavioral dysregulation, regulation of exposure to affect, involvement, internal representation, destructive family representation, and conflict spillover representation. We used the total scale, that is, the sum score of all items. Validity, internal consistency, and test-retest reliability were sufficient (Davies et al., 2002). In this study sample Cronbach's alpha was between .91 and .92.

### **Statistical Analysis**

IBM SPSS Statistics (Version 27) was used for descriptive analyses and detection of data entry errors. To reduce the impact of outliers, winsorization was applied for parent and child-reported family violence (Tabachnick & Fidell, 2013). Outlying values above two standard deviations from the mean were set to the next highest value for parent-reported family violence (29 cases for time 1, 26 cases time 2, 29 cases time 3), based on the distribution and number of outliers. For child-reported family violence, the number of outliers was smaller, and therefore only outlying values above three standard deviations from the mean were set to the next highest value (6 cases for time 1, 4 cases for time 2, 6 cases for time 3). Data were also transformed by taking the square root to reduce the variance differences across variables, which might lead to estimation difficulties in the RI-CLPM.

We used repeated measures ANOVA to explore changes over time for family violence, child PTS, parental stress, parent PTS, and emotional security. Multiple imputation was used to account for missing data. SPSS mixed model procedure with effect coding was used to generate pooled statistics across the five imputed datasets (van Ginkel & Kroonenberg, 2014). To test if change over time reflects a reliable change, the reliable change index (RCI) was also calculated for these variables (Jacobson & Truax, 1991).

We used RI-CLPM within a structural equation modeling (SEM) framework to test bidirectional intrafamilial associations across time. The RI-CLPM is, in contrast to the CLPM, able to control for the time-invariant stability of variables (called random intercept in the RI-CLPM). Thus, the RI-CLPM makes it possible to understand how within families change in one variable over time predicts change in another variable over time, accounting for their previous state, and also controlling for interfamilial differences. Analyses were performed with R in Rstudio, software version 2022.12.0.353, using the Lavaan package (Rosseel, 2012). We performed the RI-CLPM for all four hypotheses and separately for family violence child-report and parent-report, resulting in eight different models. For hypotheses two to four, the model was extended from a bivariate model to a trivariate model, and therefore also random intercepts were estimated for parental stress, parent PTS, and emotional security. In each model, random intercepts for family violence and child PTS were estimated to capture the interfamilial differences, the trait-like part. Further, autoregressive and cross-lagged paths were estimated for the different variables controlling for the influence of the random intercept of each variable, to solely capture intrafamilial changes, the state-like part of the model. Control variables were included in the model as time invariant covariates (children's sex) and time-varying covariates (children's age in years, family composition categorized as one-or two-parent family, and income categorized as low or middle to high income). Family composition and income are dynamic risk and resilience factors for family violence (Steketee et al., 2021) and may also affect the level of parental stress and alternative pathways towards recovery (e.g., through access to psychotherapy). We used full information maximum likelihood estimation to account for the missing data across different time points. To evaluate goodness of fit of each model, the following model fit indices were used: Root Mean Square Error of Approximation (RSMEA) of 0.08 or smaller, Comparative Fit Index (CFI) of .90 or larger and Tucker-Lewis Index (TLI) of .90 or larger (McDonald & Ho, 2002) indicates adequate to good fit. To test whether the RI-CLPM fitted the data significantly better than the CLPM, we used the Chi-square difference test. After the best fitting model was determined, we used a z-test to examine significance of the specific autoregressive and cross-lagged paths. A significance level of 0.05 was used as a threshold for statistical significance. Because each mediating path addressed a distinct research question and was tested only once, multiple testing was not accounted for. Separate models for understanding children's and parents' perspectives on violence

were deemed feasible because of their modest association. Sensitivity analyses were performed because multiple children within the same family participated and therefore data is dependent.

## Results

### Background analyses

Little's MCAR test indicated that cases were not missing completely at random ( $\chi^2(2029) = 2,552.66, p < .001$ ). However, even if data are not missing at random, the use of FIML is preferable over other strategies to deal with missing data (van Ginkel et al., 2020). Chi-square tests showed that family composition and income were related to the pattern of missing data. The number of missing values was higher for single-parent families and families with a low income. The variables that were statistically associated with missingness were included as covariates in the main analyses.

Pearson correlation coefficients ( $r$ ) for family violence parent-report, family violence child-report, child outcomes, and parental stressors are included in Supplementary Table 1. Family violence by parent report at the first and third wave were significantly associated with family violence by child-report at the first and third wave, but not found at the second wave. Overall, variables with the same informant were more strongly associated than variables with different informants. In Table 2 the pooled results of the repeated measures ANOVA can be found for families who reported on all three measurement points. Repeated measures ANOVA with multiple imputation revealed that across all three waves family violence by parent-report ( $F_{2,298.32} = 57.45, p < .001$ ), family violence by child-report ( $F_{2,11.20} = 6.99, p = .011$ ), child outcomes (Child PTS:  $F_{2,8.78} = 10.27, p = .005$ ; Emotional security:  $F_{2,8.12} = 5.31, p = .034$ ) and parental stressors (Parental stress:  $F_{2,34.40} = 10.71, p < .001$ ; Parent PTS:  $F_{2,132.12} = 60.51, p < .001$ ) on average decreased over time. The results of the RCI showed that parents, in contrast to children, reported a reliable decrease of family violence from wave 1 to wave 3. Parents also reported a reliable decrease in parental stress. No reliable change was found for child and parent PTS, and emotional security. At the first measurement point, 15% of parents reported PTS symptoms in the clinical range, compared to 6% and 3% at the second and third measurement point. Because we used a subscale of the TSCC for child PTS, it is not possible to calculate the proportion of children who have PTS scores below clinical cutoff.

**Table 2** Results Repeated Measures ANOVA

| Variables                       | N <sup>5</sup> | Wave 1 |              | Wave 2 |              | Wave 3 |              | RCI *   |
|---------------------------------|----------------|--------|--------------|--------|--------------|--------|--------------|---------|
|                                 |                | N      | M (SE)       | N      | M (SE)       | N      | M (SE)       |         |
| Family violence PR <sup>4</sup> | 268            | 357    | 53.31 (4.52) | 331    | 24.44 (2.42) | 304    | 12.99 (1.51) | -2.26** |
| Family Violence CR <sup>3</sup> | 115            | 175    | 24.61 (4.23) | 173    | 16.23 (3.98) | 177    | 10.01 (1.48) | -.92    |
| Child PTS <sup>4</sup>          | 117            | 175    | 54.31 (1.04) | 176    | 50.63 (1.09) | 175    | 49.82 (.84)  | -1.30   |
| <b>Mediators</b>                |                |        |              |        |              |        |              |         |
| Parental stress <sup>4</sup>    | 332            | 379    | 52.61 (1.21) | 371    | 50.43 (1.15) | 362    | 48.64 (1.22) | -1.99** |
| Parent PTS <sup>4</sup>         | 535            | 398    | 47.01 (.26)  | 395    | 45.83 (.25)  | 388    | 45.12 (.24)  | -.50    |
| Emotional security <sup>4</sup> | 104            | 172    | 63.11 (1.44) | 167    | 58.97 (1.21) | 162    | 57.25 (1.46) | -1.34   |

Note. PR = parent-report, CR = child-report. Pooled mean (*M*) and standard errors (*SE*). Significant ( $p < .05$ ) decrease from <sup>1</sup>wave 1 to 2, <sup>2</sup>wave 2 to 3, <sup>3</sup>wave 1 to 3, <sup>4</sup>on all intervals. <sup>5</sup> = number of participants who completed measurements at all time points. \* = RCI calculated for wave 1 to wave 3. \*\* = significant reliable change ( $p < .05$ ).

## Main Analyses

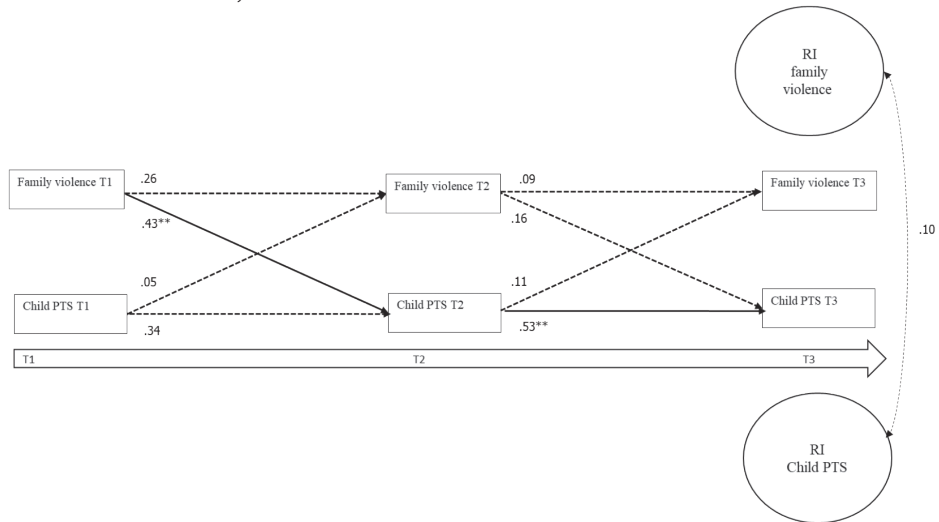
The Chi-square differences test showed that for all models, except the bivariate model with parent-reported family violence and child PTS, the RI-CLPM fitted the data significantly better than the CLPM. This means that separating intra- and interindividual differences resulted in a better fit of the model. The model fit indices, the results of the Chi-square difference test, and the figures of the CLPM and RI-CLPM can be found respectively in Supplementary Table 2 and 3 and Supplementary Figures 1-24. For all models, at the interfamilial level, the correlations between the random intercepts showed no significant associations between the different variables. Therefore, we only discuss the intrafamilial associations in the following section.

### *Intrafamilial associations between family violence and child PTS*

For child-reported family violence and child PTS (see Figure 3), the RI-CLPM showed that the cross-lagged path from family violence wave 1 to child PTS wave 2 [ $\beta = .43$ ,  $SE = .34$ ,  $p = .001$ ] was significant and demonstrated a large effect, indicating that intrafamilial decreases in reported family violence at wave 1 positively predicted intrafamilial decreases in child PTS on the next occasion. Statistically significant as well was the autoregressive path from child PTS wave 2 to wave 3 [ $\beta = 0.53$ ,  $SE = .19$ ,  $p = .009$ ], meaning that child PTS at wave 2 predicted child PTS on the following timepoint. After adding covariates to the model, the path from family violence wave 1 to family violence wave 2 also became significant [ $\beta = .28$ ,  $SE = .10$ ,  $p = .040$ ]. The RI-CLPM for parent-reported family violence and child PTS (see Supplementary Figure 5), indicated that none of the cross-lagged paths was statistically significant. This means there were no intrafamilial associations between parent-reported family violence and child PTS. The stability paths

for child PTS, from wave 1 to wave 2 [wave 1 to 2:  $\beta = 0.53$ ,  $SE = .24$ ,  $p = 0.032$ ] and wave 2 to wave 3 were significant [wave 2 to wave 3:  $\beta = 0.63$ ,  $SE = .19$ ,  $p = .001$ ]. For parent-reported family violence, there were no changes in significance of the paths after controlling for covariates.

**Figure 3** Bidirectional intrafamilial associations between child-reported family violence and child PTS across one and half year after referral to Child Protection Service



Note. CFI = 1.00, TLI = 1.00, RMSEA = .00. Dotted lines represent non-significant effects.

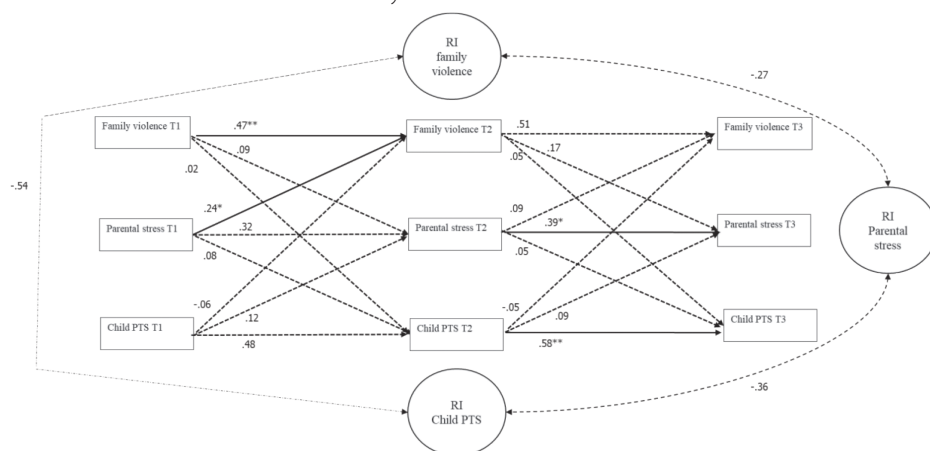
\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

### ***The role of parental stress in the intrafamilial associations between family violence and child PTS***

To test whether the effect of family violence on child PTS was mediated by parental stress, we ran trivariate RI-CLPMs. Whether parents or children reported on family violence, the trivariate RI-CLPM models did not show any statistically significant cross-lagged paths from family violence to parental stress nor from parental stress to child PTS. This indicates that family violence did not predict parental stress, and in turn parental stress did not predict child PTS. Like the bivariate model for child-reported family violence, the trivariate model showed associations between family violence and child PTS. The cross-lagged path from child-reported family violence wave 1 to child PTS wave 2 was statistically significant [ $\beta = .44$ ,  $SE = .47$ ,  $p = .001$ ]. The autoregressive paths for parental stress wave 2 to wave 3 [ $\beta = 0.38$ ,  $SE = .17$ ,  $p = .018$ ] and child PTS wave 2 to wave 3 [ $\beta = .49$ ,  $SE = .20$ ,  $p = .018$ ] were also statistically significant. The RI-CLPM is presented in Supplementary Figure 8. After adding covariates, the path from family violence wave 1 to wave 2 also became significant [ $\beta = 0.28$ ,  $SE = .10$ ,  $p = .040$ ]. The RI-CLPM of parent-reported family violence (see Figure

4) showed no significant cross-lagged paths from family violence to parental stress or from parental stress to family violence. The RI-CLPM did reveal a statistically significant cross-lagged path from parental stress wave 1 to family violence wave 2 [ $\beta = .24$ ,  $SE = .27$ ,  $p = .046$ ], meaning decreases in parental stress predicted decreases in family violence. The autoregressive paths for parent-reported family violence [wave 1 to wave 2:  $\beta = .47$ ,  $SE = .11$ ,  $p = .003$ ], parental stress [wave 2 to 3:  $\beta = .39$ ,  $SE = .17$ ,  $p = .017$ ], and child PTS [wave 2 to 3:  $\beta = .58$ ,  $SE = .19$ ,  $p = .005$ ] were also statistically significant. Adding covariates resulted in an extra statistical autoregressive path for child PTS from wave 1 to wave 2 [ $\beta = .56$ ,  $SE = .24$ ,  $p = .027$ ]. In sum, the effect of family violence on child PTS was not mediated by parental stress but changes in child-reported family violence predicted changes in child PTS and decreases in parental stress predicted decreases in parent-reported family violence.

**Figure 4** Bidirectional intrafamilial associations between parent-reported family violence, parental stress and child PTS across one and half year after referral to Child Protection Service



Note. CFI = 1.00, TLI = .98, RMSEA = .03. Dotted lines represent non-significant effects.

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

### ***The role of parents' PTS in the intrafamilial associations between family violence and child PTS***

To test whether the effect of family violence on child PTS was mediated by parent PTS, we ran trivariate RI-CLPMs. In this model, no cross-lagged paths including parent PTS were found, whether children or parents reported on family violence. Decreases in child-reported family violence predicted decreases in child PTS symptoms at wave 2 [ $\beta = .46$ ,  $SE = .44$ ,  $p < .001$ ]. Autoregressive paths for parent PTS from wave 1 to wave 2 [ $\beta = .53$ ,  $SE = .14$ ,  $p < .001$ ] and wave 2 to wave 3 [ $\beta = .64$ ,  $SE = .12$ ,  $p < .001$ ]

were statistically significant. For child PTS the path from wave 2 to wave 3 was significant [ $\beta = 0.51$ ,  $SE = .20$ ,  $p = .013$ ]. The RI-CLPM is presented in Supplementary Figure 14. The RI-CLPM including covariates also showed a significant path from family violence path 1 to path 2 [ $\beta = 0.28$ ,  $SE = .11$ ,  $p = 0.046$ ]. For the model with parent-reported family violence, all autoregressive paths were statistically significant [family violence wave 1 to 2:  $\beta = .62$ ,  $SE = .19$ ,  $p = .012$ ; wave 2 to 3:  $\beta = .68$ ,  $SE = .22$ ,  $p = .007$ ; parent PTS wave 1 to 2:  $\beta = .47$ ,  $SE = .18$ ,  $p = .008$ ; wave 2 to 3:  $\beta = .61$ ,  $SE = .11$ ,  $p < .001$ ]; child PTS wave 1 to 2:  $\beta = .50$ ,  $SE = .23$ ,  $p = .036$ ; wave 2 to 3:  $\beta = .58$ ,  $SE = .19$ ,  $p = .004$ ]. The RI-CLPM for parent-reported family violence is presented in Supplementary Figure 17. Statistical significance of paths did not change after controlling for covariates. In sum, the effect of family violence on child PTS was not mediated by parent PTS. Child-reported family violence predicted changes in child PTS.

### ***The role of emotional security in intrafamilial associations between family violence and child PTS***

We ran trivariate RI-CLPMs to test whether the effect of family violence on child PTS was mediated by emotional security. For neither parent-or child-reported family violence, statistically significant cross-lagged paths were found from family violence to emotional security and from emotional security to child PTS. The RI-CLPM, including the child-reported family violence (see Supplementary Figure 20) showed a statistically significant cross-lagged path from child-reported family violence wave 1 to child PTS wave 2 [ $\beta = .32$ ,  $SE = .48$ ,  $p = .014$ ]. The autoregressive path from emotional security wave 2 to wave 3 [ $\beta = 0.44$ ,  $SE = .18$ ,  $p = .020$ ] was statistically significant. After adding covariates, the path from family violence wave 1 to wave 2 also became statistically significant [ $\beta = .30$ ,  $SE = .10$ ,  $p = .028$ ]. The RI-CLPM for parent-reported family violence (see Supplementary Figure 23) showed that the autoregressive path from child PTS wave 2 to 3 was statistically significant [ $\beta = .60$ ,  $SE = .19$ ,  $p = .004$ ]. Adding covariates did not change the statistical significance of the paths. To summarize, the effect of family violence on child PTS was not mediated by emotional security. Decreases in child-reported family violence predicted decreases in child PTS.

### **Sensitivity analyses**

Sensitivity analyses were performed to test the robustness of our results. Sensitivity analysis with only one child per family was performed and showed similar results in the sign and significance of the cross-lagged path from child-reported family violence to child PTS in all the RI-CLPMs. The cross-lagged path from parental stress to parent-reported family violence was no longer statistically significant (changed from .046 to .207) when only one child per family was included.

## Discussion

For child-reported family violence but not parent-reported violence, intrafamilial decreases in family violence after referral to CPS predicted decreases in children's PTS symptoms one year later, but children's PTS symptoms did not predict changes in family violence. Contrary to our hypotheses, decreases in family violence did not predict decreases in parental stress and parent PTS, and these parental stressors did not explain decreases in children's PTS. However, for the model that included family violence from the parents' perspective, decreases in parenting stress after referral to CPS predicted decreases in family violence one year later. Finally, changes in family violence did not predict changes in feelings of emotional security, and emotional security did not predict children's PTS symptoms. Therefore, we can conclude that decreases in child-reported family violence predict decreases in child PTS, but parenting stress, parent PTS, and emotional security do not explain recovery in child PTS symptoms after reduction of family violence.

In line with a previous longitudinal study (Galano et al., 2021), our results underscore the risks of exposure to family violence. The lagged association between family violence and child PTS was statistically significant and demonstrated a strong effect, suggesting an important effect for clinical practice. For children to recover from family violence, it is important that they perceive a reduction in the level of family violence. A possible explanation why decreases in parent-reported violence did not predict decreases in child PTS is that child-reported violence regards violence witnessed by children, whereas parent-reported violence includes also violence that children may not be always witness of. In contrast to previous, cross-sectional studies (Crusto et al., 2010; El-Sheikh et al., 2008; Telman et al., 2016), parental stressors and emotional security did not explain longitudinal associations between family violence and children's PTS symptoms. Because the current study design and analysis plan reduced confounding of causal interpretations of correlational effects, these findings may be taken to reconsider the role of parental stressors and emotional security in recovery from family violence. Further consideration of previous studies showed differences in informant, outcome measures, and definition of family violence. Most previous studies solely included interparental violence, while our study used a broader definition of family violence that also includes child abuse. Also, most studies used parents as an informant for children's PTS symptoms or included general functioning instead of PTS symptoms. For example, in contrast to the longitudinal study of Renner and Boel-Studt (2013), who found parental stress mediated the relationship between psychological violence and child functioning, we used a broader definition of family violence and included PTS symptoms as an outcome measure instead of general child functioning.

Surprisingly, we found that after referral to CPS decreases in parenting stress predict decreases in family violence one year later as reported from the parents' perspective. This shows that it is important to follow up on the role of parenting stress as a modifiable factor that might be used to accelerate recovery in family safety and child functioning. A recent study also demonstrated that parents who were exposed to family violence not only felt more parental stress than parents without family violence, but also were at greater risk to abuse their child (Temple et al., 2024). Furthermore, while emotional security and parental stressors might explain how family violence leads to child PTS (Cummings et al., 2006; El-Sheikh et al., 2008), recovery may take place through other mechanisms. Another interesting finding was that less improvement was seen in the second time interval, perhaps due to this interval being a half year shorter than the first. Another possible explanation could be that CPS initially helps to establish more safety and decreases the level of stress in the family, but in the long term it is difficult to continue this progress.

## Limitations

First, associations were stronger for variables with the same source than for variables with different sources, meaning that the perspectives of parents and children should be considered separately. For example, the associations between family violence and child PTS were stronger for child-reported family violence than for parent-reported family violence. A recent systematic review (Meinck et al., 2023) of child-reported violence concluded that psychometric properties of the CTS-PC were adequate. Although our total number of included families is relatively large considering the clinical group, a second limitation was the large number of missing values for the child-reported variables. An explanation for the missing values could be that especially children with severe child PTS symptoms may avoid thinking about their traumatic experiences and therefore also avoid participation in the measurements of this study that has a focus on trauma and violence (Danese, 2020). Despite the confidentiality of their responses in this study, children could also be hesitant to report incidents of family violence. Children may be concerned about the consequences of mandated reporting. As there was evidence suggesting that missing data were associated with income and family composition, these variables were included as covariates, reducing the likelihood that selective missingness affected the results. A third limitation is that the time intervals were unequal. The first interval was one year and the second a half year, and therefore we could expect less change from the second to the third wave. It could also be that CPS intervened immediately after report, resulting in more change in the first interval. Another limitation is that we included multiple children from the same family and data of children within the same family could be dependent. However, sensitivity analysis with one child per family showed substantively similar results. Another limitation was that the alpha was set at .05, while a more conservative alpha could have decreased the risk of type 1 errors. Furthermore, we had a narrow definition of recovery. It could

be that, although children reported a decrease in child PTS, they still experienced other mental health problems. A last limitation is that we did not have specific information about treatment during the period after referral to CPS. Obviously, treatment for parents, children, or the family during this period may have had an effect on parent and child functioning. Previous research with the same sample revealed that 79% of families received help. For children, this percentage was 56% and these children showed a greater decline in PTS symptoms than children who did not receive help (Steketee et al., 2021).

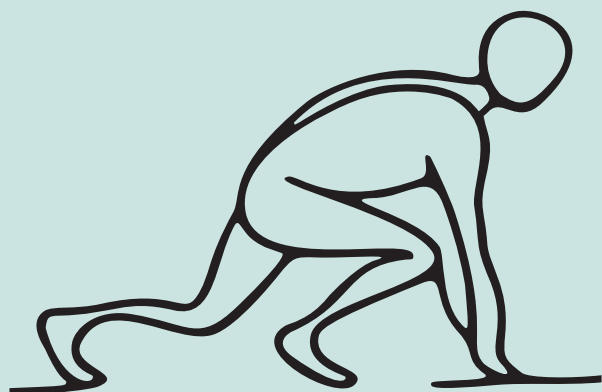
### **Implications and recommendations for future research**

Besides offering trauma treatment, as this is the first choice of treatment for children with PTS symptoms (AACAP, 2010; NICE, 2018), our study suggests that reducing family violence may be important in itself for recovery. Although our study did not provide evidence that parental stressors and emotional security are modifiable factors that might be used to accelerate recovery, parental stress was linked with family violence and therefore interventions focusing on lowering parental stress could help families to establish family safety. To further understand how children recover after family violence, other contextual factors, like parent-child relationship (Unhjem et al., 2023), and neurobiological systems (Cross et al., 2017) may be considered. Furthermore, intervention studies can also help to better understand the mechanisms in recovery, by comparing intervention components that are focused on different factors, like parental stress, trauma treatment, and safety in the family. In subsequent studies it is important to monitor children over a longer period with fixed time intervals to see if PTS symptoms further diminish and feelings of emotional security restore. To better understand the cumulative impact of interparental violence and child abuse, future research should consider comparing analyses on family violence with separate analyses of interparental violence and child abuse.

### **Conclusion**

This study showed that changes in child-reported family violence were predictive of recovery in children. In contrast to our hypotheses, parental stress, parent PTS, and emotional security did not play a role in the intrafamilial associations between family violence and child PTS. However, parental stress was related to family violence, as decreases in parental stress predicted decreases in parent-reported family violence. Our results emphasize that for children to recover from PTS it is important to improve family safety. Attention to parental stress can help families to restore family safety. To stimulate recovery after family violence and prevent the development of mental problems in adulthood (Scott et al., 2023), more in-depth research of family processes is needed.





# 3

## **Effectiveness of a high-intensive trauma-focused, family-based therapy for youth exposed to family violence: Study protocol for a randomized controlled trial**

Fictorie, V., Jonkman, C., Visser, M., Vandenbosch, M., Steketee, M.,  
& Schuengel, C. (2022). Effectiveness of a high-intensive trauma-focused,  
family-based therapy for youth exposed to family violence: Study protocol  
for a randomized controlled trial. *Trials*, 23, 46. doi:10.1186/s13063-021-05981-4

## Abstract

**Background:** Family violence is a common problem with direct adverse effects on children as well as indirect effects through disruption of parenting and parent-child relationships. The complex interrelationships between family violence, parenting, and relationships make recovery from psychological responses difficult. In more than half of the families referred to mental health care after family violence, the violence continues. Also, the effect sizes of “golden standard” treatments are generally lower for complex trauma compared to other forms of trauma. In the treatment of complex trauma, trauma-focused therapies including cognitive restructuring and imaginal exposure are most effective, and intensifying therapy results in faster symptom reduction. Furthermore, there is promising evidence that adding a parental component to individual trauma treatment increases treatment success. In family-based intensive trauma treatment (FITT), these factors are addressed on an individual and family level in a short period of time to establish long-term effects on the reduction of trauma symptoms and recovery of security in the family. This randomized controlled multicenter study tests if FITT is an effective treatment for concurrent reduction of trauma symptoms of children, improvement of parenting functioning, and increasing emotional and physical security in children, through the improvement of parent-child relationships.

**Methods:** The effectiveness of FITT will be tested by a RCT design. A total of 120 adolescents with a history of family violence and PTS symptoms will be randomized to (a) an intensive trauma treatment with a parent and systemic component (FITT), (b) an intensive trauma treatment without these components (ITT), and (c) treatment as usual (TAU, low-frequency trauma treatment with parent therapy and family sessions). Changes in children’s trauma symptoms, child and parent functioning, and emotional and physical security in the family will be monitored before, during, after, and at 3 months follow-up.

**Discussion:** Comparing these interventions with and without a high intensive frequency and parenting and family components can help to understand if and how these interventions work and can contribute to the ambition to recover from the impact of family violence and restore emotional and physical security for children and young people.

## Introduction

### Background and rationale

#### *The prevalence and impact of family violence*

Family violence is a common problem and affects children and their families. In the Netherlands, almost 6% of the population aged 18 and older experienced some incident of family violence over the 5 years prior to the study (Van Eijkern et al., 2018). In 2018, it was estimated that between 26 and 37 children and youth up to age 18 years per 1000 were victims of child maltreatment; in almost half of these cases, child maltreatment happened in a context of family violence, mostly between parents (van Berkel et al., 2020). Family violence has a strong adverse impact on children, both immediately and in the long term, across somatic and psychological domains (L. R. A. Alink et al., 2012). Children can experience problems in multiple domains of functioning (Fowler & Chanmugam, 2007) and are at risk to develop posttraumatic stress (PTS) symptoms (Crusto et al., 2010). Besides direct effects of exposure to family violence, the association of family violence with parenting and the parent-child relationship indirectly increases the risk of maladaptive developmental pathways (5–7). Family violence has an impact on parents' mental health, such as PTS disorder (Dutton et al., 2006) and depression (Renner, 2009). Parental PTS can mediate the effect of violence on parenting behavior (Levendosky & Graham-Bermann, 2000), and higher levels of parental stress are associated with higher levels of children's PTS (Crusto et al., 2010). The influence of family violence on children, parents, and thereby on parenting and the parent-child relationship makes family violence a complex problem. Effect sizes of "golden standard" trauma treatments are generally lower for childhood trauma like family violence than for other forms of trauma (Ehring et al., 2014). With regard to long-term safety in the family, in more than half of the families referred to mental health care after family violence, the violence was still severe or occurred frequently one and a half years later (Steketee et al., 2021). This indicates a need for interventions for the whole family system that address long-term safety.

#### *Direct pathway: the effects of family violence on children*

Family violence has a direct effect on children's functioning. After exposure to family violence children can develop posttraumatic stress symptoms, anxiety, and depressive symptoms (Janssens et al., 2019; Tierolf et al., 2014). Almost a quarter of young children exposed to family violence develop posttraumatic stress (PTS) symptoms at clinical levels and another 16% in the subclinical range (Crusto et al., 2010). In a referred sample, 21% of children exposed to family violence had clinical posttraumatic stress symptoms (Telman et al., 2016). Children's direct responses to violence have been conceptualized using cognitive context theory (Grych & Fincham, 1990). According to this theory, violence is perceived as a stressor, leading to cognitive appraisal and selection and generation of coping responses.

Contextual, cognitive, and developmental factors determine children's appraisal and ensuing responses to family violence. For example, children who consider the violence as a negative event and attribute the conflict to themselves can experience more stress than children who consider the conflict as unimportant or attribute the conflict to others or the circumstances (Grych & Fincham, 1990). According to emotional security theory (EST; Davies & Cummings, 1998), children try to maintain a sense of safety and security within the family system, which may lead to emotional, behavioural, and cognitive short-term adaptations that may be maladaptive in the long run and outside the context of the family. In reaction to the violence, children show intense distress (emotional reactivity; Katz et al., 2007), avoidance of or involvement in the conflict (behavioural regulation; Fosco et al., 2007; Koss et al., 2011) and update their internal representations of the integrity of the family and the risk that they are running to become a target of violence themselves (cognitive response; Fosco, DeBoard, et al., 2007). Children can become more vulnerable to psychological problems if they experience prolonged difficulties in achieving and maintaining safety and security within the family system (Davies & Martin, 2013).

***Indirect pathway: the effect of family violence on parents and family relationships***

In addition to direct effects, family violence may also indirectly cause emotional and behaviour problems in children through parenting and family relationships. According to the EST, family violence leads to parenting difficulties that negatively influence the parent-child relationship and the representation of the parent-child relationship and undermine children's well-being. Exposure to family violence has been linked to more negative and less positive parenting compared to parenting in non-violent families (Osofsky, 2003). Parents involved in family violence showed more harsh discipline towards their children (Osofsky, 2003), were less supportive, showed less effective parenting (Levendosky & Graham-Bermann, 2001), were less emotionally available (Sturge-Apple et al., 2008; Visser et al., 2016), and used more psychological control towards their children (Fauber et al., 1990; Gonzales et al., 2000). These parenting difficulties make it difficult for children to see their parents as a source of protection and support. For example, maladaptive parenting mediates the relationship between family violence and children's internalizing problems (Carter et al., 2020). Furthermore, there is evidence for the association of family violence with a disturbed parent-child interaction (Sturge-Apple et al., 2008; Visser et al., 2016). High levels of parental unavailability in combination with high levels of family violence are associated with insecure representations of the parent-child relationship, and these representations are associated with children's engagement difficulties at school (Sturge-Apple et al., 2008). Also, the magnitude of the association between family violence and children's internalizing problems is dependent on the degree of parental warmth and availability (Carter et al., 2020).

### ***Treatment after family violence***

International guidelines for children (AACAP, 2010; NICE, 2018) recommend individual trauma-focused cognitive behavioural therapy (TF-CBT) and eye movement desensitization and reprocessing (EMDR) after traumatic events, like family violence. On average, TF-CBT and EMDR are effective in addressing PTS symptoms of children (Mavranouzouli et al., 2020). However, treatment effect sizes were generally lower for different forms of childhood maltreatment like family violence, compared to single-event trauma (Ehring et al., 2014). Furthermore, most studies on complex trauma focused on TF-CBT for adults instead of children, and in general, the number of trials with EMDR was limited. In contrast to EMDR, TF-CBT is a multicomponent treatment consisting of non-trauma-focused and trauma-focused components. When treating adults with complex trauma, trauma-focused therapies that include cognitive restructuring and imaginal exposure are most effective (Coventry et al., 2020). In line with this research, a Dutch study (Opel et al., 2021) recently showed that (a) exposure therapy is effective in the treatment of adults with complex trauma and (b) adding a non-trauma-focused component (affective and interpersonal regulation training) to the exposure therapy did not result in better outcomes. Interestingly, intensifying the exposure therapy resulted in faster symptom reduction. The faster reduction of symptoms is especially important for youth because posttraumatic stress hinders development (Fowler & Chanmugam, 2007) and adolescence is a critical period for social development, including peer influence (Brown et al., 2008). There are also promising results in intensive trauma-focused treatment for adults that combined EMDR and imaginal exposure (Van Woudenberg et al., 2018) and for adolescents who received intensive exposure therapy (Hendriks et al., 2017). The characteristic of these intensive treatment programs is that the trauma treatment is given by different therapists. Therapist rotation is thought to decrease fear and avoidance behavior of the therapist (Van Minnen et al., 2018) and thereby increase treatment fidelity.

Besides offering trauma-focused therapy and intensifying the frequency in which these therapies are offered, trauma treatment might be enhanced by including trauma-focused bodily oriented therapy (Van der Kolk, 2015). After trauma, children can experience flashbacks and intense emotions like fear, bodily sensations, and physical complaints (Fisher, 2019). According to Lang's informational theory (Lang, 1979; Lang & Cuthbert, 1984) fear is an associated network of information based on previous experiences, developed to avoid or flight from danger in order to increase survival. This network is activated when confronted with a stimulus that matches information stored in this network. Based on these previous experiences, this stimulus is associated with a specific meaning and physiological and behavioural response (Rauch & Foa, 2006). For example, for someone who experienced a life-threatening fire, the sound of a siren could be a stimulus associated with danger and response elements like racing heart, muscle tensing, and hiding. These

responses once were adaptive and promoted survival during the traumatic events but are now maladaptive (Fisher, 2019). Bodily oriented therapy, developed from clinical practice, is focused on the affective and behavioural components of these habitual responses. Combining trauma therapy with physical activities has been found associated with lower PTSD symptoms compared to trauma therapy without physical activities (Rosenbaum et al., 2015). One randomized trial found that trauma-informed yoga reduced PTS symptoms (van der Kolk et al., 2014). These findings justify the inclusion of bodily oriented intervention components alongside other trauma-focused components.

Trauma-focused therapeutic components like EMDR and exposure may reduce PTS but may not automatically lead to improvements in parent functioning and the parent-child relationship. To achieve this, parental and systemic components are added to treatment programs like TF-CBT. Especially in situations of family violence that affect the whole family system, it is important to examine the value of adding parental and systemic components to EMDR and exposure. Meta-analytic data shows that interventions to reduce child maltreatment yielded larger effect sizes if focused on parental skills and social/emotional support than interventions without such focus (van der Put et al., 2018). Evidence that adding a parental component to individual trauma treatment increases treatment success, measured in children's PTS symptoms, is also promising, yet inconclusive (Mavranzezouli et al., 2020). Few studies have systematically reviewed and/or meta-analytically examined the effectiveness trials that included interventions focusing on parenting factors in situations of family violence.

### ***The added value of parent training and parent-child sessions***

A systematic literature search revealed a limited but growing body of research on how parenting training and parent-child sessions may lead to changes in parenting behavior, in the parent-child relationship, and especially in family safety. Four systematic reviews were identified on parenting-focused interventions for violence in families (Austin et al., 2019; Hackett et al., 2016; Lindstrom Johnson et al., 2018; Rizo et al., 2011). One meta-analysis (Lindstrom Johnson et al., 2018) concluded that parent-child or parent intervention positively affects positive parenting behavior and children's functioning. There was no difference in effect between parent versus combined parent and child intervention but statistical power was too low. Another review (Rizo et al., 2011) concluded that children with outside support fared better on behavior problems, that improvement was stronger when offering more than five contacts to the family, and that changes in parenting behavior and psychiatric symptoms were largely responsible for treatment effects on children's conduct problems. It was not possible to draw unambiguous conclusions about how parent- and family-focused interventions affect parent functioning, child functioning, and the parent-child relationship due to the limitations of the reviewed studies. These limitations included

the relatively large variation across studies in the manner that interventions were offered, in the types of intervention offered, and in the target of the intervention and outcome measures. Also, understanding the role of parenting and parent-child relationships within therapeutic interventions is hampered by methodological challenges, such as informant bias in the case of self-report instruments of parenting and relationships. Furthermore, there is a need for larger sample sizes, controlled study designs, protocolled treatments, and assessment of treatment fidelity (Austin et al., 2019). Because of the great variations in type of interventions in the different studies, it is not possible to draw conclusions about the parental factors most important to cause changes in parent and child functioning and the parent-child relationship. There is some evidence that trauma-informed parenting interventions improving positive parenting skills are most important (Lindstrom Johnson et al., 2018) and focusing on the support system and parental health is promising (Rizo et al., 2011). Most multicomponent treatments are focused on these factors (Rizo et al., 2011). To understand the added value of attention to parental factors in the treatment of family violence, studies are needed of (a) protocolled treatments; (b) treatments focused on specific parent components, like trauma-informed parenting, support, and parental health; (c) different types of instruments (observation, questionnaires, interview) and for multiple informants; (d) outcome measures for parenting behaviour, parent-child relationship, and family safety; (e) controlled study designs; (f) large study samples; and (g) assessment of treatment fidelity.

### ***Family-based intensive trauma treatment***

Because of the severe impact of family violence on children and their families and the complexity of family violence through the reciprocal influence of children's PTS and parent and family functioning, we developed an intervention protocol that addresses these factors on an individual and family level in a short period of time: the family-based intensive trauma treatment (FITT). The goal of FITT is to establish long-term effects on the reduction of children's trauma symptoms and recovery of security in the family. By first concurrently reducing children's trauma symptoms and improving parenting functioning, the stage is set to increase the emotional and physical security in children through the improvement of the parent-child relationship.

FITT therefore consists of (a) intensive trauma treatment (exposure, EMDR, bodily oriented therapy) for the child; (b) individual parent therapy, based on the horizon method (Visser et al., 2015) (the Horizon-method is originally a group-based version of TF-CBT; Visser, 2007), focusing on lowering parental stress and increasing trauma-sensitive and supportive parenting; and (c) family therapy focusing on sharing thoughts and feelings about the traumatic events, recognizing and breaking destructive patterns, and finding solutions for recurring problems.

### ***Effectiveness study of FITT***

This study examines to which extent FITT is an effective treatment for concurrent reduction of children's trauma symptoms, improvement of parenting functioning, and enhanced emotional and physical security in children, through the improvement of parent-child relationships—in order to establish long-term effects on the reduction of trauma symptoms and recovery of security in the family. In this multicenter study with a randomized controlled design, we compare FITT with an intensive trauma treatment without a parent and systemic component (ITT) and with treatment as usual (TAU) and low-frequency trauma treatment with parent therapy and family sessions). Comparing these interventions with and without specific components contributes to understanding if these interventions are effective and how these interventions work (Cuijpers et al., 2019). These insights may be used to increase treatment effectiveness (Kazdin & Nock, 2003) for adolescence with complex traumatic experiences. To further detect the mechanism of change, we included measurements during treatment (Kazdin & Nock, 2003).

### **Objectives**

The primary objective is to examine the effectiveness of parental and systemic components that complement an intensive trauma treatment for children who have been exposed to family violence in the family. This objective translates into the following research question:

1. Does intensive trauma therapy for children with a family-based component (FITT) lead to a stronger reduction of trauma symptoms of children and a stronger increase of structural emotional safety than intensive trauma therapy without a family-based component (ITT)?

In addition, secondary objectives regard the elucidation of the intervention mechanism and effects on secondary outcomes. These objectives lead to the following research questions:

1. Does intensive trauma therapy for children with a family-based component (FITT) lead to faster reduction of trauma symptoms and increase of structural emotional safety than low-frequency trauma treatment with parent therapy and family sessions (TAU)?
  - (a) After 4 weeks of treatment, does intensive trauma therapy for children with a family-based component (FITT) lead to a stronger reduction of trauma symptoms and a stronger increase of structural emotional safety than low-frequency trauma treatment with parent therapy and family sessions (TAU)?
  - (b) After the end of treatment, does intensive trauma therapy for children with a family-based component (FITT) lead to an equal reduction of trauma symptoms and an equal increase of structural emotional safety as in low-frequency trauma treatment with parent therapy and family sessions (TAU)?

2. At the end of treatment, to what extent do we find the differences between intensive trauma therapy for children with a family-based component (FITT) and intensive trauma therapy without this family-based component (ITT) in trauma-informed parenting?

### **Trial design**

This multicenter study is a parallel-group, randomized controlled component trial to examine (1) the addition of a component with parenting therapy and family sessions to an intensive trauma-focused therapy component and (2) the addition of an intensive component to a low-frequent trauma-focused therapy with parenting therapy and family sessions. This study is a superiority trial comparing FITT and TAU after 4 weeks of treatment and FITT and ITT at end of treatment and follow-up. The comparison between FITT and TAU at follow-up concerns an equivalence trial. This randomized controlled design includes follow-up with 96 (completer's rate 80%) children and their caregiver(s) divided over two intensive trauma treatment arms and one treatment as a usual arm. The allocation rate for all comparisons is 1:1. The effectiveness trial comprises a pre-treatment, during treatment, end of treatment, and follow-up design.

3

## **Methods: participants, interventions, and outcomes**

### **Study setting**

This multicenter research study takes place in four different clinical health care settings for youth in the Netherlands: Child and Youth Trauma Centre Kenter Jeugdhulp, GGZ Rivierduinen, UMC Utrecht, and Arq.

### **Eligibility criteria**

Children are eligible to participate in the study if they meet the following inclusion criteria: (a) the child has been exposed to family violence; (b) the acute safety in the family has been established; (c) the child is between 12 and 20 years old; (d) the child lives at home with its caregiver(s); (e) caregivers, living with the child can participate in the systemic components; (f) the child has posttraumatic stress symptoms, at least intrusions and avoidance; and (g) caregivers and children master the Dutch language. The exclusion criteria for participating in the study are (a) children and caregivers who have acute psychotic symptoms or severe alcohol and drug addictions and (b) children with a suicide attempt in the past 3 months. The in- and exclusion criteria are established with an intake interview with a trained therapist and standardized questionnaires.

All therapists participating in the study are trained in the overall treatment program and have additional training in the part of the treatment program they will perform. Exposure

therapy will be performed by therapists who have basic training in cognitive behavioural therapy. EMDR therapy will be performed by the therapists who completed the advanced EMDR training (VEN, Dutch EMDR Association). The bodily oriented therapy is offered by psychomotor therapists or therapists with experience in trauma and bodily oriented therapy under the supervision of an experienced psychomotor therapist. Parent therapy is performed by a family therapist or family worker. Together with a child therapist, the family therapist/worker will also offer the family sessions.

### **Who will take informed consent?**

Children between the age of 12 and 20 years old and referred to one of the participating trauma centres after being exposed to family violence will be given a brochure about the study, so are their parents. Subsequently, the therapist asks the family permission to share their contact details with the researcher. After approval, the therapist will send the researcher the contact details by email. Within two working days, the researcher will contact the family members separately to explain the study. An information letter with detailed information about the study will be sent to the families before the first intake interview at the respective center. The families will have at least 1 week to consider their decision about participating in the study. If the family agrees to participate, informed consent will be sought from both parents, and children during the first intake. After the inclusion criteria are met and informed consent is obtained, participating families will be randomly assigned to one of the treatment conditions by an independent researcher using a computerized randomization procedure with lottery drawings.

### **Additional consent provisions for collection and use of participant data and biological specimens**

Participants will be informed that if they withdraw from the trial, their previously collected data will be used for the study. In the consent form, participants will be asked permission for the insight into their data, when relevant, by other people from the research team and regulatory authorities that are mentioned in the information letter. Participants will also be asked if the research team may contact them for future studies. The trial does not involve the collection of biological specimens.

### **Interventions**

#### ***Explanation for the choice of comparators***

Intensive trauma therapy (ITT) is the comparator of family-based intensive trauma treatment (FITT) to examine the addition of a component with parenting therapy and family sessions to an intensive trauma-focused therapy component. It is important to understand if this addition is more effective in reducing trauma symptoms, improving parenting functioning, and increasing emotional and physical security in children, through the improvement of

parent-child relationships—and thereby establishing long-term effects on the reduction of trauma symptoms and continuation of security in the family.

The second comparator for FITT is treatment as usual (TAU) to examine the addition of an intensive component to a low-frequent trauma-focused therapy with parenting therapy and family sessions. This comparator examines if FITT is as effective as TAU at the end of treatment and if FITT results in faster symptom reduction. In the view of adolescence as a critical period for development and peer influence (Brown et al., 2008), this faster symptom reduction is of great importance.

### ***Intervention description***

**Components of ITT** ITT is a 3-week intensive trauma treatment program and contains a preparation phase in week 1 and an intensive phase in weeks 2 and 3.

#### ***Preparation phase: psycho-education and clustering***

The preparation phase consists of two treatment days. On the first treatment day, the adolescent receives a 90-min online and interactive session of psycho-education about the impact of trauma and the treatment program. The aim is to inform the adolescent about (the consequences of) family violence, trauma and PTS disorder, stress regulation, the window of tolerance, and the treatment program. On the second treatment day, the adolescent is offered a 90-min session in which the different traumatic events are clustered. The adolescent and the therapist choose the six most traumatic memories, ordered by the degree to which they cause flashbacks, nightmares, and avoidance behavior and elicit the most tension. These traumatic events will be the focus of the exposure and EMDR sessions.

#### ***Intensive phase: exposure, EMDR, and bodily oriented therapy***

In the intensive phase, the adolescent has three treatment days per week. Each treatment day has a fixed program consisting of the following:

- 90-min Exposure
- 60-min bodily oriented therapy
- 90-min EMDR

**Exposure** The exposure and EMDR in the program will be given by different therapists. One traumatic memory each day will be treated with exposure and EMDR. The exposure therapy is based on the Dutch translation (Hendriks & Van Minnen, 2020; Van Minnen & Arntz, 2005) of Foa's prolonged exposure protocol (Foa et al., 2008). Prolonged exposure therapy is a form of cognitive behavioural therapy in which the adolescent repeatedly describes the traumatic event in detail and present tense, focusing on the anxiety-

provoking parts of the traumatic event. Every 5 to 10 min, the therapist checks the level of disturbance experienced by the adolescent. The adolescent learns fearful expectations stay away when being exposed to the trauma, and there is no need for avoidance behavior.

**Bodily oriented therapy** Between the sessions, exposure and EMDR individual bodily oriented therapy are offered by psychomotor therapists or therapists with experience in trauma and bodily oriented therapy under the supervision of an experienced psychomotor therapist. Through physical activities, the therapist supports the adolescent to:

- Enhance the understanding of the association between the body and brain
- Enhance the understanding of the association between trauma and the body
- Improve stress-regulation skills
- Recognize the effects of trauma on the body
- Calm the brain and body to prepare for the EMDR session

The therapist will work with bodily oriented exercises to achieve these goals.

**EMDR** For the EMDR session, the most recent Dutch EMDR protocol for children and youth will be used, and all therapists completed the basic and advanced EMDR training of the Dutch EMDR Association. During EMDR therapy, the adolescent is asked to focus on the most disturbing image of the traumatic memory, and the therapist asks questions about the thoughts and feelings associated with the traumatic image and the level of disturbance. The therapist will ask the adolescent to focus on the image and the associated thoughts and feelings and at the same time focus on a distracting stimulus. This will bring a stream of associations in the form of thoughts, feelings, images, and bodily sensations and helps to reprocess the traumatic memory. The therapist will then ask what the adolescent notices and repeat the distracting stimulus. After a while, the adolescent will notice the level of disturbance will lower until the traumatic memory is desensitized. If necessary, the therapist can add cognitive interweaves during the desensitization phase to elicit new associations. An overview of ITT is presented in Table 1.

**Table 1** Overview Intensive Trauma Treatment

| Intensive Trauma Treatment (ITT) |                         |            |
|----------------------------------|-------------------------|------------|
|                                  | Intervention            | Adolescent |
| Week 1: Preparation phase        | Psycho-education        | X          |
|                                  | Clustering              | X          |
| Week 2: Intensive phase          | Exposure                | X          |
|                                  | Bodily-oriented therapy | X          |
|                                  | EMDR                    | X          |

### ***Additions in the preparation phase***

**Psycho-education for family and network** In FITT, the session psycho-education is together with the parents and the support system. This is a 90-min online and interactive session of psycho-education about the impact of trauma and the treatment program. The aim is to inform the adolescent and family system about (the consequences of) family violence, trauma and PTS disorder, stress regulation, the window of tolerance, trauma-sensitive parenting, and resilience and the treatment program.

### ***Additions in the intensive phase***

**Parent therapy** In the intensive phase in weeks 2 and 3, parents receive three 60-min sessions of individual parent therapy per week from one family therapist or family worker. In dialogue, different topics are discussed: parental stress, support system, trauma-sensitive parenting, and traumas within the family. The parent therapy and EMDR take place simultaneously, and after these sessions, there is a short parent-child interaction moment where the adolescents share their thoughts and feelings on which the parents can practice supportive and trauma-sensitive parenting. The aim of the parent therapy is to:

- Lower levels of parental stress
- Increase parental support
- Increase knowledge about trauma-sensitive parenting and increase trauma-sensitive parenting skills
- Increase the insight that the family has a joint family story in which the different family members have their own memories and meaning about the traumatic events.

### ***Additional integration phase***

**Family therapy** The integration phase consists of three 90-min sessions of family therapy. Two therapists support the family to talk about the experienced family violence and current conflicts. The goal of family therapy is to:

- Create a shared trauma narrative
- Recognize destructive communicative patterns
- Recognize emotional individual vulnerabilities and survival behavior and their mutual effects in family relationships
- Improve skills to prevent escalations and cope with destructive patterns
- In Table 2, an overview of FITT is presented.

**Table 2** Overview of the family-based intensive trauma treatment

| <b>Family-based Intensive Trauma Treatment (FITT)</b> |                         |                   |                |               |                |
|-------------------------------------------------------|-------------------------|-------------------|----------------|---------------|----------------|
|                                                       | <b>Intervention</b>     | <b>Adolescent</b> | <b>Parents</b> | <b>Family</b> | <b>Network</b> |
| Week 1:<br>Preparation phase                          | Psycho-education        | X                 | X              | X             | X              |
|                                                       | Clustering              | X                 |                |               |                |
| Week 2 and 3:<br>Intensive phase                      | Exposure                | X                 |                |               |                |
|                                                       | Bodily-oriented therapy | X                 |                |               |                |
|                                                       | EMDR                    | X                 |                |               |                |
|                                                       | Parent therapy          |                   | X              |               |                |
| Week 4:<br>Integration phase                          | Family therapy          | X                 | X              | X             |                |

**Components of TAU** TAU is comparable across the four trauma centres and consists of low-frequent trauma-focused therapy with parenting therapy and family sessions. In contrast to the high intensity of FITT, TAU is offered about once a week and without therapist rotation. In TAU, the adolescents receive therapy from one therapist and parents receive therapy from another therapist. This individual or group-based trauma-focused cognitive behavioural therapy for adolescents and their parents is focused on the following components:

- Psycho-education trauma and PTSD: increasing knowledge about (the consequences of) trauma and family violence and trauma-sensitive parenting and understanding the window of tolerance
- Affect regulation and coping: learning children to recognize and regulate feelings of stress and enhancing coping skills
- Trauma processing: EMDR, exposure, writing therapy, or bodily oriented therapy
- Parenting skills and competence: enhancing trauma-sensitive parenting skills, lowering levels of parental stress, and increasing social support.
- On indication: family relationships—sharing the trauma narrative and accompanying feelings and cognitions (for example feelings of shame or guilt) and strengthening of skills to prevent escalations

### ***Criteria for discontinuing or modifying allocated interventions***

In accordance with the Medical Research Involving Human Subjects Act, the sponsor will suspend the study if there is plausible ground that the continuation of the study will jeopardize the subject's health or safety. The sponsor will then notify the accredited Medical Ethical Committee (from Amsterdam UMC) without undue delay of a temporary halt including the reason for such an action. The study will be suspended pending a further positive decision by the accredited Medical Ethical Committee. The investigator will take care that all subjects are kept informed.

### ***Strategies to improve adherence to interventions***

To increase treatment fidelity, a training protocol for (F)ITT is developed, and the therapists receive training in the (F)ITT protocol before data collection. Furthermore, therapists receive supervision on exposure, EMDR, parent and family therapy, and bodily oriented therapy during data collection. Exposure supervision is given by a healthcare psychologist who is a licensed supervisor from the Dutch cognitive-behavioural therapy association. EMDR supervision is given by healthcare and clinical psychologist who both are licensed supervisors from the Dutch EMDR association. The supervisor for the parent and family sessions is a clinical psychologist with advanced experience in the field of trauma and family therapy. The supervisor for the bodily oriented therapy is an experienced psychomotor therapist who works with traumatized children. To monitor adherence to the treatment protocol, therapists are asked to fill in a treatment evaluation form after each therapy session.

The trial will be monitored by the independent physician of the four participating youth mental health centres. Two times per year, the independent physician will randomly check the research file of a study participant on the following:

- The involvement of a therapist registered in the Dutch register for healthcare professionals
- The presence of a safety plan in cases of suicidal thoughts/ideations and/or self-damaging behavior
- The compliance of in- and exclusion criteria (in the first year, the first three study participants will be checked, and thereafter, every half year, a participant will be randomly checked on in and exclusion criteria)
- Serious adverse events (SAEs) and if these are reported to the independent physician, inspection for healthcare and youth, the research institute and the Medical Ethical Committee
- The presence of the cause conceptualization

If any errors are observed, the files of all study participants within the specific center will be checked.

To monitor the collection, storage, and processing of the data, each year, peer auditors trained in data management will randomly check the research file on the following:

- Presence of informed consents
- Inclusion pace and drop out percentage
- Presence and completeness of the research data

If any errors are observed, the files of all study participants within the specific center will be checked.

Furthermore, daily monitoring of the study will be done by the coordinating investigator, project leader, and principal investigator. Frequent contacts with the four trauma centres and research team meetings will be held to evaluate the progress of the study. All participating trauma centres have a contact person, who will be involved in all phases of the research.

***Relevant concomitant care permitted or prohibited during the trial***

Other psychological care for the adolescent will be paused from the first measurement until follow-up. Ongoing practical support can be continued. In cases of new warning signals of unsafety or suicidal thoughts, crisis interventions are offered by the involved center participating in this study

***Provisions for post-trial care***

After the follow-up measurement, an evaluation with the family will take place according to the procedure of the participating centres. If needed, post-trial care will be offered.

**Outcomes**

Table 3 presents an overview of the time points for each outcome measurement.

### Table 3 Measures

| Measures                                 |                   |             |           | Measurement |         |          |       |
|------------------------------------------|-------------------|-------------|-----------|-------------|---------|----------|-------|
| Measure                                  | Items             | Respondent* | Type      | T(0)        | T(1-11) | T(12/14) | T(13) |
| Child PTSD                               | CAPS-CA           | c           | Interview | *           |         |          | *     |
|                                          | CRIS              | 13          | cp        | *           | *       | *        | *     |
|                                          | TSCC              | 54          | c         | *           |         | *        | *     |
| Child functioning                        | SDQ               | 25          | cp        | *           |         | *        | *     |
|                                          | CDI               | 28          | c         | *           |         | *        | *     |
|                                          | CDC               | 20          | p         | *           |         | *        | *     |
| Parent functioning                       | NOSI-K            | 25          | p         | *           | *       | *        | *     |
|                                          | Trauma-Informed   | 6           | p         | *           |         | *        | *     |
|                                          | IES-r             | 22          | p         | *           |         | *        | *     |
|                                          | YAS-R             | 29          | p         | *           |         | *        | *     |
|                                          | DPAS              | 9           | p         | *           |         | *        | *     |
| Structural emotional and physical safety | CTS               | 77          | p         | *           |         | *        | *     |
|                                          | CTS-pc            | 27+39       | c         | *           |         | *        | *     |
|                                          | PRTI              | 21          | p         | *           |         | *        | *     |
|                                          | ACE-Q             | 10          | p         | *           |         | *        | *     |
|                                          | New IPV incidents | 8           | cp        | *           | *       | *        | *     |
|                                          | SIS               | 43          | c         | *           |         | *        | *     |
|                                          | SIFS              | 7           | c         | *           |         | *        | *     |
|                                          | SIM-PR            | 28          | p         | *           |         | *        | *     |
|                                          | Security scales   | 15          | cp        | *           |         | *        | *     |
|                                          | FIT               | 4 tasks     | cp        |             |         | *        |       |
| Total items child                        |                   |             |           | 232         | 21      | 232      | 232   |
| Total items parent                       |                   |             |           | 335         | 46      | 335      | 335   |

Note. Marked measures are part of routine outcome measuring

### **Primary outcomes**

**Child PTSD symptoms** The Clinician-Administered-Ptsd-Scale-Children-And-Adolescents (CAPS-CA) (Pynoos et al., 2015) is a standardized clinical interview, to assess PTSD conform the DSM-5 standards. A Dutch translation of the CAPS-CA (Meijel et al., 2019) is administered to children aged 8–18. The core traumatic event is chosen based on the life events checklist. If the core traumatic event is a sequence of events, which is often the case in family violence, a brief term is chosen to capture the core of these events. The CAPS-CA assesses the frequency and intensity in which each PTS disorder symptoms occur. A 5-point severity rating scale is used for all symptoms, ranging from 0 (= absent) to 4 (= extreme/incapacitating). An example item is *In the past month, have you had upsetting thoughts, pictures or sounds of what happened come into your mind when you didn't want them to?* A total symptom severity score is calculated by summing the severity scores for items 1–20. A total symptom score can also be calculated per cluster; re-experiencing (items 1–5), avoidance (items 6 and 7), negative alterations in cognitions and mood (items 8–17), and hyperarousal (items 15–20). A symptom cluster score may also be calculated for dissociation by summing items 29 and 30. To determine the PTSD diagnostic status, individual symptoms should be dichotomized as “present” or “absent”. A symptom is considered present only if the corresponding item severity score is rated 2 (= moderate/threshold or higher). Items 9 and 11–20 have the additional requirement of a trauma-relatedness rating of definite or probable. The DSM-5 diagnostic rule requires the presence of at least one criterion B symptom, one criterion C symptom, two criterion D symptoms, and two criterion E symptoms. Also, criteria F (disturbance at least 1 month) and G (disturbance that causes either clinically significant distress or functional impairment) must be met. Reliability of the CAPS-CA in a Dutch sample for the total scale ranged from coefficient  $\alpha$  of 0.77 to .86, and the interrater reliability of the total scale is 0.99. Caps-CA also demonstrated divergent, convergent, and discriminant validity (Diehle et al., 2013).

The Children's Revised Impact of Event Scale (Horowitz et al., 1979) is translated in Dutch (Olff, 2005) and is a questionnaire for the assessment of traumatic impact across different types of trauma and life-threatening events. Children and parents will rate 13 items according to the frequency of their occurrence in the past 24 h in relation to the traumatic experiences (1 = none, 2 = rarely, 3 = sometimes, and 4 = often). Example items are: “Do you think about the ..... even when you don't mean to?”, and “Do you avoid talking about ...?” The sum score is used as an indicator of traumatic impact (ranging from 0 to 65). A score of 30 and over has been suggested as the most efficient cut-off for discriminating heightened risk for PTSD. Within a semi-clinical study population, Cronbach's  $\alpha$  was .89 for the 13-items child version (Verlinden et al., 2014).

The Trauma Symptom Checklist for Children (J. N. Briere, 1996); Dutch translation: Trauma Symptoom Controle Lijst voor Kinderen (Bal, 1998), is a questionnaire to assess the self-reported posttraumatic stress symptoms in children (8–12 years). It consists of 54 items clustering in eight scales: two validity scales (under response, hyper response) and six clinical scales (anxiety (9 items), depression (9 items), post-traumatic stress disorder (10 items), dissociation (10 items), anger (9 items), and sexual concerns (10 items)). A 4-point severity rating scale is used for all symptoms, ranging from 0 (= absent) to 3 (= very often). An example item is “*feeling afraid something bad might happen*”. Reliability was high for all subscales, with a Cronbach alpha ranging from 0.72 to 0.83 in a large sample (Finkelhor et al., 2007).

**Emotional security and physical safety** To assess the severity and intensity of the violence that children have been exposed to, a combined measure will be used including items from the Conflict Tactics Scale (78 items, 8-point rating scale) (Straus et al., 1998), the Conflict Tactics Scale parent child (27 and 39 items, 8-point rating scale) (Straus et al., 1998), the Parents Report of Traumatic Impact (21 items) (Friedrich, 1997); and the Adverse Childhood Experience Questionnaire (10 items, 5-point rating scale) (Felitti et al., 1998). An example item is ‘*I punched or hit my partner with something that could hurt*’. This combined questionnaire has been used in a previous study on the effectiveness of a psycho-educational prevention program for children exposed to IPV (Overbeek et al., 2012). The questionnaire covers the topics and duration of the violence and the nature of the arguments in the relationship with the (ex-partner), followed by items from the Conflict Tactics Scale parent child and Parents Report of Traumatic Impact about problems between parent and child, and traumatic events the child has experienced. The questionnaire also includes items about traumatic experiences in parents’ own childhood. A short questionnaire of 8 items for parent and child is added to assess if any new IPV incidents or other stressful events occurred.

To assess emotional security, the Dutch translation of the Security in the Interparental Subsystem (Davies, 2002) will be used. The Security in the Interparental Subsystem consists of 43-items with a 4-point ordinal scale (1 = not at all true of me, 4 = very true of me). Children are asked to answer questions about previous violence and conflicts between parents and current violence and conflicts between parents and partners. It has three scales and seven subscales: emotional reactivity (emotional reactivity (9 items), behavioural dysregulation (3 items), regulation of exposure to affect avoidance (7 items), involvement (6 items)) and internal representations (constructive family representations (4 items), destructive family representations (4 items), and conflict spillover representations (4 items)). An example item is *When my parents have an argument the family is still able to get along with each other*. The subscales show satisfactory internal consistency and test-

retest reliability, and previous research supported the validity of the SIS scale (Davies et al., 2002). Children will be asked to answer the same questions with respect to past fights and arguments between their parents and current fights and arguments between their mother and partner at T0, T12/14, and T13.

The Security in the Family System scale (Forman & Davies, 2005) will be used to assess how much children perceive their families as a reliable source of protection, stability, and support. The subscale "Secure" will be used, which assesses a secure pattern of emotional security. Children indicate the extent to which they agree with 7 statements using a 4-point scale ranging from "completely disagree" (1) to "completely agree" (4). An example item is *It's worth caring about family members, even when things go wrong*. Psychometric properties of this security subscale are good, Cronbach's  $\alpha = 0.85$  and test-retest reliability = 0.82 (Forman & Davies, 2005).

Caregivers report on children's emotional security, including their emotional reactivity, behavioural involvement, and avoidance, after witnessing arguments between their parents using the Dutch translation of the Security in the Marital Subsystem Scale (SIMS; Davies et al., 2002). Items are completed on a 5-point ordinal scale from 1 (not at all like him/her) to 5 (a whole lot like him/her) and include feeling sad, angry, afraid, and upset (e.g. "Still seems upset after we argue"). The SIMS has been found reliable and has demonstrated discriminant, convergent, and predictive validity (Davies, Harold, et al., 2002).

The Security Scale (Kerns et al. 1996; Kerns et al., 2001) is a 15-item self-report questionnaire for children between the ages of 8 and 18 and measures self-reported attachment security with their parents (Kerns et al., 1996). Children and parents (independently) report on responsiveness and availability of the parent in the parent-child relationship (attachment). Each item is rated on a 5-point Likert scale (1 = strongly agree, 5 = strongly disagree). An example item is 'I feel my mother really understands me'. Several studies indicate adequate reliability and validity (Dwyer, 2005). High internal consistencies for 10 and 12 year olds ( $\alpha=0.82$ ,  $\alpha=0.79$ ) are reported (Kerns et al., 2000). Test-retest reliability over a two-week period was high ( $r=0.75$ ) (Kerns et al., 1996). The Security Scale is related to other attachment measures (Kerns et al., 2000). In a Dutch sample, internal consistency for the child version was  $\alpha = 0.81$  (Scholten et al., 2015).

The Family Interaction Task (FIT) (Weinfield, 2002) is an observational instrument that measures parent-child interaction and consists of four tasks in which parent and child are instructed to complete a series of interactive tasks together. The FIT consists of four structured tasks: (1) guessing words by getting clues, (2) etch a sketch, (3) conflict task, and (4) completing a difficult but solvable puzzle by untangling a fixed ring from a standard

within 4 min. These tasks are designed to elicit variations in parental and adolescent autonomy-promoting behaviors and emotional affect. The tasks are originally developed for children in middle childhood, but the tasks have been adapted for adolescents. Rating scales range from 1 to 5 and a higher score indicates a greater presence of that particular construct. Ratings are based on the complete session. Each videotaped session is independently coded by two coders (researchers). Interrater reliability was adequate ( $n = 101$ , ICC range .87–.94) in a Dutch sample (Scholten et al., 2015).

### **Secondary outcomes**

**Child functioning** The Strengths and Difficulties Questionnaire (SDQ) (Van Widenfelt et al., 2003) is a 25-item questionnaire using a 3-point scale (0 = not true, 2 = very true). The SDQ contains five subscales and one total scale. Subscales are (a) conduct problems (5 items), (b) emotional functioning (5 items), (c) hyperactivity/inattention (5 items), (d) peer problems (5 items), and (e) prosocial behavior (5 items). There is a self-report and parent version. An example item is *I worry a lot*. The internal consistency of the teacher version is good. The parent and self-report versions have an internal consistency that is generally acceptable in Dutch samples (Van Widenfelt et al., 2003). In a Dutch sample Cronbach's alphas were between 0.76 and 0.79 for internalizing problems and between 0.82 and 0.85 for externalizing problems (Goemans et al., 2018).

The Children's Depression Inventory 2 (CDI2) (Kovacs, 1982) is a 28-item self-rated questionnaire that measures the symptoms of depression in children (7–18 years) with four subscales: negative mood/physical symptoms (9 items), negative self-esteem (6 items), interpersonal problems (5 items), and ineffectiveness (8 items). Per item, the child is asked to choose one of three sentences that best fits his/her feelings and thoughts in the past two weeks (e.g. *I am sad all the time*). The answers are calculated in a total score (ranging from 0 to 54). The internal consistency in a Dutch sample was high ( $\alpha = 0.79$ ), just as the test-retest reliability ( $r = 0.79$ ) (Kovacs, 2008). The CDI has high criterion validity and scores on the CDI correlate high with scores on other measures for depression (Kovacs, 2008).

The Child Dissociation Checklist (CDC) (Putnam et al., 1993) is a 20-item parent-rated questionnaire with a 3-point Likert scale (0 = not true, 2 = very true). The child dissociation checklist is a screening instrument for dissociative problems in children (5–18 years). An example item is *'Child does not remember or denies traumatic or painful experiences that are known to have occurred'*. In a sample of maltreated and non-maltreated children Cronbach's alpha was 0.89 (Macfie et al., 2001). Discriminant validity is high (Putnam et al., 1993).

**Parent functioning** To assess parental stress, the Nijmegen Ouderlijke Stress Index—short version (NOSI-K) (Brock et al., 1992) will be used. The NOSI-K is a short version of the Parenting Stress Index (Abidin, 1997) and a 25-item parent-rated questionnaire. The NOSI-K measures the stress related to the parent-child relationship and uses a 6-point scale (1 = totally disagree, 6 = totally agree). An example item is *I often have the feeling I cannot handle things very well*. Cronbach's alpha for mothers and fathers is .90 and .91, respectively (de Cock et al., 2017), and the NOS-K has moderate concurrent, discriminate, and criterion validity (Brock et al., 1992; Prinzie et al., 2007).

To measure caregivers' trauma knowledge, we will use a short self-report questionnaire developed for the training "Caring for Traumatized Children" (Coppens & Van Kregten, 2018). The questionnaire comprises 6 items that reflect the six primary training goals, rated at a 10-point scale (1 = not accomplished, 10 = totally accomplished). Higher scores indicate higher trauma knowledge. An example item is *You know what the impact of trauma is on the development and behavior of your child*.

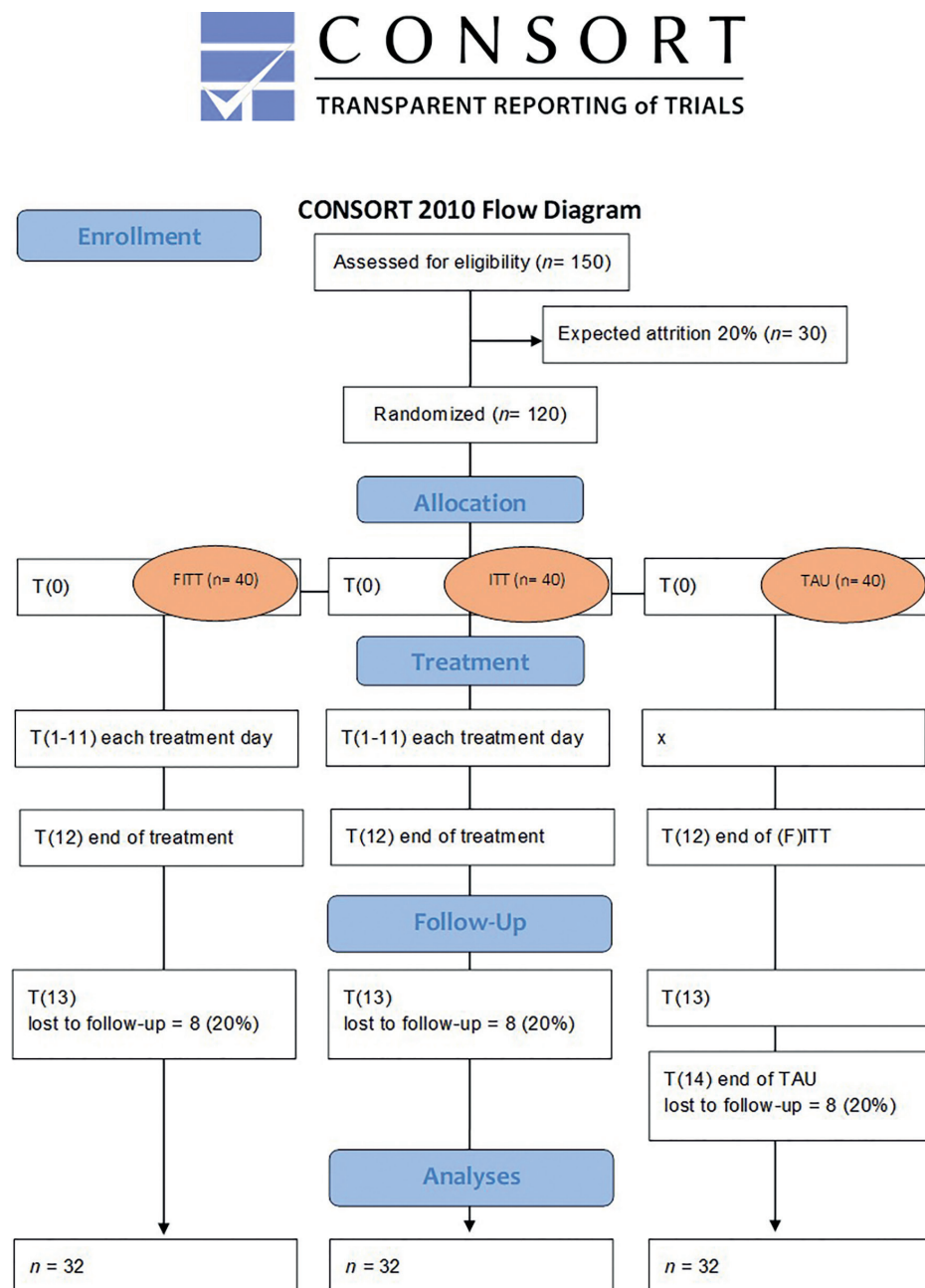
Trauma symptoms in caregivers will be assessed with the Impact of Events Scale – Revised (IES-R) (Weiss, 2007). The Dutch version "Schokverwerkingslijst (SVL-22)" was developed by (Van Der Ploeg et al., 2004). This questionnaire consists of 22 items measuring symptoms of PTSD during the last week. The SVL-22 measures three dimensions: intrusion (9 items), avoidance (8 items), and hyper-arousal (6 items). Parents rate the items on a 5-point Likert scale ranging from "not at all" (0) to "extremely" (4). An example item is *Any reminder brought back feelings about it*. Internal consistency was high (alpha = .88) (Olde et al., 2006). Support construct validity is found in a Dutch study (Van Der Ploeg et al., 2004).

The Young Adult Self-Report (Achenbach, 1997) will be used to assess the psychopathology symptoms in parents. The short version of 29 items will be used in this study with items rated on a 3-point scale (0 = not true, 2 = often true). An example item is *I am too dependent on others*. The Dutch version has good reliability and validity (Wiznitzer, 1992). In a Dutch study, Cronbach's alpha was 0.92 (Visser et al., 2016).

The Daily Psychological Availability Scale (Danner-Vlaardingierbroek et al., 2013) will be used to assess the parental availability for the child eight adapted items of the Daily Psychological Availability Scale. Items are measured using 7-point scales (1 = totally disagree, 7 = totally agree). An example item is *When I spent time with my oldest child after work today, I was not able to focus on my child*. A higher score on this scale represents more psychological availability for the child. Cronbach's alpha was 0.78 for both fathers and mothers (Danner-Vlaardingierbroek et al., 2013).

## Participant timeline

**Figure 1** Consort diagram



## Sample size

Power analysis was conducted to determine whether an informative trial could be conducted given limitations imposed upon the maximum sample due to the duration of the study and size of the population of children indicated for trauma treatment, using G\*power 3 (Faul et al., 2007). Sample size calculation was made based on the assumptions of the primary objective and the first secondary objective. A priori, we decided that adding systemic intervention elements to individual trauma therapy would be justified if it would mean that on average at least one out of five children would have clinically significant benefit when given the full FITT compared to treatment without systemic elements (number needed to treat = 5; equivalent to  $f = 0.18$ ).

For primary objective 1 (Does intensive trauma therapy with a family-based component (FITT) lead to a stronger reduction of trauma symptoms and stronger increase of structural emotional safety than intensive trauma therapy without this family-based component (ITT)?), the sample size was calculated based on between 2 groups by within effect with at least two measurements (pre, end/follow-up), setting  $f = 0.18$  with a power of 80% and a significance level of 5% (two-sided). Default settings were used for the correlation among repeated measures ( $= 0.5$ ) and non-sphericity correction ( $\epsilon = 1$ ). According to the power analysis, a total sample size of 64 children is required.

Secondary objective 1 (Does intensive trauma therapy with a family-based component (FITT) lead to faster reduction of trauma symptoms and increase of structural emotional safety than low-frequency trauma treatment with parent therapy and family sessions?) is based on two measurements (pre and intermediate/follow-up). In accordance with the first sample size calculation, we tested with setting  $f = 0.18$  with a power of 80%, a significance level of 5% (two-sided) was used. Again, default settings were used for correlation among repeated measures ( $= 0.5$ ) and non-sphericity correction ( $\epsilon = 1$ ). Based on this calculation, a total sample size of 64 children is required.

The FITT sample we use to test our first hypothesis will also be used to test the second hypothesis. Taking into account loss to follow-up and measurement unreliability (20%), we set the target sample size of the multicenter randomized controlled trial on  $n = 120$ . Based on the number of families treated in previous years, and based on the current intakes, the recruitment of 120 families that meet the inclusion criteria seems feasible.

## Recruitment

Recruitment will take place in four mental health centres for traumatized children in the Netherlands: Child and Youth Trauma Centre Kenter Jeugdhulp, Arq, UMC Utrecht, and GGZ Rivierduinen. Children and their parents are informed about the study by their therapists

and will receive written information. After their permission, contact details of potential participants are provided to the researchers, who will contact the children and parents separately to provide more details about participation in the study. Children and their parents who are eligible for the trial are asked for informed consent. To reach the targeted sample size, brochures about the study are handed out to referrers and are available for families and therapists at sites.

## **Assignment of interventions: allocation**

### ***Sequence generation***

Random allocation to either condition is needed, in order to reduce selection bias and to be able to attribute effects to parenting training and family sessions added upon an intensive trauma therapy. After informed consent is provided, families will be randomly assigned within each site to one of the treatment conditions. Within the multicenter trial, families are randomized by an independent researcher, following a computer-generated list with each participant having a 33.3% chance of being assigned to FITT, ITT, or TAU. The results of the randomization are communicated to the site per participating family.

### ***Concealment mechanism***

Participating families are randomized by an independent researcher, following a computer-generated list with each participant having a 33.3% chance of being assigned to FITT, ITT, or TAU. The results of the randomization are provided to the center per participating family. Subsequently, the measures and intervention will start.

### ***Implementation***

An independent researcher will generate the allocation and directly informs the treatment team by e-mail about the treatment arm that families receive according to the randomization list. The therapist informs the families.

## **Assignment of interventions: blinding**

### ***Who will be blinded***

Until randomization, both families and therapists are blind to the treatment allocation to mitigate bias due to expectation or disappointment. Nobody will be blinded during the intervention.

### ***Procedure for unblinding if needed***

The design is open-label, and only data analysts will be blinded. Unblinding will therefore not occur.

## **Data collection and management**

### ***Plans for assessment and collection of outcomes***

The instruments with the best psychometric qualities and sensitivity to change in a short time period are selected for this study. For the primary outcomes different types of measurements are included: questionnaires for multiple informants, an interview and an observation task. A description of the study instruments can be found in the “Outcomes {12}” section. For this study, researchers will be trained and certified in the CAPS-CA interview and scoring protocol. The researchers will write a report based on the interview part of the CAPS-CA, and other answers are entered in a SPSS file. All data collected by questionnaires will be collected through an online survey system, Survalyzer, minimizing entry errors. Data will be stored and coded in a SPSS file. The FIT observation tasks will be administered according to a protocol and the recoded tasks will be coded by trained researchers with the use of a standard scoring form. For both the CAPS-CA and the FIT observation task, inter-rater reliability will be calculated for 20 participants. All data will be cleaned before analyses (e.g. checking on double entries, ranges, checking dates of data collections with treatment dates, coding missing data) in IBM SPSS.

### ***Plans to promote participant retention and complete follow-up***

It is common in trauma treatment that clients show avoidance behavior because of the confrontation with anxiety-provoking details of the trauma. To prevent drop out psycho-education about avoidance behavior and the disadvantages of avoiding is offered during treatment. To detect drop out of selective groups, participants who discontinue the treatment program will be asked to continue measurements.

### ***Data management***

All research data will be handled confidentially and will be stored in closed facilities, which can only be assessed by researchers. The research data is confidential and will not be provided to third parties. Privacy of the participants will be protected by allocating key codes to the personalia, which will only be traceable with a separate list. The key codes are 3-digit numbers ranging from 000 to 150 and will be given in consecutive order. This list with personalia (names, addresses, phone numbers) that connects the participants with the research data is exclusively accessible by two of the researchers via an encrypted file and will eventually be destroyed. DarkStor from DANS (Dutch research data repository) will be used to store sensitive data and ArchStor (local data archive of Vrije Universiteit Amsterdam) for datasets that can be used for possible future research projects.

During data collection records of all specifics about the collections (e.g. measurements, dates, details about participants) will be kept in a logbook.

### **Confidentiality**

The research data will be stored and managed by the research team. All employees who work with confidential data will sign a confidentiality agreement, on which they state not to share the information with third parties. The digitalized research materials and confidentiality agreements will be stored in a secured folder on the network of VU Amsterdam. Data will be stored for 15 years, according to Medical Ethical Committee guidelines or for 5 years after the last publication based on this data.

### ***Plans for collection, laboratory evaluation, and storage of biological specimens for genetic or molecular analysis in this trial/future use***

No biological specimens will be collected or stored (see the “Additional consent provisions for collection and use of participant data and biological specimens” section).

### **Statistical methods**

#### ***Statistical methods for primary and secondary outcomes***

The measurement level of each variable is at least ordinal. We control for the duration and severity of family violence (Kitzmann et al., 2003), child functioning, parental psychopathology (Levendosky et al., 2003), and new incidents of family violence as a priori potential confounders. Analyses will be performed using the latest version of the software package Statistical Package for the Social Sciences (SPSS). First, to determine whether changes on continuous measures are different per treatment, we use linear mixed models. Continuous measures with only one time point will be analyzed with independent samples *T*-test. Changes in categorical outcomes over the course of treatment across the conditions are tested with generalized estimating equations (GEE). To handle missing data, we will use maximum likelihood estimation within the linear mixed model analyses. For the planned GEE, we will explore the possibilities to deal with missing data, depending on the amount, randomness, and type of data missing. Analyses will primarily be performed according to the principles of intention-to-treat; however, they will be repeated as per-protocol analyses (see Table 4).

Table 4 Statistical analyses

|                                          | Measure           | Type of Data | Timepoints | Statistical analysis       | Subjects |
|------------------------------------------|-------------------|--------------|------------|----------------------------|----------|
| Child PTSD                               | CAPS-CA           | Categorical  | 3          | GEE                        | ITT/PP   |
|                                          | CRIS              | Continuous   | 4          | Mixed models               | ITT/PP   |
|                                          | TSCC              | Continuous   | 3          | Mixed models               | ITT/PP   |
| Child functioning                        | SDQ               | Continuous   | 3          | Mixed models               | ITT/PP   |
|                                          | CDI               | Continuous   | 3          | Mixed models               | ITT/PP   |
|                                          | CDC               | Continuous   | 3          | Mixed models               | ITT/PP   |
| Parent functioning                       | NOSI-K            | Continuous   | 4          | Mixed models               | ITT/PP   |
|                                          | Trauma-Informed   | Continuous   | 3          | Mixed models               | ITT/PP   |
|                                          | TSI               | Continuous   | 3          | Mixed models               | ITT/PP   |
|                                          | YAS-R             | Continuous   | 3          | Mixed models               | ITT/PP   |
|                                          | DPAS              | Continuous   | 3          | Mixed models               | ITT/PP   |
|                                          |                   |              |            |                            |          |
| Structural emotional and physical safety | CTS               | Continuous   | 3          | Mixed models               | ITT/PP   |
|                                          | CTS-pc            | Continuous   | 3          | Mixed models               | ITT/PP   |
|                                          | PRTI              | Continuous   | 3          | Mixed models               | ITT/PP   |
|                                          | ACE-Q             | Continuous   | 3          | Mixed models               | ITT/PP   |
|                                          | New IPV incidents | Continuous   | 4          | Mixed models               | ITT/PP   |
|                                          | SIS               | Continuous   | 3          | Mixed models               | ITT/PP   |
|                                          | SIFS              | Continuous   | 3          | Mixed models               | ITT/PP   |
|                                          | SIM-PR            | Continuous   | 3          | Mixed models               | ITT/PP   |
|                                          | Security scales   | Continuous   | 3          | Mixed models               | ITT/PP   |
|                                          | FIT               | Categorical  | 1          | Independent samples T-test | ITT/PP   |
|                                          |                   |              |            |                            |          |
|                                          |                   |              |            |                            |          |
|                                          |                   |              |            |                            |          |

Descriptive and exploratory analyses will be carried out by standard methods. All continuous scores will be examined for normality. If variable distributions deviate too much from normality, corrective steps will be taken either by transforming variables or by using non-parametric tests. We will control for child functioning, parental psychopathology, duration, severity, and intensity of interparental violence, and new IPV incidents. The variables are treated as covariables in the analyses mentioned below.

To examine our primary hypothesis, linear mixed models will be used in case of continuous data. GEE will be used for the categorical data. We will use the end of treatment (T12/T14) and intermediate/follow-up time-point (T13) to compare FITT with ITT (objective 1).

To examine our secondary hypotheses, linear mixed models will be used. We will use the end of treatment time-point (T12/T14) to compare FITT with TAU. Control measures are child functioning; parental psychopathology; duration, severity, and intensity of interparental violence; and new IPV incidents. The variables are treated as covariables in the up-mentioned analyses. We will use the Benjamini-Hochberg method to correct for multiple comparisons.

### ***Interim analyses***

No interim analysis will be performed because there are no anticipated problems that are detrimental to the participants.

### ***Methods for additional analyses (e.g. subgroup analyses)***

There is no intention to perform additional analyses.

### ***Methods in analysis to handle protocol non-adherence and any statistical methods to handle missing data***

If children and families drop out from treatment, we will try to continue measurements according to the randomized treatment condition and analyses will primarily be performed according to the principles of intention-to-treat. This means families are analyzed as participants of the treatment condition they are randomized to. However, analyses will be repeated as per-protocol analyses, which means that families are analyzed as participants of the condition they actually received.

### ***Plans to give access to the full protocol, participant level-data and statistical code***

With this publication, public access to the full protocol is granted. Because of privacy regulation and data protection, the participant-level dataset is not accessible. Statistical code will be available upon request.

## **Oversight and monitoring**

### ***Composition of the coordinating centre and trial steering committee***

Daily monitoring of the study will be done by the coordinating investigator, project leader, and principal investigator. Frequent contacts with the four trauma centres and research team meetings will be held to evaluate the progress of the study. All participating trauma centres have a contact person, who will be involved in all phases of the research. Furthermore, an independent physician of each participating center monitors the trial on-site and randomly check the research of participants. Participants can consult an independent expert with questions about the trial.

### ***Composition of the data monitoring committee, its role and reporting structure***

To monitor the collection, storage, and processing of the data, peer auditors trained in data management will randomly check the research file on the following:

- Presence of informed consents
- Inclusion pace and drop out percentage
- Presence and completeness of the research data

If any errors are observed, the files of all study participants within the specific center will be checked.

The presence and completeness of the research data will also be done on a daily basis by the research team.

## **Adverse event reporting and harms**

Adverse events are defined as any undesirable experience occurring to a subject during the study, whether or not considered related to the intervention. All adverse events reported spontaneously by the subject or observed by the investigator or the research team will be recorded. Should a child or a parent seem adversely affected by the questionnaires, interviews or observational task as observed by the researcher or therapist or as reported by the parents or children themselves, it may be decided to (temporarily) discontinue participation in the project. The investigator will report all SAEs to the sponsor without undue delay after obtaining knowledge of the events.

The sponsor will report the SAEs through the web portal *ToetsingOnline* to the accredited Medical Ethical Committee that approved the protocol, within 7 days of first knowledge for SAEs that result in death or are life-threatening followed by a period of a maximum of 8 days to complete the initial preliminary report. All other SAEs will be reported within a period of maximum 15 days after the sponsor has first knowledge of the serious adverse events.

All AEs will be followed until they have abated, or until a stable situation has been reached. Depending on the event, follow-up may require additional tests or medical procedures as indicated, and/or referral to the general physician or a medical specialist.

### **Frequency and plans for auditing trial conduct**

The investigators as well as peer auditors trained in data management will randomly check the research file. Both are not independent of the sponsor. The investigators will check the research file on a daily basis and the peer auditors will monitor the file once a year. Twice a year, the trial will also be monitored by the independent physician of each of the four participating youth mental health centres.

### **Plans for communicating important protocol amendments to relevant parties (e.g. trial participants, ethical committees)**

Since a pilot with the treatment protocol has been done before data collection starts, we do not expect important protocol modifications during the period of data collection. If any substantial modifications are necessary they will be first proposed to the Medical Ethical Committee and only after approval is implemented. If according to the therapist immediate care is necessary in cases of concerns about the safety of the child and/or families modifications can be implemented directly.

### **Dissemination plans**

After data collection, the first results will be presented to experienced experts with a history of family violence to interpret the results of the trial. In a second expert meeting participants from the trial, professionals with a history of family violence and professionals in the field of family violence will be invited to discuss: (1) if and how FITT should be adjusted to special target groups like refugees, veterans, mentally retarded, different cultural backgrounds; (2) how FITT can be disseminated in the Netherlands and what is necessary for the implementation to achieve a nationwide network; and (3) how FITT can be processed in clinical guidelines in consultation with professional associations like the Dutch Society on Traumatic Stress.

A handbook for therapists about FITT will be published so the knowledge can be transferred, implemented, and executed in a sustainable way nationwide. The guide will provide information about the organization and structure of the program, and the questionnaires necessary to monitor FITT. We will develop a training for practitioners. Next, if proven effective, FITT is submitted to the Netherlands Youth Institute to assess the intervention for the database of effective interventions. Scientific articles about the research results will be submitted to national and international journals.

## Discussion

Family violence is a common problem (van Berkel et al., 2020; Van Eijkern et al., 2018) that not only has a strong adverse impact on children (Alink et al., 2012; Crusto et al., 2010; Fowler & Chanmugam, 2007), but it also has an indirect effect through the association of family violence with parenting and the parent-child relationship (Crusto et al., 2010; Levendosky & Graham-Bermann, 2000; Visser et al., 2016; Dutton et al., 2006; Renner, 2009). The influence of family violence on children, parents, and thereby on parenting and the parent-child relationship makes family violence a complex problem difficult to recover from (Ehring et al., 2014; Steketee et al., 2021). Family-based intensive trauma treatment (FITT) addresses the factors on an individual and family level in a short period of time. This randomized controlled multicenter study tests if FITT is an effective treatment for concurrent reduction of trauma symptoms, improvement of parenting functioning, and increasing emotional and physical security in children, through the improvement of parent-child relationships—in order to establish long-term effects on the reduction of trauma symptoms and continuation of security in the family. In this study, FITT will be compared with an intensive trauma treatment without a parent and systemic component (ITT) and with treatment as usual (TAU, low-frequency trauma treatment with parent therapy and family sessions). Comparing these interventions with and without specific components can help to understand if and how these interventions work and what is necessary to increase treatment effects.

In this study, different therapists across multiple treatment centres are involved. To increase the internal reliability of the study, all therapists receive training and supervision during data collection. Because of the intensive character of the two treatment conditions, it could be not all eligible families want to participate in the study. To understand the effects under different conditions and prevent selection bias, all participants are analyzed as participants of the treatment condition they are randomized to and they will be repeated as per-protocol analyses. To mitigate bias due to expectation or disappointment both families and therapists are blind to treatment allocation until randomization. Another risk is that focusing on anxiety-provoking details of the traumatic events could be experienced as too burdensome for the participants resulting in avoidance behavior and higher dropout rates. Previous research however showed that in intensive trauma-focused treatment programs the dropout rate is low (Van Woudenberg et al., 2018; Hendriks et al., 2017) or comparable to other treatment conditions (Opel et al., 2021) and trauma-focused treatments are most effective (Coventry et al., 2020).

This study will provide more insight into the added value of the parental and systemic component to an intensive trauma treatment and the added value of intensifying

treatment. Furthermore, it can contribute to the ongoing discussion in the field of trauma treatment about the necessity of preceding the trauma-focused treatment with a stabilization phase (De Jongh et al., 2016). The main goal of this study is that it can contribute to the ambition to stop, reduce, and limit the impact of family violence and create emotional and psychological safety for children in a sustainable way.



# 4

## **The effectiveness of family-based intensive trauma treatment for adolescents exposed to family violence**

Fictorie, V., Jonkman, C, Visser, M., Vandenbosch, M., van der Hell, S.G.,  
de Roos, C, Bicanic, I., Mooren, T., Steketee, M., & Schuengel, C. (2025).  
The effectiveness of family-based intensive trauma treatment for adolescents.  
Manuscript submitted for publication.

## Abstract

This randomized controlled trial tested the effectiveness of Family-based Intensive Trauma Treatment (FITT). This treatment addresses the psychological impact of family violence on an individual and family level in a high-intensive format. We compared FITT with a) an intensive trauma treatment without parents or family members participating (ITT) and b) treatment as usual (TAU), a non-intensive weekly trauma treatment with parents or family members participating. Adolescents ( $N = 35$ ) with posttraumatic stress (PTS) symptoms after family violence were randomly assigned to FITT, ITT, or TAU. Linear mixed models showed no conclusive evidence for the superiority of FITT, compared to ITT, regarding PTS symptoms, emotional security, knowledge of trauma-informed parenting, and secondary outcomes. Repeated measures ANOVA showed that FITT resulted in faster PTS symptom reduction than TAU, four weeks after the start of treatment ( $p < .001$ ,  $\eta^2 = .24$ ). 71% of FITT participants, that were diagnosed with PTSD at pretreatment, lost their diagnosis at follow-up. Superiority of FITT over TAU was not found for emotional insecurity and secondary outcome measures. This study shows preliminary indications that FITT is a tolerable treatment for families exposed to family violence.

## Introduction

Family violence, in the form of interparental violence and child maltreatment, impacts the lives of many children and adolescents. Approximately one in six people has experienced physical family violence in childhood, either as a victim or a witness (Whitten et al., 2024). Child abuse and interparental violence often co-occur (Wolbers et al., 2023). Family violence undermines the confidence that youth may have in their parents' ability to cope with conflicts and may lead to emotional and behavioral problems through their efforts to regain emotional security (Cummings & Davies, 2010). A quarter of youth exposed to interpersonal trauma, such as family violence, are diagnosed with posttraumatic stress (PTS) disorder (Alisic et al., 2014). In addition to the direct impact of family violence on youth, family violence also impacts them indirectly, by effecting parents and the parent-child relationship (Cummings & Miller-Graff, 2015). Recent exposure to family violence is positively related to depressive symptoms (Bacchus et al., 2018) and PTS symptoms (Ferrari et al., 2016). Family violence is also associated with negative parenting, like expressing anger (M. Lee et al., 2024), and with adolescents' negative feelings about their relationship with their parents (Sousa et al., 2011). Given these consequences for youth, parents and family relationships, interventions may need to address the impact of family violence at both the adolescent and family level to have durable effects. This study tested the effectiveness of a family-based intensive trauma treatment for youth exposed to family violence.

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### Trauma-focused treatment

For youth who develop PTS symptoms, trauma-focused therapy is the first treatment of choice (AACAP, 2010; National Institute for Health and Care Excellence, 2018 ISTSS, 2019). Trauma treatments such as Eye Movement Desensitization and Reprocessing (EMDR) and trauma-focused cognitive behavior therapy (TF-CBT) have been shown effective in reducing symptoms of PTSD (Hoogsteder et al., 2022). A review on the effectiveness of TF-CBT for youth exposed to family violence (Cox et al., 2025) showed small to large effect sizes. However, the number of randomized controlled trials (RCTs) was small ( $k = 4$ ) and treatment dropout rates, ranging from 27% to 40%, were higher than found in studies on trauma treatment for children in general (e.g., 11%; Simmons et al., 2021). Therefore, it is important to study effectiveness of interventions further, especially those that address the retention of youth in treatment.

### Intensive trauma treatment

One way to minimize dropout rates and improve treatment outcomes is to intensify trauma-focused treatments. Intensive trauma treatments are brief interventions offered by multiple therapists (therapist rotation; (Van Minnen et al., 2018), with several treatment days per week including one or more evidence-based trauma therapies, such as EMDR. A

recent meta-analysis concluded that acceptability, in terms of completing the intervention, was better for intensive trauma treatments (Hoppen et al., 2023). However, no differences in efficacy were found between intensive and non-intensive treatment. Studies on intensive trauma treatment for youth also showed low treatment dropout rates. Even more, these studies reported large effect sizes for the reduction of trauma symptoms (Rentinck et al., 2025; van Ee et al., 2024). However, because no active control conditions were included in these studies, the added value of intensifying treatment remains unclear. Adolescence is a critical period for social development and societal participation (Brown et al., 2008), which both can be hindered by PTS symptoms (Fowler & Chanmugam, 2007). Therefore, it is crucial to understand whether intensifying therapy can result in faster symptom reduction and optimize patient treatment adherence. According to adult patients, intensive treatment helps to reduce avoidance and therapist rotation increases patient adherence to the therapy plan (Thoresen et al., 2022). Therapists also experienced greater treatment adherence, and patients were positive about the therapeutic relationship (Van Minnen et al., 2018).

### **Parental and systemic components**

Because of the impact of family violence on parents and family relationships, the addition of specific parental and systemic components could also enhance treatment success. A meta-analysis reported that the effect sizes in psychological treatments for youth with PTS symptoms were larger when caregivers were included (Gutermann et al., 2016). Furthermore, parenting interventions that aim to reduce child abuse were shown to be effective, although the effect size decreased over time (Backhaus et al., 2023). In contrast, a recent individual participant data meta-analysis on cognitive behavioral trauma-focused treatment showed no enhanced treatment success for caregiver participation (de Haan et al., 2024). It should be noted that this meta-analysis was not specifically focused on family violence, did not include parental outcome measures, and that information on the degree of parental involvement was lacking. Reviews of parenting interventions in the specific context of family violence showed that parenting interventions had a positive impact on reducing parental stress (Rizo et al., 2011) and improving positive parenting (Lindstrom Johnson et al., 2018). However, few studies had controlled designs, and studies varied in terms of the nature of the intervention and outcome measures.

## Present study

To better understand the added value of intensifying trauma treatment and parental and systemic components, this RCT compares family-based intensive trauma treatment (FITT) with a) an intensive trauma treatment without parents or family members participating (ITT), and with b) a non-intensive weekly trauma treatment as usual with participating parents and family members (TAU). This translates into the following hypotheses:

- 1a). FITT would lead to a stronger reduction in PTS symptoms and experienced. Emotional insecurity (primary outcomes), and a greater improvement in the parent child relationship, and adolescent- and parent functioning, than ITT.
- 1b). FITT would lead to a stronger increase in parents' self-evaluated level of knowledge on trauma-informed parenting than ITT.
- 2a). FITT would lead to a faster reduction in PTS symptoms and experienced emotional insecurity, and a faster improvement in the parent-child relationship, and adolescent- and parent functioning, than TAU.
- 2b). FITT would lead to an equal reduction in PTS symptoms and experienced emotional insecurity and an equal improvement in the parent-child relationship, and adolescent- and parent functioning at end of treatment, than TAU.

## Method

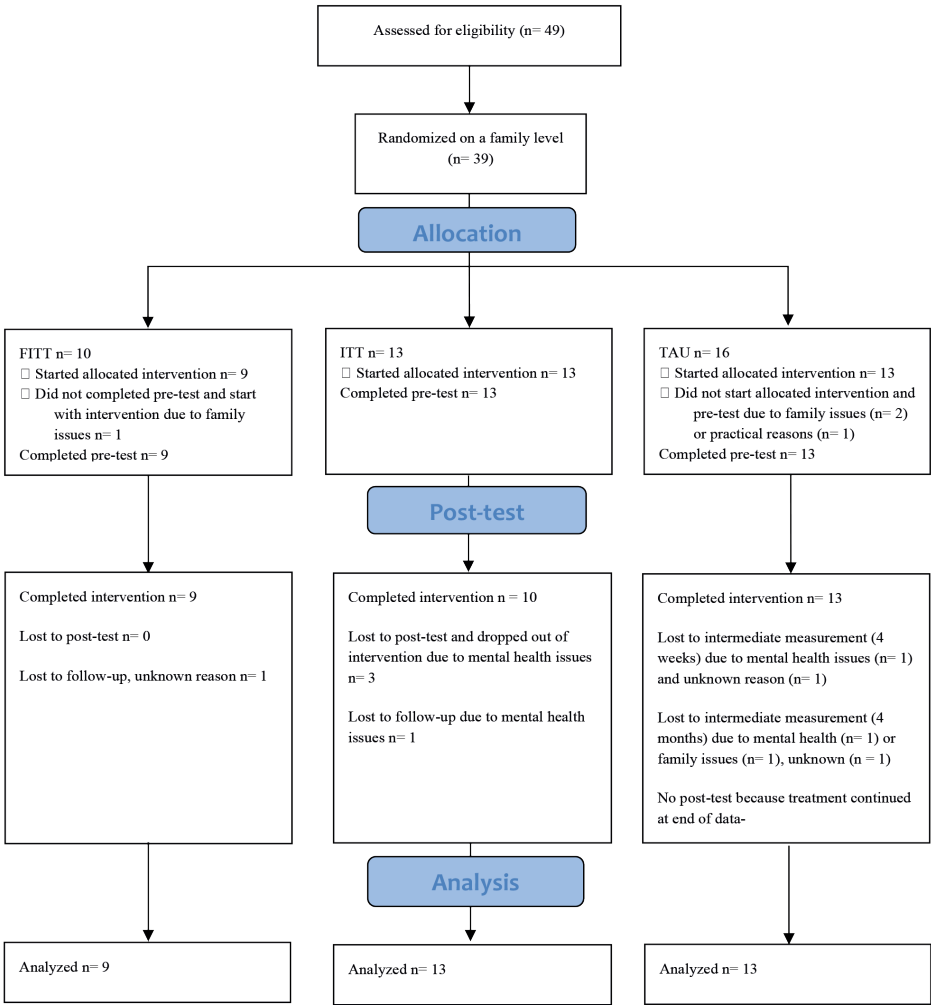
### Participants

Youth were eligible to participate if (a) they had been exposed to family violence; (b) immediate threat was ended; (c) aged between 12 and 20 years old; (d) living at home with caregivers; (e) caregivers were able to participate in the systemic components; (f) if youth had PTS symptoms, at least intrusions and avoidance, based on the intake, and, if (g) the family was fluent in the Dutch language. Youth could not participate if they attempted suicide in the last three months or if youth or their caregivers had acute psychotic symptoms, severe alcohol and/or drugs addictions. During an intake procedure, families were screened on these criteria. Data were collected from March 2021 to June 2023. Based on power analysis, recruitment of 96 families was planned. Due to a decrease in the number of eligible families, 39 adolescents were recruited. The study flow chart is presented in Figure 1, and the baseline characteristics in Table 1.

Figure 1 Study flow chart



CONSORT 2010 Flow Diagram



**Table 1** Baseline Characteristics

|                                                                          | <b>FITT</b>  | <b>ITT</b>   | <b>TAU</b>   | <b>Total</b> |
|--------------------------------------------------------------------------|--------------|--------------|--------------|--------------|
| <b>Adolescent characteristics*</b>                                       |              |              |              |              |
| Gender adolescent (%)                                                    |              |              |              |              |
| <i>Female</i>                                                            | 67           | 85           | 92           | 83%          |
| <i>Male</i>                                                              | 11           | 15           | 0            | 9%           |
| <i>Other</i>                                                             | 22           | 0            | 8            | 9%           |
| Age adolescent, years ( <i>M, SD</i> )                                   | 15.22 (1.99) | 16.62 (1.81) | 16.62 (2.41) | 16.26 (2.02) |
| PTSD diagnosis at pretreatment (%)                                       | 78           | 85           | 77           | 80%          |
| <b>Family characteristics in %*</b>                                      |              |              |              |              |
| One-parent family                                                        | 57           | 31           | 36           | 38           |
| Income €0-15.000 <sup>1</sup>                                            | 14           | 8            | 7            | 9            |
| Education, middle to high                                                | 71           | 67           | 79           | 73           |
| ACE parent (4 or more) <sup>2</sup>                                      | 57           | 46           | 21           | 38           |
| Adolescents reporting family violence in the last 12 months <sup>3</sup> | 67           | 92           | 92           | 85           |

Note. \* No statistical differences were found between conditions ( $p > .05$ ), <sup>1</sup>income level that corresponds with the poverty threshold in the Netherlands, <sup>2</sup>based on the ACE Questionnaire (Felitti et al., 1998), <sup>3</sup>based on Conflict Tactics Scale parent child (Straus et al., 1998)

## Procedure

### Design

This randomized controlled component trial compared a) a four-week family-based intensive trauma treatment for youth exposed to family violence with b) a three-week intensive trauma treatment without parental and family components, and with c) 6-18 months non-intensive family-based trauma treatment as usual (TAU). The RCT tested superiority of FITT over ITT from pretreatment to follow-up and of FITT over TAU from pretreatment to four weeks after start of treatment and testing for noninferiority between FITT and TAU at end of treatment. The allocation rate for these comparisons was 1: 1: 1. Youth were recruited in four outpatient treatment centres in the Netherlands: Children's Trauma Center Kenter Youthcare, GGZ Rivierduinen, National Psychotrauma Center for Children and Adolescents UMC and Arq National Psychotrauma Center. The study was approved by the Medical Ethical Committee of Amsterdam UMC on 17 February 2021 (reference no: 2020.505). The protocol was published in 2022 (Fictorie et al., 2022).

### Study procedure

Families, referred to the participating treatment centers because adolescents experienced PTS symptoms after exposure to family violence, were informed by their therapist about the study with a brochure. After families gave permission to share contact information, researchers contacted them by phone and sent them an information letter. If families

agreed to participate and met all criteria, the informed consent form was signed by parents and adolescents and families were randomly assigned to one of three conditions. This was done by an independent researcher using a computerized randomization procedure with lottery drawings. To minimize bias, assessors, families and therapists were blind to treatment allocation until randomization. After randomization they were not blind to treatment allocation. Assessors were part of the research team. The inclusion rate was lower than expected. A problem analysis identified several factors. First, family violence and PTS were often not recognized by professionals, referrers feared that intensive treatment would worsen symptoms, and youth preferred intensive treatment in cases of past experiences with weekly therapy not being effective for them. Practical barriers, for example, arranging work around intensive treatment, also played a role.

### ***Interventions***

FITT is a four-week and ITT a three-week individually delivered intensive program. In FITT, parents and the family network participate in the treatment. In ITT only the adolescent participates. TAU is a non-intensive, weekly treatment program with systemic and trauma-focused components. An overview of interventions can be found in Table 2 and an extensive description in the published study protocol (Fictorie et al., 2022). The protocols for FITT and ITT applied therapist rotation (Van Minnen et al., 2018). To increase therapist adherence, therapists were trained in the protocol and received supervision every six to eight weeks. To monitor treatment fidelity, therapists indicated on a checklist whether they adhered to the steps of the treatment protocol. Except for the third and fifth authors, all authors operated as researchers and did not therapeutically interact with the included families.

**Table 2** Overview of Interventions

| Phase                                   | Days<br>p/w | Target |            | Session                                                | Aim                                                                                                                                               |
|-----------------------------------------|-------------|--------|------------|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| (F)ITT                                  |             | FITT   | ITT        |                                                        |                                                                                                                                                   |
| Preparation<br><i>1 week</i>            | 2           | Family | Adolescent | Psycho-<br>education                                   | Increasing knowledge about family violence, PTS, trauma sensitive parenting and (F)ITT                                                            |
|                                         |             |        | Adolescent | Clustering                                             | Ordering traumatic memories                                                                                                                       |
| Trauma-<br>processing<br><i>2 weeks</i> | 3           |        | Adolescent | Imaginal<br>Exposure<br>Psychomotor<br>therapy<br>EMDR | Decreasing PTS and comorbid symptoms                                                                                                              |
|                                         |             | Parent | -          | Parent<br>training                                     | Lowering parental stress, recognizing adolescent and parent PTS, increasing support and trauma sensitive parenting, constructing family narrative |
|                                         |             | Family | -          | Short<br>interaction                                   | Sharing and trauma-sensitive parenting                                                                                                            |
| Integration<br><i>1 week</i>            | 3           | Family | -          | Family<br>sessions                                     | Sharing and constructing the trauma narrative, recognizing destructive communication patterns and vulnerability cycle, increasing family safety   |
| <b>TAU</b>                              |             |        |            |                                                        |                                                                                                                                                   |
| Preparation                             | 1           | Family |            | Psycho-<br>education                                   | Increasing knowledge on family violence, PTS, trauma sensitive parenting                                                                          |
|                                         |             |        | Adolescent | Regulation<br>and coping                               | Strengthening regulation and coping skills                                                                                                        |
| Trauma-<br>processing                   | 1           |        | Adolescent | Trauma<br>therapy                                      | Decreasing PTS and comorbid symptoms (individual or group-based TF-CBT, EMDR Imaginal Exposure)                                                   |
|                                         |             | Parent |            | Parent<br>training                                     | Trauma sensitive parenting, constructing family narrative                                                                                         |
| Integration                             | 1           | Family |            | Family<br>sessions                                     | Sharing and constructing the trauma narrative, (on indication) restoring family relationships and safety                                          |

## Measures

All reported Cronbach's alphas are those obtained in the present study.

### *Posttraumatic stress symptoms*

The Clinician-Administered-PTSD-Scale-Children-And-Adolescents (CAPS-CA; Pynoos et al., 2015) is a standardized clinical interview for children between 8-18 years to assess PTSD according to DSM-5 standards (Dutch version, Meijel et al., 2019). The 5-point severity rating scale ranged from 0 (absent) to 4 (extreme/incapacitating). Total severity score (Cronbach's  $\alpha = .68$ ) and diagnosis status of PTSD were used. In a previous study (Diehle et al., 2013), CAPS-CA demonstrated divergent, convergent and discriminant validity.

The Dutch version (Olff, 2005) of the Children's Revised Impact of Event Scale (Horowitz et al., 1979) is a 13-item questionnaire with a 4-point scale assessing traumatic impact across different types of trauma and life-threatening events. It demonstrated good test-retest reliability and internal consistency (Verlinden et al., 2015). The sum score (child report: Cronbach's  $\alpha = .79$ , parent report: Cronbach's  $\alpha = .89$ ) was used as an indicator of PTS (ranging from 0 to 65 with 30 as cutoff score).

The Trauma Symptom Checklist for Children (Briere, 1996) assesses self-reported PTS symptoms in children (10-18 years of age). We used one of the six clinical scales, the scale for post-traumatic stress disorder. It contains 10 items (Cronbach's  $\alpha = .84$ ) with a 4-point scale, ranging from 0 (absent) to 3 (very often). Concurrent and criterion-related validity were demonstrated to be adequate (Nilsson et al., 2008).

### *Emotional security*

The Dutch translation of the Security in the Interparental Subsystem Scale (Davies et al., 2002) measured the child's reactivity to parental conflicts. It consists of 43 items with a 4-point ordinal scale. Previous research supported the validity of the SIS (Davies et al., 2002). The total scale was used (Cronbach's  $\alpha = .96$ ).

To assess a secure pattern of emotional security from the adolescent's perspective, we used the subscale 'Secure' of the Security in the Family System scale (Forman & Davies, 2005). It has 7 items with a 4-point scale (Cronbach's  $\alpha = .89$ ). Psychometric properties of this security subscale are good (Forman & Davies, 2005).

For parents, we used the Dutch translation of the Security in the Marital Subsystem Scale (SIMS; Davies et al., 2002), containing 28 items with a 5-point scale. It includes emotional reactivity, behavioral involvement, and avoidance after witnessing arguments between their parents. We used the total score (Cronbach's  $\alpha = .96$ ). The SIMS demonstrated discriminant, convergent, and predictive validity (Davies et al., 2002).

### ***Knowledge on trauma-informed parenting***

Parents' perspectives on their self-evaluated level of knowledge on trauma-informed parenting, was assessed with a questionnaire developed for the training 'Caring for Traumatized Children' (Coppens & Van Kregten, 2018). It has six items (Cronbach's  $\alpha = .91$ ) reflecting the six primary training goals, rated on a 10-point scale, ranging from 1 (not accomplished) to 10 (totally accomplished). The validity of the instrument has not been established.

### ***Parent-child relationship and interaction***

The Security Scale (Kerns, 1996) is a 15-item questionnaire for children and parents on the responsiveness and availability of the parent in the parent-child relationship. The total score (parent report Cronbach's  $\alpha = .82$ , child report Cronbach's  $\alpha = .90$ ) was used. Parent-child interaction was assessed with the Family Interaction Task (FIT; Weinfeld et al., 2002). This observational instrument includes four tasks, previously adapted for adolescents, in which parent and adolescent are instructed to complete a series of interactive tasks together that elicit variations in autonomy-promoting behaviors and affect. Tasks were recorded and independently coded on nine scales by two researchers on a 5-point scale. Comparable to a previous study (Scholten et al., 2015), interrater reliability for the different scales ( $n = 19$ , ICC range .42-90) was calculated. The average score of the nine separate scales was used.

### ***Adolescent functioning***

To assess symptoms of depression, the total score (Cronbach's  $\alpha = .89$ ) of the 28-item Children's Depression Inventory 2 (CDI2; Kovacs, 1982) was used. For parent report on adolescent functioning the total score (Cronbach's  $\alpha = .89$ ) of the 20-item Child Dissociation Checklist (CDC; Putnam et al., 1993), and the total scale (Cronbach's  $\alpha = .67$ ) of the 25-item Strengths and Difficulties Questionnaire (SDQ; (Van Widenfelt et al., 2003) were used.

### ***Parenting functioning***

PTS symptoms in parents were assessed with the Dutch version ('Schokverwerkingslijst, Van Der Ploeg et al., 2004) of the 22-item Impact of Events Scale Revised (IES-R; Weiss, 2007). The total score (Cronbach's  $\alpha = .97$ ) was used. The total score (Cronbach's  $\alpha = .92$ ) of the 29 item version of the Young Adult Self-Report (Achenbach, 1997) assessed psychopathological symptoms in parents. Parental stress was assessed with the total score (Cronbach's  $\alpha = .92$ ) of the 25-item Nijmegen Ouderlijke Stress Index - short version (NOSI-K; Brock et al., 1992) a short version of the Parenting Stress Index (Abidin, 1997). Parental availability was assessed with the total score (Cronbach's  $\alpha = .59$ ) of the eight adapted items of the Daily Psychological Availability Scale (Danner-Vlaardingerbroek et al., 2013).

Table 3 shows an overview of data assessment.

Table 3 Overview of assessments

| Respondent <sup>a</sup>       |    | Type <sup>b</sup> | Pre-treatment | Post-treatment (F)ITT | Follow-up (F)ITT or Intermediate TAU | 6-18 months |
|-------------------------------|----|-------------------|---------------|-----------------------|--------------------------------------|-------------|
| Time after start of treatment |    |                   | - 1 week      | 4 weeks               | 4 months                             |             |
| Trauma symptoms               |    |                   |               |                       |                                      |             |
| CAPS-CA                       | A  | I                 | *             |                       | *                                    | *           |
| TSCC                          | A  | Q                 | *             | *                     | *                                    | *           |
| CRIES                         | AP | Q                 | *             | *                     | *                                    | *           |
| Emotional security            |    |                   |               |                       |                                      |             |
| SIFS                          | A  | Q                 | *             | *                     | *                                    | *           |
| SIMS                          | P  | Q                 | *             | *                     | *                                    | *           |
| SIS                           | A  | Q                 | *             | *                     | *                                    | *           |
| Parent-child                  |    |                   |               |                       |                                      |             |
| SS                            | AP | Q                 | *             | *                     | *                                    | *           |
| FIT                           | AP | Q                 |               | *                     |                                      |             |
| Trauma sensitive knowledge    |    |                   |               |                       |                                      |             |
|                               | P  | Q                 | *             | *                     | *                                    | *           |
| Adolescent functioning        |    |                   |               |                       |                                      |             |
| CDI2                          | A  | Q                 | *             | *                     | *                                    | *           |
| CDC                           | P  | Q                 | *             | *                     | *                                    | *           |
| SDQ                           | P  | Q                 | *             | *                     | *                                    | *           |
| Parent functioning            |    |                   |               |                       |                                      |             |
| IES-R                         | P  | Q                 | *             | *                     | *                                    | *           |
| YASR                          | P  | Q                 | *             | *                     | *                                    | *           |
| NOSI-K                        | P  | Q                 | *             | *                     | *                                    | *           |
| DPAS                          | P  | Q                 | *             | *                     | *                                    | *           |

Note. <sup>a</sup> = Respondent (A = adolescent, P = parent), <sup>b</sup> = Type of measurement (I= Interview, Q = Questionnaire, O = Observation)

## Data analysis

All analyses were performed in version 29 of the Statistical Package for the Social Sciences (SPSS). Linear mixed models (LMM) were used to test the interaction between condition as group factor and time for our primary and secondary outcome measures, which were measured on three timepoints: baseline, four weeks (intermediate measurement for TAU, end of treatment for FITT and ITT) and four months after start of treatment (intermediate measurement for TAU, follow-up for FITT and ITT). For the outcomes measured with two timepoints, baseline and four weeks after start of treatment, repeated measures ANOVA was used with condition as between-subjects factor. To handle missing data, we used maximum likelihood estimation in the LMM analyses and multiple imputation in the repeated measures ANOVA. To generate pooled statistics, the SPSS mixed model procedure with effect coding was used (van Ginkel & Kroonenberg, 2014). Generalized Equation Estimation (GEE) was used for categorical outcome measures and independent samples T-test for continuous measures with only one time point. Depending on the amount, randomness, and type of missing data, we explored possibilities to deal with missing data in our GEE analyses. Alpha was set at .05 (two-tailed); for the primary outcomes in hypotheses 1a, 2a, and 2b, we used Holms-Bonferroni method to correct for multiple testing. All analyses were performed as intention to treat analyses. To test differences in dropout, we used a Chi-square test.

## Results

There were no treatment dropouts in the FITT (0%) and TAU (0%) conditions, while three participants dropped out of treatment in the ITT condition (23%), citing an increase in mental health issues. Although no dropouts from treatment were found for the TAU condition, two cases in the TAU condition dropped out of the study, but continued their treatment between the pre- and post-test. Also, from post-test to follow-up three cases in the TAU condition dropped out of the study. This was mainly related to family and mental health issues. Study dropout rates did not differ between FITT and ITT but differed significantly between FITT and TAU ( $\chi^2(1) = 4.48, p = .03$ ). Little's MCAR tests indicate that missing cases were completely missing at random ( $\chi^2(141) = 140.17, p = .50$ ). Sensitivity power analysis, conducted with G\*Power (Faul et al., 2007), for the comparison between FITT and ITT across three timepoints (hypothesis 1a and 1b, LMM), showed that, based on our sample size ( $n = 22$ ), an alpha of .05 and a power of .80, the minimal effect size needed to be  $R^2 = .45$ . For the comparison between FITT and ITT on two timepoints (CAPS CA) and between FITT and TAU on two timepoints (hypothesis 2a and 2b), the minimal effect size needed to be partial  $\eta^2 = .14$ , based on our sample size ( $n = 22$ ), an alpha of .05 and a power of .80.

### **FITT versus ITT: the added value of parental and systemic components**

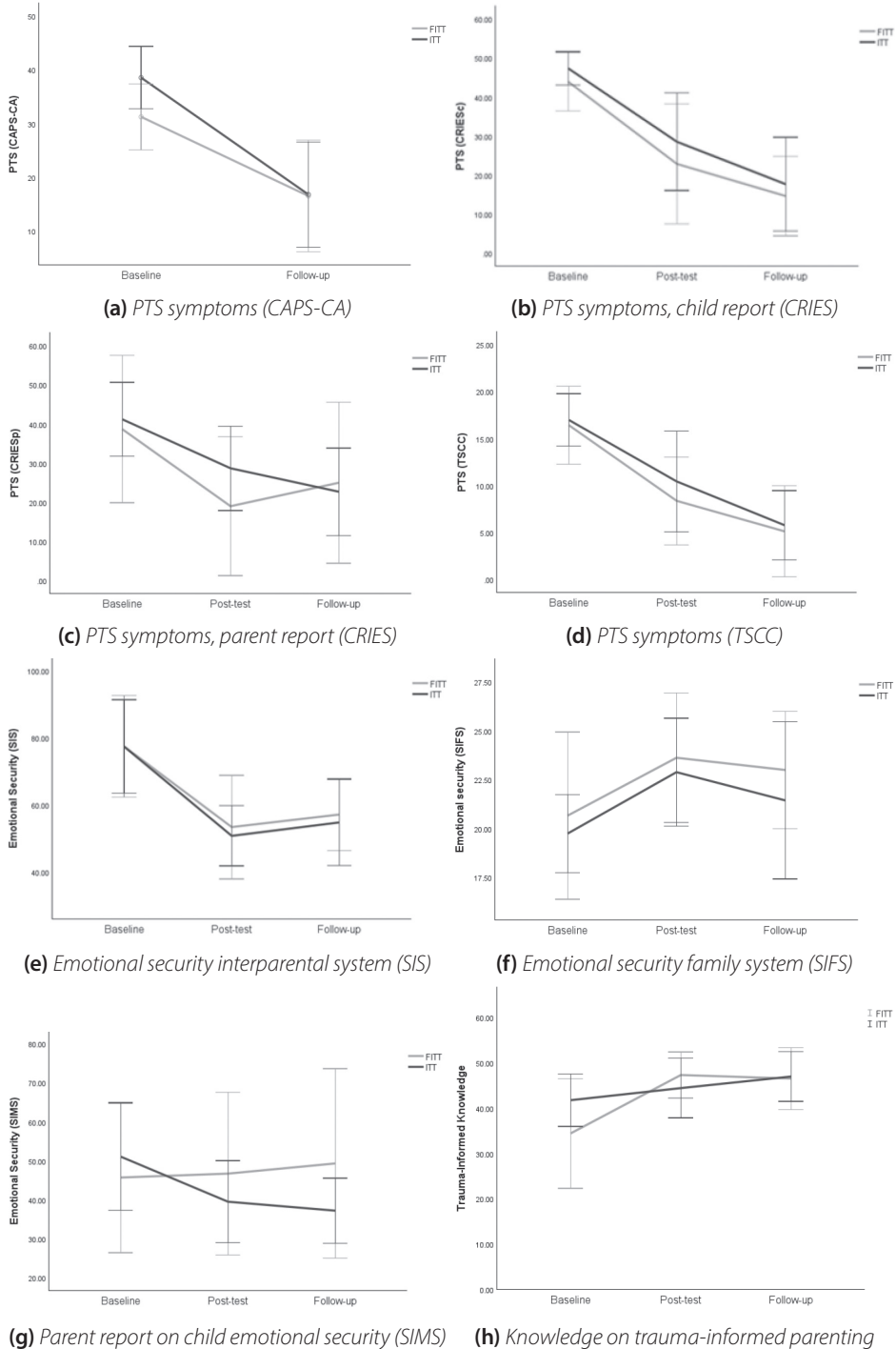
Changes in primary outcomes are presented in Table 4 and Figure 2. The GEE on PTSD diagnosis in conditions FITT and ITT showed a significant loss in diagnosis of PTSD from pretreatment to follow-up in both groups ( $W(1) = 15.56, p < .001$ ), with no difference between groups. Of the participants who were diagnosed with PTSD at pretreatment, 71% of FITT participants and 73% of ITT participants lost their diagnosis of PTSD at follow-up. The repeated measures ANOVA comparing CAPS-CA severity scores from pretreatment to follow-up showed that PTS symptoms decreased over time ( $F_{1,14.58} = 18.45, p < .001$ , partial  $\eta^2 = .53$ ). There was no statistical difference in effect between groups. The LMM, with conditions FITT and ITT included as group factor, showed that PTS symptoms decreased over time from pre-treatment to posttreatment and to follow-up (TSCC:  $F_{2,55} = 23.02, p < .001, R^2 = .46$ ; CRIES child version:  $F_{2,55} = 27.08, p < .001, R^2 = .50$ ; CRIES parent version:  $F_{2,53} = 5.76, p < .01, R^2 = .19$ ). After Holm-Bonferroni correction, results were still significant. No interaction effect of time by group was statistically significant, meaning that FITT did not show stronger reduction in PTS symptoms than ITT. The LMM that included condition (FITT, ITT) as a group factor and emotional security (SIFS) as dependent variable did not show time nor time by group effects. The LMM that included emotional security in the interparental subsystem (SIS) as dependent variable showed that adolescents felt more emotionally secure over time ( $F_{2,55} = 12.80, p < .001, R^2 = .32$ ), while the LMM including parent-report on adolescents' emotional security did not show changes over time. No differences were found between groups. Regarding changes in parents' self-evaluated level of knowledge on trauma-informed parenting, the LMM showed an increase in parents' perspectives on their self-evaluated level of knowledge on trauma-informed parenting ( $F_{2,53} = 8.85, p < .001, R^2 = .23$ ). There were no differences between parents in the ITT and FITT condition (hypothesis 1b). For our secondary outcome measures, we did not find time by group effects. Results for secondary outcome measures can be found in Supplementary Figure 1 and 3.

**Table 4** Primary outcomes FITT & ITT

| <b>Pretreatment to follow-up (four months after start of treatment)</b> |             |                 |           |                         |          |           |
|-------------------------------------------------------------------------|-------------|-----------------|-----------|-------------------------|----------|-----------|
|                                                                         | <b>Time</b> |                 |           | <b>Time x Condition</b> |          |           |
|                                                                         | <b>F</b>    | <b>p</b>        | <b>ES</b> | <b>F</b>                | <b>p</b> | <b>ES</b> |
| <b>Trauma symptoms</b>                                                  |             |                 |           |                         |          |           |
| CAPS-CA <sup>1</sup>                                                    | 18.45       | <.001           | .53*      | .26                     | .62      | .02       |
| CRIS <sup>a</sup>                                                       | 27.08       | <b>&lt;.001</b> | .50       | .06                     | .95      | .03       |
| CRIS <sup>p</sup>                                                       | 5.76        | <b>&lt;.01</b>  | .19       | .56                     | .58      | .03       |
| TSCC                                                                    | 23.02       | <b>&lt;.001</b> | .46       | .12                     | .89      | .01       |
| <b>Emotional security</b>                                               |             |                 |           |                         |          |           |
| SIS <sup>c</sup>                                                        | 12.80       | <b>&lt;.001</b> | .32       | .03                     | .97      | .00       |
| SIFS <sup>p</sup>                                                       | 2.86        | .07             | .10       | .05                     | .95      | .02       |
| SIMS <sup>c</sup>                                                       | .48         | .62             | .03       | 1.06                    | .36      | .05       |
| <b>Trauma-informed knowledge</b>                                        | 8.85        | <.001           | .23       | .81                     | .45      | .03       |

Note. <sup>a</sup>= adolescent report, <sup>p</sup>= parent report, ES = effect size in  $R^2$  (effect size based on amount of variance explained in the outcome variance), <sup>1</sup>= pooled results and partial eta square effect size, \* = significant, bold = significant after Holms-Bonferroni correction. This correction was performed for PTS symptoms (CRIS, TSCC), and emotional security (SIS, SIFS, SIMS).

**Figure 2** Changes in primary outcomes FITT & ITT



### FITT versus TAU: the added value of intensifying treatment

Changes in primary outcomes are presented in Table 5 and Figure 3. The repeated measures ANOVA with condition (FITT, TAU) as group factor and PTS symptoms at pretreatment and four weeks after treatment showed that reductions in PTS symptoms were greater for participants in FITT, as shown by statistically significant condition by time effects (CRIES child version:  $F_{1,16.60} = 16.54, p < .001, \eta^2 = .24$ , CRIES parent versions:  $F_{1,17.24} = 11.25, p < .01, \eta^2 = .07$ ; TSCC:  $F_{1,17.12} = 5.64, p < .05, \eta^2 = .07$ ), also after Holms-Bonferroni correction. Repeated measures ANOVA with adolescent-reported emotional insecurity as dependent variable showed an effect of time from pretreatment to four weeks after start of treatment (SIS:  $F_{1,18.17} = 12.11, p < .01, \eta^2 = .20$ ). After Holms-Bonferroni correction, no effect of time was found for emotional security in the family system (SIFS:  $F_{1,17.66} = 5.69, p < .05, \eta^2 = .13$ ) and for parent-report on adolescents' emotional security (SIMS). No differences were found between the FITT and TAU condition. For our secondary outcome measures, we only found time by group effect for parental emotional availability ( $F_{1,18.15} = 6.03, p < .05, \eta^2 = .04$ ), in favor of TAU.

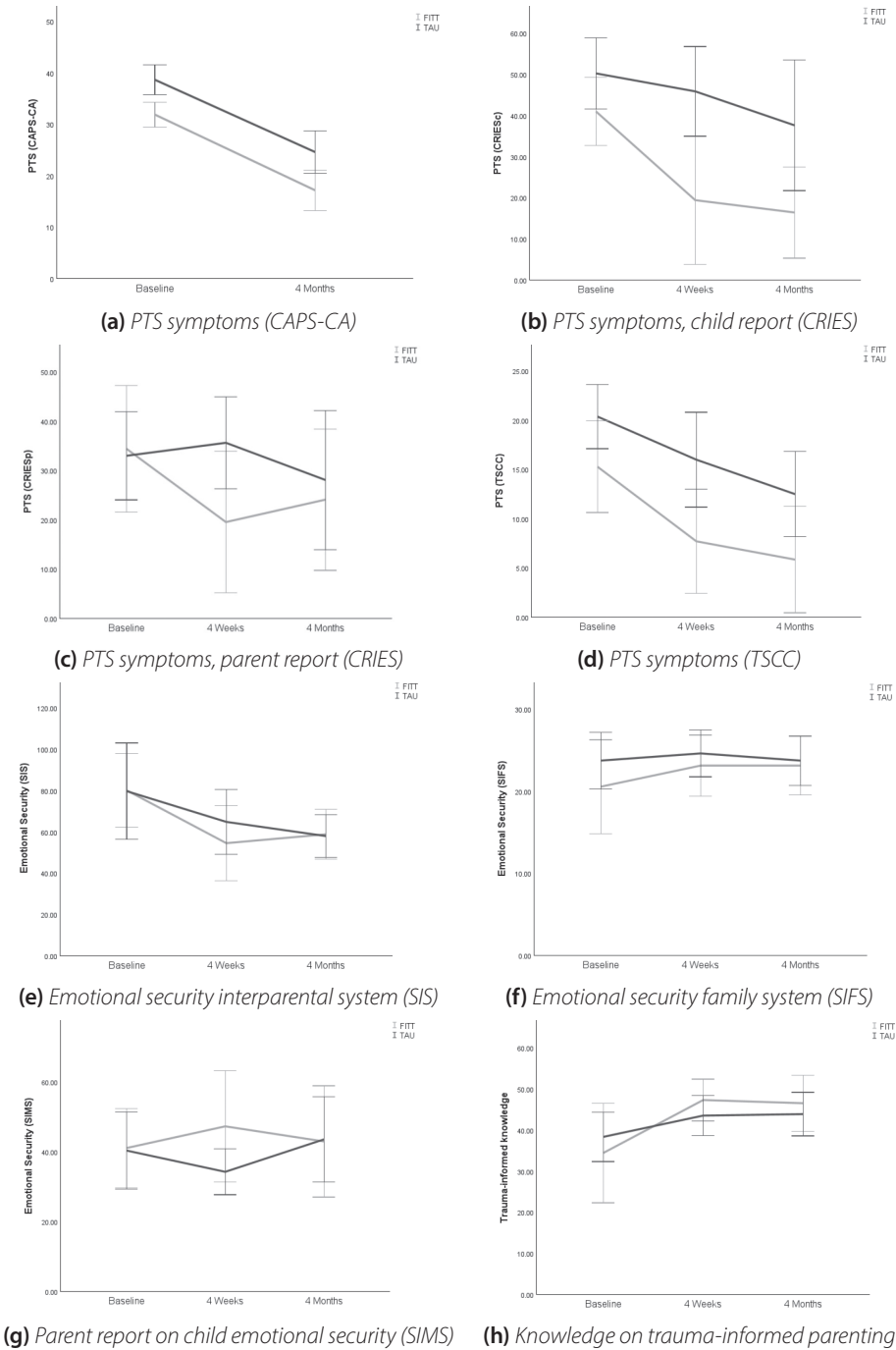
For hypothesis 2b, our initial plan was to compare pretreatment with posttreatment, but only 23% in the TAU condition completed the posttreatment measurement. Instead, we tested whether randomization to FITT led to a stronger reduction in PTS symptoms and emotional insecurity, compared to randomization to TAU, at four months after start of treatment. The GEE revealed a significant loss in PTSD diagnosis from pretreatment to four months after the start of treatment ( $W(1) = 9.08, p < .01$ ), with no differences between groups. Of the participants who were diagnosed with PTSD at pretreatment, 71% of FITT participants and 31% of TAU participants lost their PTSD diagnosis four months after starting treatment. The result of the repeated measures ANOVA comparing CAPS-CA severity scores from pretreatment to four months after start of treatment showed that PTS symptoms decreased over time ( $F_{1,15} = 20.02, p < .001, \eta^2 = .53$ ). FITT and TAU performed equally. Repeated measures ANOVA with condition as group factor and PTS symptoms at four months after the start of treatment as dependent factor showed a significant change in trauma symptoms (TSCC:  $F_{1,16.58} = 39.23, p < .001, \eta^2 = .04$ ; CRIES child version:  $F_{1,18.03} = 38.90, p < .001, \eta^2 = .04$ ; CRIES parent version:  $F_{1,17.25} = 6.00, p < .05, \eta^2 = .02$ ), also after Holms-Bonferroni correction, but there were no differences between groups. There was also a significant effect of time from pretreatment to four months after start of treatment ( $F_{1,18.15} = 20.47, p < .001, \eta^2 = .04$ ) for emotional security in the interparental subsystem (SIS). No differences were found between FITT and TAU. We did not find time or time by group effects for emotional security in the family system (SIFS) and parent reports on adolescents' emotional security (SIMS). For our secondary outcome measures, we did not find time by group effects. Supplementary Figure 2 and 3 show the results for secondary outcome measures. .

Table 5 Primary outcomes FITT & TAU

|                    | Four weeks after start of treatment |       |                  |       |       | Four months after start of treatment |       |                  |     |      |
|--------------------|-------------------------------------|-------|------------------|-------|-------|--------------------------------------|-------|------------------|-----|------|
|                    | Time                                |       | Time x Condition |       |       | Time                                 |       | Time x Condition |     |      |
|                    | F                                   | p     | ES               | F     | p     | ES                                   | F     | p                | ES  | ES   |
| Trauma symptoms    |                                     |       |                  |       |       |                                      |       |                  |     |      |
| CAPS-CA            | -                                   | -     | -                | -     | -     | -                                    | 20.02 | <.001            | .53 | .95  |
| CRIES <sup>a</sup> | 18.96                               | <.001 | .20              | 16.54 | <.001 | .24                                  | 38.90 | <.001            | .04 | <.05 |
| CRIES <sup>p</sup> | 8.58                                | <.01  | .10              | 11.25 | <.01  | .07                                  | 6.00  | <.05             | .02 | .76  |
| TSCC               | 14.86                               | <.01  | .29              | 5.64  | <.05  | .07                                  | 39.23 | <.001            | .04 | .17  |
| Emotional security |                                     |       |                  |       |       |                                      |       |                  |     |      |
| SIS <sup>c</sup>   | 12.11                               | <.01  | .20              | .27   | .61   | .02                                  | 20.47 | <.001            | .04 | .60  |
| SIFS <sup>p</sup>  | 5.69                                | <.05  | .13              | 1.25  | .28   | .05                                  | .62   | .44              | .09 | .20  |
| SIMS <sup>c</sup>  | .15                                 | .71   | .03              | .33   | .57   | .03                                  | .09   | .77              | .03 | .93  |

Note. Pooled results repeated measures ANOVA, <sup>a</sup>= adolescent report, <sup>p</sup>= parent report, ES = effect size in partial eta square, bold = significant after Holms-Bonferroni correction. This correction was performed for PTS symptoms (CRIES, TSCC), and emotional security (SIS, SIFS, SIMS).

**Figure 3** Changes in primary outcomes FITT & TAU



## Discussion

This study tested the effectiveness of family-based intensive trauma treatment for adolescents exposed to family violence. In contrast to the study hypothesis, we could not detect that intensive trauma treatment with parental and systemic components (FITT) was more effective than intensive trauma treatment without these components (ITT), in terms of reducing adolescent's PTS symptoms and feelings of emotional insecurity, increasing parents self-evaluated knowledge on trauma-informed parenting and improving the parent-child relationship and parent and adolescent functioning. As expected, FITT was faster in reducing PTS symptoms than non-intensive trauma treatment as usual (TAU) four weeks after start of treatment, based on both parent and adolescent reported PTS symptoms, with a large effect size. Although no significant difference was observed four months after the start of treatment, by that time 71% of adolescents in the FITT condition, compared to 31% of the adolescents in the TAU condition, lost their diagnosis of PTSD. This indicates a clinically meaningful change and an acceleration of treatment effect. The hypothesis that FITT led to a faster reduction of adolescents' feelings of emotional insecurity and a faster improvement in the parent-child relationship was not supported. This also applies to adolescent and parenting functioning, although parents in the TAU condition reported higher increases in emotional availability than parents in the FITT condition.

Due to the small sample size, definitive conclusions about the effectiveness of FITT cannot be drawn. However it is promising that the effect sizes for reduction of PTS symptoms four months after start of treatment were large, based on different types of outcome measures, and no families dropped out during FITT treatment, while previous studies with this group showed small to medium effect sizes and higher dropout rates (Hultmann et al., 2023). The rapid alleviation of PTS symptoms within four weeks of treatment is crucial, as adolescents are at a developmental stage where PTS can impede their growth. The reduction in PTSD diagnoses of 71% is also high, compared to those found in previous studies on intensive trauma treatment, that ranged between 36,4% (van Ee et al., 2024) and 65% (Rentinck et al., 2025). Another remarkable finding was that during treatment in the TAU condition, family problems or mental health issues worsened, resulting in the urgency to change the original treatment plan and study dropout. This could imply that stressors interfere more with non-intensive than intensive treatment. The format of intensive treatment could serve as a buffer for avoidance and increase treatment adherence (Thoresen et al., 2022). Although no other differences were found between groups, overall, adolescents felt they could better preserve their feelings of emotional security during conflicts between parents, and parents felt that they had more knowledge on trauma-sensitive parenting. Because improvements were observed in all groups, it is difficult to detect differences in the pace of these changes. That these families, exposed to family violence, showed improvements after

such a small period is promising. Contrary to the study hypothesis, parents participating in TAU reported a greater increase in the degree they felt emotionally available for their child four weeks after start of treatment, than parents in the FITT condition. Possibly, parents in FITT were more focused on their own treatment process. Four months after the start of treatment, this difference disappeared.

## Limitations

An important limitation is the small sample size, making it difficult to test differences between conditions. However, the effect size for the reduction of PTS symptoms in the comparison between intensive versus non-intensive trauma treatment was large and exceeded the minimal needed effect size for our sample size. Although the RCT design is a strength, families were reluctant to participate due to concerns about being assigned to non-intensive treatment, while referrers were hesitant about intensive treatment, fearing worsening of symptoms. Despite the risk of selection bias, included families faced numerous challenges, with parents experiencing PTS, and recent incidents of family violence.

## Implications

While a previous review reported high treatment dropout rates in interventions for families exposed to family violence (Cox et al., 2025), this study reported no treatment dropout in FITT. This shows that intensive treatment can optimize treatment adherence. To increase referrals to intensive treatment, it is necessary to improve screening for PTSD and the presence of family violence, to provide psychoeducation on the tolerability of intensive treatment, to consider family treatment preferences, and support families in overcoming practical barriers. This is crucial given the significant long term personal and societal costs of family violence (Herbert et al., 2025). We recommend that future controlled studies, with larger sample sizes and a dismantling design, focus on unravelling the necessary components of intensive treatment and how intensive treatment can optimize common factors in psychotherapy. Pre-randomization can be considered to better align with family needs. Current intensive treatments differ in duration and trauma-focused, parental, and systemic components, possibly resulting in different treatment effects. Collaboration in clinical and scientific work can help to better understand which components and formats are best for families exposed to family violence.

## Conclusion

The superiority of FITT over intensive trauma treatment without a family-based component is still unclear. However, FITT appeared to be a promising way for rapidly reducing PTS symptoms and optimizing treatment adherence. More support for families to encounter intensive treatment and a trauma-informed health care system can ensure that more families benefit from intensive trauma treatment.



# 5

## **Family-based Intensive Trauma Treatment for youth with PTS symptoms after family violence: A qualitative study of youths' perspectives on treatment outcomes, key components, and barriers and facilitators for treatment success**

Fictorie, V., Jonkman, C., Visser, M., Steketee, M., & Schuengel, C. (2025). Family-based Intensive Trauma Treatment for youth with PTS symptoms after family violence: A qualitative study of youths' perspectives on treatment outcomes, key components, and barriers and facilitators for treatment success. Under review.

## **Abstract**

Family violence affects the lives of youth and their families. Treatment offers an opportunity to reduce the possible long-term negative consequences of family violence. Efforts to further develop treatments by including family relationships and condensing treatment into a high-intensive format require reflection from the perspective of youth themselves. In this study, youth in an intensive trauma treatment trial with or without a family based component, were interviewed afterwards. They reported improvements for themselves. Those who received treatment with the family component also reported improving parental and family outcomes. Youth identified as key elements the combination and variety of trauma-focused components and therapist rotation. They perceived that the family-based component created a supportive context, addressing family safety and parent mental health. Youth who did not receive the family-based component had mixed attitudes toward participation of family members. Several facilitators and barriers for treatment success were identified. Findings highlight the importance of including the voices of youth when trying to understand changes within the therapeutic process. Furthermore, youth's preferences for treatment and their considerations on inclusion of family members need to be attended to.

## Introduction

### Background

Family violence affects the lives of many families. Around one in six people experienced physical family violence in their childhood, as a victim or witness (Whitten et al., 2024). After interpersonal trauma, such as family violence, approximately one-third of youth (I. Visser et al., 2025) and more than three-quarters of adults report posttraumatic stress (PTS) symptoms (Ferrari et al., 2016). Furthermore, parents report elevated levels of parenting stress (Sypher et al., 2022) and show more negative parenting, increasing the risk of negative parent-child interaction (Kopystynska et al., 2022). Given this significant impact of family violence during a critical phase of youth development, effective interventions are crucial not only for youth to recover from the psychological impact that otherwise may have long-term consequences (Felitti et al., 2019), but also to restore parent-child relationships. For therapy to do so effectively, it is important to understand the perspective of youth participating in psychotherapy that not only may be intensive in its focus on their PTS but may also involve their parents.

### Treatment for youth exposed to family violence

Despite the impact of family violence at both the individual and the family level, interventions for family violence (Rizo et al., 2011) and trauma-focused therapies, that are effective in reducing PTS symptoms (Hoogsteder et al., 2022), do not standard focus on both youth and parents. The number of randomized controlled trials that specifically focused on the effectiveness of trauma-focused cognitive behavioral therapy (TF-CBT) after family violence is also low and dropout rates for this group are higher than found in general studies on TF-CBT (Cox et al., 2025; Simmons et al., 2021). In a qualitative study, youth who participated in trauma-focused treatment reported that family safety was seldom addressed by their therapist, although the violence at home continued during the treatment period (Onsjö et al., 2022). Treatment may therefore improve by taking into account the perspectives of youth themselves on the outcomes that matter to them in addition of symptom reduction (Cuijpers, 2019). Their perspectives can provide valuable insights into how they perceive and explain change in psychotherapy (Wampold, 2015).

### Family-based component

Pernebo and Almqvist (2016) recommended that, based on their qualitative study with youth exposed to family violence, treatment should focus on both trauma processing of the child and also include treatment for the parent focused on parental distress, parenting skills, and parental availability. Furthermore, a review on interventions for families exposed to family violence suggested that interventions that include joint sessions next to a separate child and parent component yielded the most effect for parents and children (Anderson

et al., 2018). Studies on interventions that included a parent component showed effects on parenting stress (Rizo et al., 2011) and negative parenting, but only a small number of studies included these variables as an outcome measure (Lindstrom Johnson et al., 2018). Also, reporting on family safety as an outcome measure was often lacking. Furthermore, for treatments with family-based components to be feasible, it is important to understand the expectations and experiences of youth who have been offered such treatments.

### **Format of the treatment**

To improve adherence and timely recovery, there is a recent trend to intensify trauma treatment. Also for youth, uncontrolled trials suggest that intensive trauma treatment for youth may be effective (Rentinck et al., 2025; van Ee et al., 2024). Intensive trauma treatment may reduce dropout (Hoppen et al., 2023) and increase adolescents' feelings of accomplishment (van Ee et al., 2024). In intensive trauma treatment, the trauma-focused components are offered by a group of therapists, so called 'therapist rotation'. Van Minnen et al. (2018) reported that 62% of participants were positive about their contacts with the rotating therapists from the team. Therapists in intensive trauma treatment reported less hesitation to initiate trauma treatment, even in cases where symptoms were severe, and expected that intensive treatment may make trauma treatment more feasible for populations with complex needs (Vaage-Kowalzik et al., 2025). This is an important finding, as in previous studies complex groups were sometimes excluded, such as youth with an unsafe home situation (Tijsseling et al., 2024) or youth whose parents also experienced PTS symptoms (Hendriks et al., 2017; Ooms-Evers et al., 2021). As youth with PTS after family violence may also have complex needs, their perceptions and experiences over the course of intensive trauma treatment may inform further testing of this treatment format for this population.

### **Present Study**

To improve treatment adherence, accelerate recovery, and address the consequences of family violence at the individual and family level, we developed intensive trauma treatment with parent and family components. The effectiveness of this intervention, Family-based Intensive Trauma Treatment (FITT), was tested in a randomized controlled trial comparing intensive trauma treatment with parental and family components with intensive trauma treatment without these components (ITT) and with regular non-intensive trauma treatment with parental and family components. Although the results of this study will help us understand whether FITT is an effective treatment for youth exposed to family violence, it is also important to know what worked and did not work from the perspective of youth participating in an intensive trauma treatment with parental and family components (FITT) and part in an intensive trauma treatment without these components (ITT). Therefore we explored youths' perspectives on improved outcomes and key components of an intensive

trauma treatment with and without family and parental components and to understand what they perceived as facilitators and barriers for treatment success. This qualitative study pursued the following questions:

1. What outcomes did adolescents experience after intensive trauma treatment and how did their perspectives vary with the inclusion of a family-based component?
2. What did adolescents perceive as the key components of intensive trauma treatment and how did their perspectives vary with the inclusion of a family-based component?
3. What facilitators and barriers to treatment success did adolescents experience in trauma treatment?

## Method

### Participants

This study included adolescents with a history of family violence who participated in a randomized controlled trial (RCT) that tested the effectiveness of FITT. FITT was compared with two other trauma treatments: intensive trauma treatment without parental and systemic components (ITT) and non-intensive, weekly trauma treatment as usual (TAU). For detailed information, we refer to the published research protocol (Fictorie et al., 2022). The present study was approved as an amendment to the trial protocol by a Medical Ethical Committee of Amsterdam UMC on 8 June 2023 (reference no: 2020.505). To participate in the initial RCT, participants were found eligible to participate if (a) they had been exposed to family violence, including interparental violence, child abuse and/or sexual abuse; (b) acute safety in the family was established; (c) they were between 12 and 20 years old; (d) lived at home with caregiver(s); (e) parents / caregivers, living with the adolescents, could participate in the systemic components; (f) they had symptoms of posttraumatic stress, at least intrusions and avoidance, based on the intake; and if (g) fluency in the Dutch language. Adolescents could not participate if they or their caregivers had acute psychotic symptoms, severe alcohol and / or drug addictions, and if adolescents had attempted suicide in the past three months. Only adolescents who participated in FITT or ITT in the RCT could participate in the qualitative study. Nine adolescents participated in the qualitative study. Of them, five received ITT and four received FITT. Treatment took place at one of the four participating treatment centers. Participants in the qualitative study were between 14 and 20 years of age at the time of treatment. One boy and eight girls participated. To protect the privacy of the participants, all participants are called 'she' and all names used in this report are pseudonyms.

## **Procedure**

### ***Study procedure***

Participants were contacted by phone if they had provided consent in the initial study to be contacted for future studies, after the last measurement of the trial. Interested participants received an information letter and those who agreed to participate signed an informed consent form. In case they were younger than 16 years of age, parents/ legal representatives were also asked for their permission. After participation, the adolescents received a cinema voucher with a value of 50 euro. 22 participants were contacted, twelve did not want to participate, and one could not be reached. The interview transcripts were pseudonymized. The first and second author were responsible for coding the interviews and the first author for data analysis.

### ***Treatment***

Information on the interventions FITT and ITT can be found in Table 1. In both treatments therapist rotation was applied. One therapist coordinated the treatment and also served as a contact person for the participant.

### ***Interview***

The interviews were conducted by two clinical psychologists (first and third author) and one postdoc researcher (second author). Both clinical psychologists developed the treatment protocol of (F)ITT but were not involved in the treatment of the participant they interviewed. All interviews were audio recorded. The interview took approximately one hour and, depending on the possibilities and preferences, was done face-to-face at one of the treatment centers ( $n = 7$ ) or online in a secure digital environment ( $n = 2$ ). All participants were informed that if they did not want to answer questions or did not want to finish the interview, this could be done without explanation or consequences. Open exploratory questions were asked about the overall experience with (F)ITT, the perceived outcomes, the proposed key elements, and the perceived facilitators and barriers to treatment success. Verbal interview questions were supported with visual materials. All the different components of (F)ITT were visually illustrated. For example, psychomotor therapy was illustrated with a pictogram showing a stretching exercise. In one of the questions, participants were asked to rank the components according to their level of helpfulness, starting with the most helpful and ending with the least helpful. They were also asked to rank the components according to their level of pleasantness. Example questions of the interview are: "Which component helped you the most?" and "To what extent did you talk to your parents about treatment?". In one of the questions participants were asked to rate their overall relationship with the different therapists on a scale from 0 (very negative) to 10 (very positive). The interview protocol is included in the Supplementary Material.

**Table 1** Overview of treatment

| Phase                               | Days p/w | Included in | Session                                          | Focus                                                                                                               | Target                                                |
|-------------------------------------|----------|-------------|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| Preparation<br><i>1 week</i>        | 2        | FITT & ITT  | Psycho-education                                 | - knowledge about family violence, PTS, trauma<br>- traumasensitive parenting<br>- rationale of (F)ITT              | FITT: adolescent, family (network)<br>ITT: adolescent |
|                                     |          | FITT & ITT  | Clustering                                       | - Ranking traumatic memories                                                                                        | FITT & ITT: adolescent                                |
| Trauma-processing<br><i>2 weeks</i> | 3        | FITT & ITT  | Imaginal Exposure<br>Psychomotor therapy<br>EMDR | - PTS and comorbid symptoms                                                                                         | FITT & ITT: adolescent                                |
|                                     |          | FITT        | Parent training                                  | - parental stress<br>- adolescent and parent PTS<br>- support<br>- trauma-sensitive parenting<br>- family narrative | FITT: parents                                         |
|                                     |          |             | Short interaction                                | - sharing<br>- trauma-sensitive parenting                                                                           | FITT: adolescent and parents                          |
| Integration<br><i>1 week</i>        | 3        | FITT        | Family sessions                                  | - trauma narrative<br>- destructive communication patterns<br>- vulnerability cycle<br>- family safety              | FITT: family                                          |

## Data Analysis

Initial codes were defined a priori (Braun & Clarke, 2006), based on a systematic literature search and in consultation with experts in the scientific and clinical field of family violence. These defined codes were: (1) trauma-focused therapy, (2) therapist rotation, (3) psychoeducation / knowledge of trauma and family violence, (4) parent-child relationship, (5) parenting, (6) social support / resources, and (7) safety within the family. The first step in analyzing the interviews was for both researchers to read the transcripts. The next step was to read the transcripts again and to make notes for ideas on coding. Then, using the software program ATLAS.ti 25 (ATLAS.ti Scientific Software Development GmbH, 2025). The researchers independently performed general coding by selecting areas of text and assigning these to the respective code. In the next phase, the two researchers reviewed the coded data to determine if the preliminary codes were suitable and, according to

inductive coding, if codes should be added. The interviews were coded independently, but in joint consultation, coding choices were discussed to achieve consensus. The following codes were added: (1) adverse events, (2) body-oriented therapy, (3) care after treatment.

We determined the saturation for the interviews using the method of Guest et al. (2020). This means that we calculated the saturation ratio by counting the number of unique themes for every two additional interviews and divided this by the number of unique themes in our base size ( $n = 4$ ). Our new information threshold was 5%, which means that saturation was reached when the last run of two interviews added less than 5% of new information.

Results

After the base size ( $n = 4$ ) three new codes were identified in addition to the seven initial codes, resulting in ten codes. In the subsequent run of two interviews, no new codes were identified. Therefore these two interviews yielded less than 5% of new information (0%) meaning that saturation was reached after six interviews. The ten codes have been brought together into five overarching themes: (1) family relationships and parenting; (2) trauma treatment; (3) format of the treatment; (4) safety and revictimization; and (5) support outside the family and resources during and after treatment. The themes and codes are shown in Table 2.

Table 2 Themes and codes

| Themes                                                              | Codes                                                     |
|---------------------------------------------------------------------|-----------------------------------------------------------|
| Family relationships and parenting                                  | Parent-child relationship                                 |
|                                                                     | Parenting                                                 |
| Trauma Treatment                                                    | Trauma-focused therapy                                    |
|                                                                     | Body-oriented therapy                                     |
| Format of the treatment                                             | Psychoeducation / knowledge of trauma and family violence |
|                                                                     | Therapist rotation                                        |
| Safety and revictimization                                          | Safety within the family                                  |
|                                                                     | Adverse events                                            |
| Support outside the family and resources during and after treatment | Social support / resources                                |
|                                                                     | Care after treatment                                      |

## Family relationships and parenting

### Outcomes

After treatment, youth reported both negative and positive outcomes and their perspectives differed, depending on whether they received FITT or ITT. Three participants in ITT felt lonelier, depressed, or more withdrawn than before treatment. One of them felt that she was doing better and was more open to others after ITT, but conflicts between family members had escalated again and set back their relationships for a long time. Another participant in ITT felt that the relationship with her parents had already improved before start of treatment, because her parents knew what happened to her, offering them a new perspective on the behavior of their child. A participant in FITT, as well as a participant in ITT, felt that her parent also needed a form of trauma therapy. One of them explained that her parent was triggered in situations related to traumatic events they experienced as a family. Unlike the parent in ITT, the parent in FITT was also referred to therapy for herself, to the relief of the participant. All participants in FITT perceived an improvement in the degree to which their parents were supportive. They mentioned that parents were more aware of the effects of trauma and were more understanding than before treatment. As a result, they were more likely to share their feelings with their parents. One participant in FITT felt that her parent was more capable of listening to her and accept her boundaries when she did not want to talk. This increased understanding was articulated by Elena, a participant in FITT, as follows:

*"Because my mom, like, normally she didn't really have... um, the bond was just very different than it is now, you know? She used to get irritated quickly, like... by the things I did, and she didn't really have much understanding for it. She didn't get why I did certain things. She just didn't understand it. But now, she does—she understands it better now."*

In addition, Lisa, who participated in FITT, described:

*"This now feels much more like a home."*

### Key components

Participants in ITT and FITT differed in their opinions regarding the necessity of parent and family components, although most indicated they would appreciate their parent receiving support for their own well-being. When asked which component was most helpful, none of the FITT participants mentioned the parent and family component as most helpful. Two out of five ITT participants expressed a preference for a family-based treatment, while the others were pleased that their parents were not involved. Overall, ITT participants felt that they did not need the parental involvement in treatment because they were used to do things alone and rely on themselves. Two participants were uncertain whether involving

parents would lead to positive change, sometimes due to the parents' psychological problems. They were afraid that their parent might react with anger, disappointment or lack of self-reflection. One ITT participant was afraid she would not open up if her parents were present, assuming that addressing family relationships would require parents participating in trauma sessions. Two ITT participants were initially pleased that they were assigned to ITT but later felt a preference for FITT. Before treatment, one feared parental anger upon disclosure, while the other preferred to handle matters alone. Subsequently, both felt that support for their parents could have improved parental understanding and support and would have benefited the parents themselves.

One FITT participant felt that the outcomes would have been similar even if parents had not been involved, although she valued the support she received during the parent-child interaction sessions. The other three FITT participants were pleased to have received family-based treatment, attributing this to improved outcomes on a family level. Youth participating in FITT reported that it was important for them to see that their parent receive help and support. Another participant in FITT noted that FITT created a context in which the parent could talk about the subject of family violence, which was considered to be important because the parent had also experienced family violence in childhood. Another FITT participant felt that after FITT her parent was more sensitive and this made it easier for her to talk to her parent. Lina, who participated in FITT, valued the interaction session at the end of each treatment day:

*"I could still find my support at the end of the day. Because everything had been so intense and then at the end of the day you still had that support. That you could still talk to her."*

### **Facilitators and barriers**

An ITT participant was afraid to open up with parents present because the parents did not know details of the traumatic experiences, while another ITT participant felt unable to share traumatic events because the parent was part of the traumatic experiences. Four ITT participants mentioned that parents were a support for them during treatment and this helped them continue treatment. For example, parents drove them to treatment or accompanied them during breaks on a treatment day, were interested in their feelings after a treatment day, or offered them drinks and hugs.

## **Trauma treatment**

### **Outcomes**

All participants, regardless of whether they received FITT or ITT, were positive about the results of the trauma-focused components with respect to their PTS symptoms. They

reported less or no intrusions and nightmares and a decrease in avoidance behavior. They were less afraid in daily situations and during confrontations with objects, persons, or situations that used to be triggers. They experienced more tools to regulate stress, their sleep improved, and they were more aware of body sensations. Lisa said:

*"Well, I'm doing pretty well in that I dare to do things, and that I dare to go outside, you know. And that I dare to live a normal life again."*

Sofia described:

*"Well, actually perfect. I haven't had any problems since."*

### **Key components**

Participants were asked which component they valued the most, including Imaginal Exposure, PMT, and EMDR. No differences were found between ITT and FITT participants. Three participants were most positive about Imaginal Exposure therapy. Sofia said:

*"I just couldn't get the words out. Just saying the words. At some point, I managed to do it, and I really feel like that helped the most."*

Although five participants reported Imaginal Exposure as the therapy they disliked the most, they experienced it as very successful in reducing their PTS symptoms. Elena described:

*"I found it awful to do, but yeah, in some way I also kind of valued it... like... to come back into the moment and realize: yes, this is what happened. And then, in the end, I can just let it go."*

Four participants experienced EMDR as the most helpful part of the program, while there was also a participant who disliked EMDR and felt that it was not effective. PMT was mentioned three times as the most effective part, and almost all participants appreciated PMT and reported that it increased their body awareness and offered them tools for stress regulation. One reported that PMT was uncomfortable. A participant who described always feeling tensed was surprised that she could feel a moment of relaxation during PMT. In addition, a participant mentioned that PMT was the fun part of the day and valued the information she received about the effects of trauma on the body. Participants in general appreciated the psychoeducation during PMT and the opportunity to release stress.

### **Facilitators and barriers**

Participants mentioned that it was important to “*just surrender to it*”. Furthermore, it was mentioned that some stability and support in life increased their willingness to engage in trauma therapy. Layla said:

*“I was extremely tense, I really thought, ‘this is going to be intense, this is scary.’  
But actually, um, I received so much support in that moment that  
it became much easier to approach it calmly.”*

### **Format of the treatment**

#### **Outcomes**

Both FITT and ITT participants reported that during treatment their knowledge increased of what to expect from treatment and in their knowledge on the consequences of trauma and family violence.

#### **Key components**

No differences were apparent between the perspectives of FITT and ITT participants regarding key components. Participants described the combination and coherence of the various trauma therapies as key components. Layla said:

*“So you have the part where you really go into your head, you have the part where  
you’re actively doing something but still thinking about it and kind of processing it, and  
then you have physical therapy, which worked really well for me. Because for me,  
I work better in practice—books are really difficult for me. And through that,  
we actually discovered that this approach worked really well.”*

Participants valued the variety of trauma-focused therapies included in the treatment, as this ensured that there was always a therapy that suited their individual needs. Clair explanations regarding the rationale behind the trauma therapies further enhanced their positive expectations of the therapy. Participants reported that the psychoeducation session provided comprehensive information about the treatment program, and that this information was repeated during treatment. Sofia said:

*“I knew what I could expect and what I expected also happened.”*

All participants looked back positively on the support they received by the team of therapists during the treatment. On average, participants gave the team an 8.3 on a scale ranging from 0 to 10 for the therapeutic relationship. Overall, they felt supported and the diversity in the way therapeutic techniques were applied was helpful. One participant

mentioned that she would feel more comfortable with a single therapist. Others felt that receiving treatment from multiple therapists prevented them from bonding with a therapist, avoiding sadness when that relationship would end at the end of treatment. In general, participants felt that they could talk about everything with the therapists and that the therapist knew what they were doing. Participants appreciated they had one person who coordinated the whole treatment process.

### ***Facilitators and barriers***

Some participants were nervous about how they would respond to the intensity of the program. One participant mentioned feeling scared when anticipating a session in which she had to process a memory that she did not want to think about again. Another participant said that it was helpful that all the therapists were familiar with her life history as this eliminated the need to repeat their story to each therapist. Two participants described the transition from intensive treatment to a treatment pause afterward as a large step and expressed that they missed direct aftercare. They suggested implementing a more gradual transition from high-intensive to low frequency treatment.

### **Safety and revictimization**

#### ***Outcomes***

ITT and FITT participants differed in their perspective on family safety during and after treatment. Both ITT and FITT participants reported a decrease in incidents of family violence. However, three ITT participants reported a continuation of conflicts during and after treatment, while only one FITT participant reported one incident of violence after treatment. Two ITT participants and two FITT participants reported adverse experiences outside the family in the period after treatment.

#### ***Key components***

ITT participants attributed the decrease in incidents of family violence to newly acquired skills on the individual level. For example, an ITT participant experienced fewer fights at home because she was now more inclined to ask what was going on before reacting on an impulse. Another participant felt that after ITT she was better able to cope with specific behavior of her parents that would previously lead to a lot of tension. A third participant in ITT described that she previously had conflicts with her parents due to her oppositional behavior, but since she opened up to them about her traumatic experiences, they were understanding and the number of conflicts decreased. An ITT participant who described conflicts at home, mentioned that after treatment she and her parent did not know how to interact with each other to prevent conflicts. She also missed aftercare on this topic. Layla, another ITT participant, described:

*"I could calmly go home, but once you are home, you fall into a certain automatic rhythm. You have put on a certain mask."*

A FITT participant said that her family no longer had physical fights, while family violence was severe prior to treatment, and attributed this to a change in the behavior of all family members. One FITT participant, Lisa, who valued the interaction sessions at the end of the day the most, described:

*"The conversations at the end of the day, together with my mother, I really enjoyed. I immediately noticed how much I liked that. Because I could, in a safe environment, talk to my mother without us, like yelling at each other. I felt really safe to open up about it. I could see that it was good for my mother."*

### **Facilitators and barriers**

One ITT participant mentioned that her home situation was more stable, and this helped her to enter into treatment. One FITT participant reported that it would not have been possible for her to process the traumatic memories if one of her parents, no longer living with the family, was still such a threat. One participant noticed that during ITT, her parent was setting some clear rules and boundaries at home to create a safer and more stable environment. In contrast, another participant experienced a lot of stress at home during ITT. Layla described:

*"Because before you start the day, you had to fill out a form about how you're feeling, how things went, and there was always kind of a fixed pattern because of what was happening at home. And then I had to say again that there had been a fight. And I think that was probably on that list every single day."*

Three participants in ITT and two participants in FITT mentioned different adverse events in and outside the family after treatment that hindered their recovery, including family separation, bullying, attempted suicide of a loved one, sexual abuse, and violence.

### **Support outside the family and resources during and after treatment Outcomes**

Participants, regardless of whether they participated in ITT or FITT, mentioned that they felt more motivated to do things after finishing treatment, such as exercise or starting a new study. They were less afraid to participate in the normal things of life. They also reported that they were better at taking breaks and talking to others about themselves. Some felt more confident and others experienced more stability in their life, in part because they were better able to regulate their emotions.

### ***Key components***

In general, participants felt that the trauma components helped them feel less tension and fear, resulting in a resumption of normal life. For example, these components helped them to talk and hang out more with friends, be more active at school, and do sports.

### ***Facilitators and barriers***

Participants differed in whether they were open at school or work about their treatment and if they were open, whether they experienced support. For some, informing school and work about their treatment program helped them during and after treatment. They felt supported if school or work was flexible with their schedule and expectations and if colleagues and teachers were emotionally available. A participant reported that she did not talk about her treatment at work and preferred to continue her work during treatment. Some participants also preferred to continue their school on non-treatment days, while others who continued their schoolwork felt it was too much, especially because they experienced pressure from school. Another participant felt that her colleagues were gossiping about her trauma and did not feel supported. Other participants who were open to work or school about their treatment did not have to go to school or work and this felt supportive. One participant described that this resulted in a calm state when entering treatment.

Support from friends was important for participants, although some also felt too tired to meet with friends after a treatment day or felt very lonely during treatment and missed supportive friends. Participants who received support from friends described that they had contact with friends after a treatment day, but friends also accompanied them during the breaks on treatment days. Especially friends who also experienced traumatic events were described as more understanding. Regarding resources, participants were very clear on the positive mindset one needs when starting an intensive treatment. It was important to open up for treatment and to feel motivated because the treatment requires hard work.

## **Discussion**

The aim of this study was to explore the perspectives of youth on the outcomes and key components of an intensive trauma treatment with and without a family-based component and their perceived facilitators and barriers to treatment success. This led to the identification of five themes: (1) family relationships and parenting; (2) trauma treatment; (3) format of the treatment; (4) safety and revictimization; and (5) support outside the family and resources during and after treatment. From the perspective of youth, the treatment decreased symptoms of PTS, improved regulation skills, increased motivation

and confidence to participate in daily activities, improved youth's understanding of trauma and the consequences of family violence, with the family component especially improving support and understanding of parents, reducing incidents of family violence, and resulting in professional support for parents themselves. Youth who did not receive the family-based component also reported negative outcomes, such as feeling lonely, depressed and withdrawn.

Key components, perceived by youth, were the trauma-focused therapies, including imaginal exposure, EMDR and psychomotor therapy, and the variety of these therapies, the psychoeducation on trauma (treatment) and family violence, and the diversity in therapists' approach and the supportive therapist team, with the family-based component creating a safe context in which they received support from the parent and could talk about important topics. Most youth felt that support and treatment for parents themselves were or, if they did not receive the family-based component, could be key components. Some youth receiving intensive trauma treatment without a family-based component did not expect the family-based component to have added value. Rather, they were used to rely on themselves, were not confident parents would be able to benefit from such a component, or were wary about their parents' reactions.

Perceived facilitators for treatment success were some stability in daily life, an open attitude and motivation toward treatment, and support from parents, school, work, and peers, especially those peers who had experienced traumatic experiences themselves. Barriers to treatment success were ongoing threat and family violence, fear of the trauma-focused components and abrupt transition from intensive to low-frequency treatment or a treatment pause. For youth participating in intensive trauma treatment without a family-based component, the assumption that details of the traumatic memories needed to be shared was also a barrier, as well as fear of including parents who were associated with the traumatic memories.

The findings provide insights in how youth explain change throughout their therapeutic process. They perceived that clear expectations of the treatment helped them to endeavor and pursue the trauma-focused components. They perceived that psychoeducation increased their knowledge of trauma and family violence and that this offered an explanation for their problems and a rationale for the treatment plan. This is in line with a previous study that showed the importance of psychoeducation in decreasing PTS symptoms in adults exposed to family violence (Laun, 2015). For the effectiveness of a treatment it is important to have faith in the explanation of the psychological problems and in the rationale and actions of the treatment (Wampold, 2015). This was also shown by the comments of participants on Imaginal Exposure therapy. They disliked this form of therapy

but understood why it was important to do and afterwards perceived it as very effective. This implies that they agreed on the therapy goals and tasks, elements of the therapeutic alliance, and this alliance leads both to more positive expectations of the treatment and a better therapeutic relationship (Crits-Christoph et al., 2006). Youth were very positive about the therapeutic relationship with the therapist team. They felt supported by the therapists and described how the diversity of the therapist's approach helped them benefit from the combination of trauma-focused components of the treatment. Some felt that therapist rotation prevented them from becoming sad about parting with a therapist whom they might have bonded with. This was a remarkable finding and sheds new light on the term therapeutic relationship. It resembles the results of a qualitative study on intensive trauma treatment with adults (Thoresen et al., 2022) in which participants described that therapist rotation prevented them from attaching to one person during therapy and offered space to focus on their own process in the specific factors of the treatment.

The study findings, based on the perspectives of youth, suggest that the addition of a family-based component possibly enhances treatment for youth exposed to family violence. Youth receiving the family-based component perceived that the family-based components improved parents' support and understanding and created a safe context to talk to parents about difficult matters. Youth who did not receive the family-based component also felt that the presence of parental support helped them during treatment. This is in line with a systematic review in which emotional availability was found to be a moderator between family violence and children's internalizing symptoms (Carter et al., 2020). It could be that a supportive and understanding context could help youth pursue treatment and benefit from the specific components of a treatment. However, youth who did not receive a family-based component also described how changes at the individual level, such as increased coping skills and reductions in PTS, indirectly reduced the risk of family conflicts. Furthermore, despite family conflicts in several families, all participants reported positive outcomes regarding their PTS symptoms. Perhaps youth can benefit from treatment, despite ongoing conflicts. However, participants also reported that continuing threat could form a barrier, where some stability in life was seen as a facilitator of treatment success. Some participants who did not receive the family-based component also reported negative feelings after treatment, such as loneliness. It should also be noted that new adverse events after treatment, especially in the ITT condition, can result in a recurrence of symptoms.

The study findings also showed that the format of the treatment could play a role in enhancing treatment. Youth valued the treatment format, including psychoeducation on trauma and family violence, a clear rationale of the treatment plan, a variety and combination of trauma-focused components, and the use of therapist rotation.

Comparable to the findings of the meta-analysis of Hoppen (2023), it could be that this format helped them complete treatment. Youth perceived that the combination and variety of the trauma-focused components, including Imaginal Exposure, EMDR and Psychomotor therapy, elicit actions that reduced PTS symptoms and improved stress regulation and coping skills. This corresponds to the views of therapists, who identified the multiple trauma-focused components as a key element of intensive trauma treatment (Vaage-Kowalzik et al., 2025).

### **Limitations**

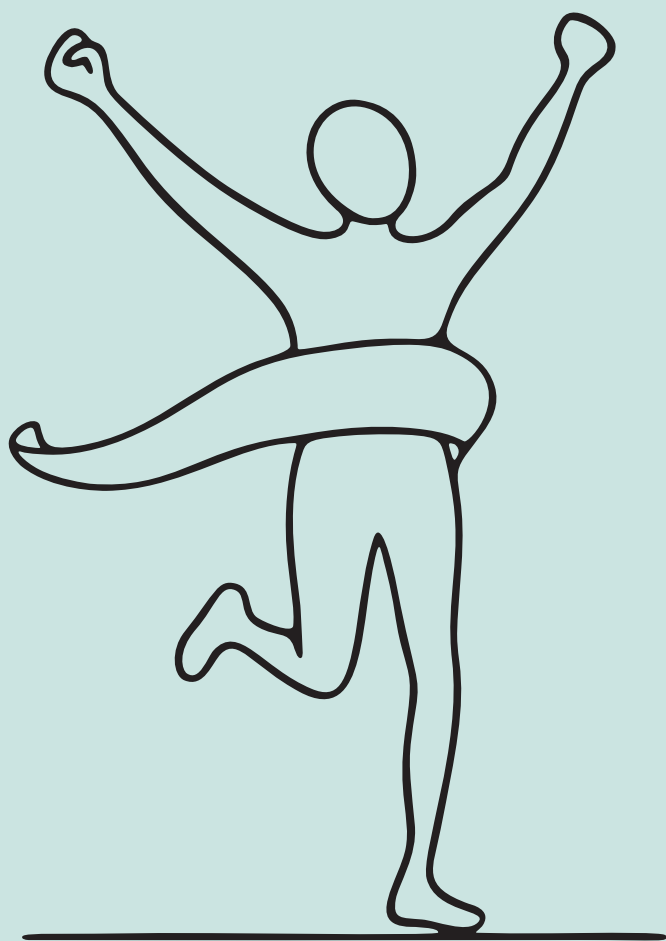
An important limitation is that due to the small number of participants, variation within the sample was limited. For example, almost all participants were female, and therefore results may not be generalizable to individuals of other gender identities. A second limitation is that the time interval between the end of treatment and the interview varied and it could be that retrospective reflections vary depending on this time interval.

### **Implications**

Although participants in FITT valued the family-based component, the attitudes of participants in ITT towards this component were mixed and therefore it is important to carefully address their concerns and the possible negative beliefs they have about including their family in treatment. Clear information on the content of a family-based component is necessary and shared decision-making (Langer & Jensen-Doss, 2018) can help to include both youth and parent perspective. A second recommendation is to include intensive trauma treatment as one of the treatment options, as this form of treatment is valued by youth. When offering intensive trauma treatment, it is advisable to plan how the transition from intensive treatment to non-intensive treatment or guidance can meet the needs of youth and parents. Another recommendation is to ensure that youth who experience ongoing family conflicts are not automatically excluded from treatment as several participants in this study profited from treatment, despite ongoing conflicts at home. A last recommendation is to consider how support outside the family can be integrated in the treatment, for example, by involving a peer from their own network, other adolescents who participate in the same treatment program, or by including a peer expert. Although the effect of peer experts in the treatment of youth has not yet been established (Simmons et al., 2023), youth in the present study valued support from peers with a trauma history and youth in the study by van Ee et al. (2024) explained that social support, in the form of acknowledged feelings, distraction and the possibility of sharing feelings, was important for them to start and adhere to therapy.

**Conclusion**

Youth exposed to family violence reported valuable outcomes after intensive trauma treatment with and without a family-based component. It is promising that this group, which is sometimes withheld from trauma treatment, reported improvements, even in cases where family conflicts continued. Both the format of the treatment and the family-based component were mentioned as key components. It is important to carefully address the beliefs of youth on participation of families in trauma treatment. Support in general can help youth to profit from intensive trauma treatment. To enhance trauma treatment for youth, it is recommended to include a family-based component and provide treatment in a high-intensive format, after consulting youth and parents through a process of shared-decision making.



# 6

## **General discussion**

## General discussion

Family violence is a worldwide problem, experienced by one in six people in childhood (Whitten et al., 2024). As a consequence of family violence, children and parents may experience psychological problems (Bacchus et al., 2018; Ferrari et al., 2016; Holt et al., 2008; I. Visser et al., 2025), which may place considerable strain on parenting and the parent–child relationship (Kopystynska et al., 2022; Lee et al., 2024; Sousa et al., 2011; Sypher et al., 2022).

This dissertation aimed to understand, improve, and accelerate youth's recovery after family violence. There is a gap in effective interventions for youth, as youth exposed to family violence frequently drop out of existing treatment programs (Cox et al., 2025) and incidents of family violence often persist (Steketee et al., 2021), while rapid recovery is crucial to limit the effects on their development as a person. To achieve the objectives of this dissertation, three central research questions were formulated: a) Which mechanisms contribute to youth's recovery after family violence?; b) Which systemic elements are needed in trauma treatment for youth exposed to family violence?; c) How can treatment be optimized for families exposed to family violence? In this chapter, answers to these central research questions will be formulated and discussed. The limitations of this dissertation will be considered and the chapter ends with (clinical) implications and recommendations. First, a description of the included families will be presented to show whether we succeeded in including families such as Ray's, whose family was presented in the introduction to this dissertation.

### Study Population

This dissertation was based on two study samples. The first, included in the longitudinal study described in **Chapter 2**, were 562 children between 8 and 18 years of age ( $M = 12.28$ ,

$SD = 2.83$ ). They were referred to Child Protection Service (CPS) with their family due to signs of child abuse and neglect. The sample is part of a cohort study of the Verwey Jonker Institute (Steketee et al., 2021). In the original sample in more than half of the families (57%) child abuse and interparental violence cooccurred. Also, 32% of youth and 16% of parents experienced PTS symptoms in the clinical range. In the selected sample, 58% of the families were one-parent families and 45% had a low family income, both dynamic risk factors for family violence (Steketee et al., 2021). The sample in the second study, the randomized controlled trial (RCT), also showed that families face multifaceted challenges. In the RCT, presented in **Chapter 3** and **4**, 35 adolescents between 12 and 20 years ( $M = 16.26$ ,  $SD = 2.02$ ) were included, with nine of them also participated in the qualitative study, described in **Chapter 5**. All were exposed to family violence and reported symptoms of PTS. Although acute safety needed to be established, ongoing conflicts at home were

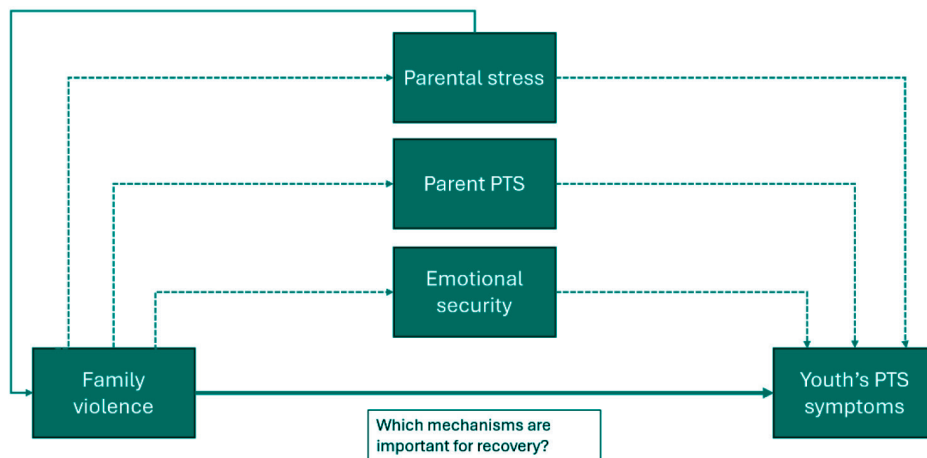
not an exclusion criterion. Before start of treatment, 85% of youth reported destructive family conflicts in the year prior to the study. Parents also had a challenged childhood, similar to their children. About 44% of parents reported one to three adverse childhood experiences (ACEs), such as physical abuse, and 38% reported four or more ACEs. Evidence for a graded relationship between ACEs and mental and physical health is well established (Felitti et al., 2019). Especially for people who have experienced four or more ACEs, the chances of developing mental health problems, health risk behaviors, and somatic diseases are high. Within the study sample, around one third of parents reported PTS symptoms in the clinical range. Although the sample size was smaller than expected, we succeeded in including families with complex problems, who are often excluded in intervention studies. For example, in other studies on intensive trauma treatment, families were excluded if one of the parents had PTS symptoms (Hendriks et al., 2017; Ooms-Evers et al., 2021) or if the home situation was still unsafe (Tijsseling et al., 2024). The reluctance to include these families in studies on intensive trauma treatment was also reflected in the referral of youth. The professionals around these families were often afraid that intensifying treatment would worsen symptoms or the home situation. In contrast, youth themselves sometimes hesitated because they were afraid to be randomized to non-intensive trauma treatment, while they preferred intensive treatment. In both the longitudinal study and the RCT, data from parents and youth were included and separately analyzed to reveal differences in their perspectives. Furthermore, in the longitudinal study, in contrast to previous studies on youth's recovery, intrafamilial processes were separated from interfamilial processes. This was done because the stability of constructs such as family violence can differ across families and changes in families with stable versus fluctuating levels of violence can have different effects. The technique of Random Intercept Cross-lagged Panel Modeling was used to examine intrafamilial processes while accounting for interfamilial differences.

### **Which mechanisms contribute to youth's recovery after family violence?**

The longitudinal study in **Chapter 2** tested whether mechanisms, that according to theory (Emotional Security Theory; Davies & Cummings, 1998) and empirical evidence (Crusto et al., 2010; Cummings et al., 2006; El-Sheikh et al., 2008; Telman et al., 2016) play a role in the impact of family violence on youth, also contribute to youth's recovery. In line with the study hypotheses and a previous longitudinal study (Galano et al., 2021), decreases in youth PTS were preceded by child-reported reductions in the level of family violence. This means that youth, referred with their family to CPS, showed signs of recovery after they perceived family safety improved. Parent report on family violence did not predict youth recovery. In contrast to the study hypotheses and previous, cross-sectional studies (Crusto et al., 2010; El-Sheikh et al., 2008; Telman et al., 2016), we did not find that youth emotional security, parent PTS, and parental stress were contributing mechanisms in youth's recovery. However, in exploratory analyses, parental stress did seem to play a role in restoring family

safety. When parents felt their level of parental stress decreased, they later reported that the level of family violence was reduced. The finding that families on average improved on all outcomes in the period after referral is encouraging. Based on this longitudinal study, we can conclude that reductions of the family violence itself contribute to youth recovery and that reductions of parental stress may help to increase family safety. The results are visually presented in Figure 1.

**Figure 1** Mechanisms in youth's recovery after family violence



*Note.* Bold lines indicate significant paths; dashed lines indicate nonsignificant paths.

### Which systemic elements are needed in trauma treatment for youth exposed to family violence?

**Chapters 3** and **4** described the randomized controlled trial comparing intensive trauma treatment with and without a family-based component, and **Chapter 5** describes the perspectives of youth on these treatments. In family-based intensive trauma treatment (FITT), the parental and systemic components are focused on knowledge about family violence and PTS, on trauma sensitive parenting, parental stress, recognizing adolescent and parent PTS, social support, building and sharing a family narrative and family safety. **Chapter 4** describes that FITT was not found to be superior to intensive treatment without a family-based component (ITT), regarding PTS symptoms, emotional security, knowledge of trauma-informed parenting, and general parent and youth functioning. However, a remarkable finding was that in FITT no families dropped out of treatment, compared to 23% in ITT. This suggests that FITT is a tolerable treatment. It could be hypothesized that including the whole family in the treatment process helps youth to complete their treatment.

In **Chapter 5** youth in the RCT were interviewed to explore their perspectives on the outcomes and key components of their trauma treatment and to observe to what extent their perspectives differed according to the treatment they followed, intensive trauma treatment with or without a family component. Youth who participated in intensive trauma treatment with a family-based component reported several positive outcomes on a family level. Youth perceived that after FITT, parents were more understanding and supportive and almost all youth felt that the level of family conflicts decreased. Youth reported that FITT offered a safe context in which they could talk to their parents on difficult topics and feel supported by their parents. Both youth in FITT and ITT perceived that professional support for parents was or could be a key component of treatment. However, youth in ITT differed from youth in FITT with respect to their attitude toward a family-based component. Part of youth in ITT preferred intensive trauma treatment without inclusion of parents, because they were already used to doing things on their own, were not confident their parent would benefit from treatment, feared negative reactions of parents, and were hesitant in sharing details of the traumatic memories. Youth in both conditions reported parental support as an important facilitator for treatment success. Overall, youth from both conditions reported improvements on the individual level. However, several youth who received ITT also reported negative outcomes, such as becoming more withdrawn, feeling lonely, and / or depressed. Based on the results of the RCT and the qualitative study, a family-based component is tolerable and, based on the perspectives of youth, may contribute to improved parent functioning and family safety, although the superiority of this component remains to be demonstrated.

### **How can treatment be optimized for families exposed to family violence?**

The RCT, described in **Chapter 3** and **4**, also tested whether recovery can be accelerated by intensifying trauma treatment, and **Chapter 5** also includes the perspectives of youth on a high intensity format. Results of the RCT showed that intensive trauma treatment resulted in faster symptom reduction than non-intensive trauma treatment after four weeks of treatment, according to youth and parent reported PTS symptoms, with a large effect ( $p < .001$ ,  $\eta^2 = .24$ ). Four months after the start of treatment, 71% of youth, participating in FITT and 73% of youth participating in ITT, lost their diagnosis of PTSD, compared to 31% of youth, participating in non-intensive trauma treatment as usual (TAU). Contrary to the study hypotheses, FITT did not lead to a faster reduction of youth's feelings of emotional insecurity or a faster improvement in the parent-child relationship and general parent and youth functioning. Youth in both treatment conditions reported that they could better preserve their feelings of emotional security during conflicts between their parents. Additionally, in both groups, parents reported an increase in their knowledge of trauma-sensitive parenting. In contrast to the study hypotheses, parents in non-intensive trauma treatment reported a faster increase in the degree to which they perceived themselves

as emotionally available for their child four weeks after start of treatment. An explanation could be that parents in FITT felt more focused on their own process. Four months after the start of treatment, the groups no longer differed.

Clues for optimizing treatments can also be derived from **Chapter 5**, which described the qualitative study on youth's perspectives on key components, facilitators, and barriers in intensive trauma treatment. All youth who followed intensive trauma treatment reported positive outcomes. They reported reductions in PTS symptoms and improvements in their knowledge of trauma and the consequences of family violence and regulation skills, and they also felt more motivation and confidence to participate in daily activities. Youth perceived the format of the treatment as a key factor. They valued the variety of therapies, the supportive therapist team and the diversity in therapist's approach. Receiving psychoeducation helped them to understand the rationale for the different therapies and this increased their positive expectations for treatment. Like one of the participants said, "I knew what I could expect and what I expected also happened". Youth were positive about the therapeutic relationship with the rotating therapist team. They appreciated having multiple therapists, as this prevented them from forming a strong bond with a single therapist, knowing they would eventually have to leave that therapist. To benefit from treatment, youth felt that some stability in life was necessary and that ongoing threats and family conflicts could hinder treatment success. Several participants reported adverse events outside the family, hindering their recovery. Support from parents, school, work, and friends, especially peers with a similar background, was mentioned as important facilitators for treatment success. On the individual level, an open attitude toward treatment and motivation to participate in the trauma-focused parts were mentioned as important aspects to benefit from treatment. On the contrary, fear for the trauma-focused aspects of treatment and an abrupt shift from intensive to non-intensive treatment or aftercare were seen as barriers to treatment success. Based on the findings from both the RCT and the qualitative study, FITT may optimize treatment effects and accelerate recovery for youth exposed to family violence.

### **Family safety**

This dissertation sheds new light on the role of family safety in recovery and treatment of youth after family violence. First, it emphasizes the importance of reducing family conflict to help youth recover from PTS symptoms. Second, this dissertation, in contrast to previous cross-sectional studies (Crusto et al., 2010; El-Sheikh et al., 2008; Telman et al., 2016), did not find evidence that parental stressors and emotional security acted as mechanisms in the recovery of youth exposed to family violence. These unexpected findings may possibly be the result of three alternative approaches conducted in the longitudinal study: a) intrafamilial processes were examined while controlling for interfamilial processes; b) a

broad definition of family violence was used, and c) parent and youth report were analyzed as separate. Although parental stress was not a mechanism in recovery after family violence, it did play a role in changes in the level of family violence. This is consistent with a previous study showing that parents in situations of family violence experienced more parental stress than parents in safe families and were also at increased risk of abusing their child (Temple et al., 2024). Although it is clear that family safety is important for recovery, family safety is not always addressed in trauma treatment in the context of family violence (Onsjö et al., 2022). Youth, participating in the RCT included in this dissertation, also perceived family conflicts as a barrier for treatment success. It is therefore encouraging that youth in the RCT felt that in FITT family safety was addressed and a safe context was created to talk about family conflicts.

### **Support for parents**

The dissertation also shed new light on the importance of support for parents in the context of family violence. Youth in the RCT identified professional support for parents as a key component of treatment, in line with a systematic review that identified emotional availability as a moderator between family violence and child outcomes (Carter et al., 2020). Although parents in the RCT experienced multifaceted challenges, youth described that parents became more supportive and understanding during intensive trauma treatment with the family-based component and that parental support was an important facilitator for treatment success. Although the RCT does not offer conclusive evidence on the necessity of systemic elements in intensive trauma treatment, the perspectives of youth suggest that supporting parents during youth treatment may be important.

### **Intensive trauma treatment**

This dissertation is the first randomized controlled trial on intensive trauma treatment for youth and offers new insights, based on both quantitative and qualitative data. First of all, despite the small sample size and the numerous challenges families faced, intensive trauma treatment with a family-based component resulted in a faster reduction of PTS symptoms in youth four weeks after start of treatment than non-intensive trauma treatment. This means that intensifying trauma treatment can accelerate recovery. Second, in contrast to a dropout rate of 27% to 40% in trauma treatment for youth exposed to family violence (Cox et al., 2025), in intensive trauma treatment with a family-based component, no youth dropped out of treatment, indicating it is a tolerable treatment. A previous study hypothesized that the high- intensity format could serve as a buffer for avoidance and increase adherence to treatment (Thoresen et al., 2022). Third, youth themselves also valued the high intensity format, the combination of therapies and the diversity in therapist approach. They also appreciated the clear plan regarding therapy goals and tasks, both aspects of the therapeutic alliance, important in psychotherapy (Wampold, 2015). In line

with the study by Thoresen et al. (2022) youth also valued therapist rotation because it allowed them to maintain emotional distance from therapists they knew they would eventually have to leave. These new insights suggest that intensive trauma treatment may help youth recover from PTS symptoms in a relatively short time and is also perceived by youth as beneficial.

## **Limitations**

A first limitation concerns the large number of missing data in the longitudinal study in **Chapter 2** and a second limitation was the small sample size in the RCT, described in **Chapter 4**. A possible explanation for the large number of missing data in the longitudinal study is that youth exposed to family violence may avoid questionnaires related to their traumatic experiences (Danese, 2020) or may have feared that mandated reporting to CPS would occur. To ensure data were not lost, statistical measures were taken to handle the amount of missing data and variables related to missing data were included as covariates to reduce bias in the results. Although the sample size was small in the RCT, the effect size for reduction of PTS symptoms after intensive versus non-intensive treatment was large, exceeding the minimal effect size needed based on the sample size for achieving sufficient statistical power. Furthermore, the study succeeded in including families facing multiple challenges, often excluded in scientific research, and the small sample size in the RCT also unexpectedly revealed underlying barriers for referring youth to trauma treatment after exposure to family violence, important for future clinical practice and research. A third limitation is that the longitudinal study showed stronger associations for outcomes with the same source than for outcomes that included different perspectives. Although potential informant bias needs to be considered when interpreting the results, it also underscores the need to separate the perspective of youth and parents. A fourth limitation was that the longitudinal study included multiple children within the same family, resulting in data dependency. To overcome this limitation, sensitivity analyses were performed including one child per family, showing substantively similar results. A fifth limitation is the unequal time intervals in the longitudinal study. In contrast to the first interval of one year, the second interval was a half year. As expected, the results also showed more change in the first year after referral. Perhaps CPS intervenes directly after referral, increasing the likelihood of change in the first year. A final limitation of the RCT is that contrast between groups at end of treatment may have been reduced because several youth in ITT reported that their parents were already emotionally available for them, for example by accompanying them during breaks.

## **Clinical implications**

The role of family violence in youth's recovery shows the importance of addressing and increasing family safety in treatment. The differences in perspectives of youth and parents

on family violence could also imply that it is important to include both perspectives when it comes to monitoring family safety. To equip professionals with tools to address family safety in adult and youth mental health, training programs should include this topic. Although youth reported a stable and safe home situation as facilitators for treatment success, youth who continued to experience conflicts at home, still reported benefited from treatment. This leads to the hypothesis that family safety is important for youth recovery, but that it may be possible to work on family safety and recovery of PTS simultaneously.

In the sample from the RCT study, a large proportion of parents experienced PTS symptoms. Although changes in parent PTS were not associated with family violence or youth recovery, a recent individual participant data meta-analysis (Meijer et al., 2025) showed that parents with higher levels of PTS also experienced more parental stress. Furthermore, the longitudinal study of this dissertation suggested that parental stress played a role in changes in family violence. Therefore, it is advisable to consider screening parents on PTS after family violence and, if necessary, refer them to evidence-based trauma treatment.

A Dutch report on psychological care for adults with PTS (National Health Care Institute of the Netherlands, 2023) showed that only 39% of adults with PTS receive trauma-focused treatment, although trauma-focused treatment for this group is the first treatment of choice (American Psychological Association, 2025). This dissertation highlights the importance of offering trauma treatment for youth with PTS after family violence and considering intensifying their treatment for better treatment adherence and faster symptom reduction. As PTS can hinder youth development (Fowler & Chanmugam, 2007), trauma-focused treatment should be the first treatment of choice. This can help youth recover and to benefit from any additional treatments. A trauma-informed healthcare system could contribute to better screening and treatment possibilities (Goldstein et al., 2024).

The addition of a family-based component to trauma treatment in the context of family violence should be considered because this dissertation reveals that this component was valued by youth and can possibly contribute to positive outcomes on a family level and help youth complete treatment. Shared decision making (Langer & Jensen-Doss, 2018) with clear information on the content of this component can help to address possible concerns youth may have about including their family in treatment.

Because youth indicated that support during treatment was important for treatment success, it is important to consider how support, especially from peers with a background of adverse childhood experiences, could be part of treatment, for example during psychoeducation or trauma-focused sessions. Previous studies also found that social

support increased treatment adherence (Ee et al., 2024) and that participants who received peer support completed more exposure sessions than participants without peer support (Hernandez-Tejada et al., 2025).

Long-term monitoring of youth after family violence is recommended because several youth reported adverse events in the period after treatment and experiences of family violence in childhood have also been found related to adult revictimization (Fereidooni et al., 2024).

### **Implications and directions for future research**

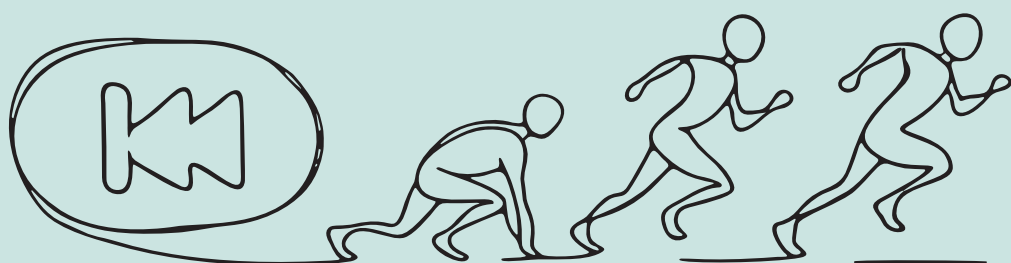
The importance of family safety in recovery of youth exposed to family violence also indicates that family safety should be included in intervention studies as a primary outcome measure. Intervention studies with a dismantling design can contribute to our understanding of the necessary components in the treatment of family violence. Furthermore, in general for studies on family violence it is important to separate perspectives of youth and parents because their view can differ, and not separating them can lead to distorted results. Therefore, exploring parent perspectives on a family-based component in trauma treatment can also reveal new insights. In future studies on recovery of youth after family violence, special attention should be paid to parental stress because it seems to be an important factor in family safety. Another important topic to follow up in future studies is the role of peers in treatment for youth and whether their participation in treatment can increase treatment outcomes and adherence. To ensure that enough families are included in future trials, it is necessary to involve multiple treatment centers in a trial or to align trials with each other so that the data can later be used in an individual participant data meta-analysis.

### **Back to practice**

Before I conclude this chapter with a general conclusion, I will return to Ray and his family, introduced in the first chapter. How does the dissertation help overcome his barriers for effective trauma treatment and stop the ongoing conflicts at Ray's home? Does this dissertation help to understand what is needed for families like Ray? Based on the findings, it is important to focus on stopping the fights between his siblings. A first point of entry could be helping his father experience less parental stress and feel more in control and competent during family arguments. Based on the perspective of youth, the treatment of Ray should also offer a safe context to talk about the ongoing fights. Another point of entry could be the PTS symptoms of Ray and offering him intensive trauma treatment for fast symptom reduction in order to be less triggered at home and school. To feel supported by his father during treatment, his father could receive information on the effect of trauma and the consequences of family violence. Perhaps this multimethod approach is best to help Ray recover from the effects of family violence and help him and his family restore family safety.

**General conclusion**

This dissertation emphasizes the importance of family safety in recovery of youth exposed to family violence. It revealed that reductions of PTS in youth were preceded by decreases in child-reported family violence and that parental stress played a role in decreasing parent-reported family violence. In contrast to theory and previous studies, parental stressors and emotional security were not mechanisms in the relationship between family violence and youth PTS. To address the effects of family violence at the family level and optimize treatment effects, the effectiveness of a family-based intensive trauma treatment was tested. Although it remains unclear whether family-based intensive trauma treatment improves treatment outcomes, it appeared to be promising in rapid reduction of PTS symptoms and optimizing treatment adherence. Both the family-based component and the intensive format were valued by youth themselves and improvements were reported, even in youth exposed to ongoing family conflicts. Better screening on family safety and a trauma-informed health care system may improve treatment possibilities for youth with PTS symptoms after family violence.





## **Appendices**

Summary  
References  
Supplementary materials  
Author contributions  
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Curriculum vitae  
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## Summary

The aim of this dissertation was to understand the mechanisms that play a role in youth's recovery after family violence and to improve and accelerate youth's recovery. In the Netherlands, approximately 9% of people 16 years or older experienced family violence in the year prior to the study (Derksen et al., 2024). Globally, around 17% of people experienced family violence during childhood, either as victims or witnesses (Whitten et al., 2024). The impact of family violence on adults has been widely investigated and in the last three decades the impact on youth has been increasingly recognized. After family violence, youth can experience emotional and behavioural problems (Holt et al., 2008) with around one-third of youth reporting posttraumatic stress (PTS) symptoms (Visser et al., 2025). Youth are also impacted by the consequences of family violence for parenting. Family violence is associated with elevated levels of parenting stress (Sypher et al., 2022) and negative parenting (Lee et al., 2024) and in turn parenting difficulties are related to negative youth outcomes (Crusto et al., 2010; Roberts et al., 2013; Telman et al., 2016). Although awareness of the impact of family violence on youth has grown, there remains a lack of research on how youth recover from such experiences and the role interventions play in supporting their recovery. It is important to increase our understanding on recovery as research shows that one and a half year after referral to Child Protection Service (CPS) half of families still have to deal with family violence (Steketee et al., 2021) and half of youth maintain to experience PTS symptoms (Meijer et al., 2019). Furthermore, although it is encouraging that effect sizes for trauma treatment after family violence can be large, dropout rates are high (Cox et al., 2025), indicating not all families benefit from treatment. This indicates the importance of improving treatment strategies for these families. Because of the impact of family violence on parenting and family relationships, it could be hypothesized that treatment can be improved by adding systemic elements. Also, there is evidence that intensive formats optimize adherence to trauma treatment (Hoppen et al., 2023) and accelerate recovery (Rentinck et al., 2025; van Ee et al., 2024). However, intervention studies often lack control groups and part of the studies exclude families with unsafe home situations (Tijsseling et al., 2024). **Chapter 1** therefore introduces three central research questions: a) Which mechanisms contribute to youth's recovery after family violence?; b) Which systemic elements are needed in trauma treatment for youth exposed to family violence?; c) How can treatment be optimized for families exposed to family violence? In this dissertation family violence is defined by violence performed by family members, (ex) partners of parents, or other caregivers, and can include physical, emotional, and/or sexual abuse and neglect.

**Chapter 2** discusses how the mechanisms in Emotional Security Theory, that describes the pathways of family violence to youth psychosocial outcomes, could also serve as

underlying mechanisms in youth recovery after family violence. The chapter presents the results of a longitudinal study in which mediating pathways were tested between changes in family violence and youth PTS through youth emotional security, parental stress and parents' PTS. The sample consisted of 562 children and their parents who were referred to CPS due to signs of child abuse and / or neglect. The data included three waves of both child and parent report across a period of one and a half years. To separate intrafamilial changes from interfamilial changes, data was analyzed with Random Intercept Cross-lagged Panel Modeling. Results showed that recovery in children, in terms of reduction of PTS symptoms, was preceded by decreases in child-reported, but not parent-reported, decreases in family violence. In contrast to the study hypotheses, parental stress, parent PTS and child emotional security were not identified as mechanisms that play a role in the pathway from family violence to youth recovery. Exploratory analyses suggested that decreases in parental stress predicted decreases in parent-reported family violence. In this chapter the importance of restoring family safety for youth recovery is emphasized. Addressing parental stress may help to reduce family violence.

**Chapter 3** is the study protocol of a randomized controlled trial on the effectiveness of a multicomponent intervention that aims to address the consequences of family violence on an individual and family level and in an accelerated format. The study compares this intervention, Family-based Intensive Trauma Treatment (FITT), to Intensive Trauma Treatment without family members participating (ITT) and non-intensive trauma treatment as usual (TAU). Youth could participate if they experienced PTS symptoms, lived with parents or other caregivers and had previously experienced family violence. Recurrent incidents of family violence were not an exclusion criteria but the acute safety in the family needed to be established. After informed consent, youth were assigned to FITT, ITT, or TAU. It was hypothesized that FITT would lead to a stronger reduction in PTS symptoms and emotional insecurity and a greater improvement in family, parent and youth functioning, than ITT. It was also hypothesized that FITT would lead to a faster reduction in PTS symptoms and emotional insecurity, and a faster improvement in family, parent and youth functioning, than TAU. Outcomes were monitored before treatment, after four weeks and after four months of treatment. The design, the outcome measures, the statistical analysis plan, and the treatment protocols of this multicentered trial are presented in this chapter.

**Chapter 4** presents the results of the RCT that was introduced in the previous chapter. The study sample consisted of 35 adolescents with PTS symptoms after family violence. The sample size was lower than expected. This was partly due to fear of professionals for worsening of symptoms and fear of youth to be randomized to non-intensive trauma treatment while they preferred a high-intensive treatment format. The sample included families facing multifaceted challenges. Results of the linear mixed models showed no

conclusive evidence for the superiority of FITT, compared to ITT, regarding PTS symptoms, emotional insecurity, knowledge of trauma-informed parenting, and secondary outcomes. Repeated measures ANOVA showed that FITT resulted in faster PTS symptom reduction than TAU, four weeks after the start of treatment ( $p < .001$ ,  $\eta^2 = .24$ ). About 71% of FITT participants, who were diagnosed with PTS disorder at pretreatment, lost their diagnosis at follow-up. Superiority of FITT over TAU was not found for emotional insecurity and secondary outcome measures. This study showed preliminary indications that FITT is a tolerable treatment for families exposed to family violence.

**Chapter 5** covers the qualitative study on youth's perspectives on treatment outcomes, key components of intensive trauma treatment with and without family components, and barriers and facilitators for treatment success. Nine youth participated in the interviews, five receiving FITT and four ITT. Youth reported reductions in PTS symptoms, improvements in knowledge on trauma and family violence, improved regulation skills, and increases in motivation and confidence. Youth receiving FITT also reported improvements regarding parents' understanding and support and decreases in the level of family conflicts. Youth receiving ITT also reported negative outcomes, such as being more withdrawn. Perceived key elements were the combination and variety of trauma-focused components, therapist rotation and in FITT also a supportive context in which family safety and parent mental health were addressed. Support for parents themselves were mentioned as important. Attitudes toward participation of parents were mixed in the ITT condition, ranging from feeling no hope to fear for parents' responses. Identified facilitators were some stability in life, support from parents, school, work, and friends, especially those with a similar background, an open attitude and, motivation for the trauma-focused therapies. Mentioned barriers for treatment success were ongoing threats at home, fear for the trauma-focused therapies and insufficient aftercare.

The dissertation concludes with **Chapter 6**, which presents the general discussion and includes the answers on the three central questions, the limitations of the studies and recommendations for clinical practice and future research. It also describes the importance of reducing the level of family violence, from the perspective of youth, to recover from PTS. The chapter also reveals that intensive trauma treatment with systemic elements is tolerable and according to youth may improve parent functioning and family safety. Furthermore, it shows how intensifying treatment can optimize treatment effects, in terms of treatment adherence and rapid reductions of PTS symptoms. The chapter further emphasizes the importance of including youth perspectives in evaluating treatment and the necessity of addressing youth's considerations on inclusion of family members in treatment. Recommendations include better screening on family safety, addressing parental stress, considering adding family components, separating youth and parent perspective of

family violence in research and following up on the role of peers in treatment for youth, It concludes with the importance of a trauma-informed healthcare system to improve treatment possibilities for youth with PTS symptoms after family violence.

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## Supplementary materials

### Chapter 2

#### *Amendments Preregistration*

During the process of analyzing the data we amended the following:

1. We replaced autoregressive latent trajectory with structural residuals, with the random intercept cross-lagged panel model, given the better fit with a three-wave design (Mund & Nestler, 2019).
2. Our initial plan was to combine the CTS2 and CTS-PC by transforming the scores into z-scores. To perform the RI-CLPM it was necessary to use the original scores. Therefore we used the number of year incidents instead, similar to previous studies with the same dataset (Lünnemann et al., 2019).
3. To better compare the different perspectives on family violence, we added the CTS2 to the variable child-reported family violence. Now child as well as parent-reported family violence represent child abuse and interparental violence.
4. We used the SIS instead of the SIMS because the age range of the SIS corresponded with the age range of the other measurements. The SIS is a measure for children between 8 and 18 years, whereas the SIMS is a measure for parents with children between 3 and 13 years old.

**Supplementary Table 1.** Correlation Coefficients, Means and Standard Deviations between Family Violence, Child outcomes and Parental stressors

| Variables                | Mean  | SD    | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    |
|--------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1. Family violence PR 1  | 46.02 | 59.72 | -     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 2. Family violence PR 2  | 21.31 | 29.30 | .53** | -     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 3. Family violence PR 3  | 11.58 | 18.53 | .27** | .53** | -     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 4. Family violence CR 1  | 26.22 | 42.23 | .35** | .17*  | .19*  | -     |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 5. Family violence CR 2  | 16.59 | 27.82 | .09   | .11   | .11   | .52** | -     |       |       |       |       |       |       |       |       |       |       |       |       |
| 6. Family violence CR 3  | 8.95  | 16.07 | .17*  | .14   | .17*  | .49** | .55*  | -     |       |       |       |       |       |       |       |       |       |       |       |
| 7. Child PTS 1           | 53.71 | 12.02 | .17*  | .06   | .02   | .35** | .24** | .08   | -     |       |       |       |       |       |       |       |       |       |       |
| 8. Child PTS 2           | 51.14 | 11.64 | .16*  | .08   | .05   | .49** | .43** | .14   | .63** | -     |       |       |       |       |       |       |       |       |       |
| 9. Child PTS 3           | 50.56 | 11.29 | .17*  | .07   | .10   | .41** | .37** | .23** | .50** | .71** | -     |       |       |       |       |       |       |       |       |
| 10. Parental stress 1    | 53.4  | 25.79 | .07   | .17** | .11   | .09   | .13   | .10   | .13   | .09   | -.05  | -     |       |       |       |       |       |       |       |
| 11. Parental stress 2    | 49.82 | 23.23 | .03   | .23** | .15** | .07   | .13   | .06   | .01   | .06   | -.02  | .67** | -     |       |       |       |       |       |       |
| 12. Parental stress 3    | 48.20 | 23.84 | -.01  | .21** | .17** | -.02  | .11   | .08   | -.03  | .00   | .06   | .60** | .76** | -     |       |       |       |       |       |
| 13. Parent PTS 1         | 47.19 | 5.50  | .49** | .19** | .14** | .17*  | .06   | .08   | .23** | .12   | .15*  | .32** | .22** | .19** | -     |       |       |       |       |
| 14. Parent PTS 2         | 46.06 | 5.33  | .35** | .30** | .23** | .16*  | .12   | .14   | .12   | .17*  | .16*  | .28** | .37** | .29** | .74** | -     |       |       |       |
| 15. Parent PTS 3         | 45.35 | 5.15  | .28** | .24** | .24** | .13   | .06   | .03   | .16*  | .12   | .20** | .23** | .29** | .34** | .65** | .79** | -     |       |       |
| 16. Emotional security 1 | 63.77 | 15.43 | .24** | .06   | -.03  | .36** | .17*  | .07   | .52** | .39** | .36** | .11   | .06   | -.06  | .35*  | .20** | .19** | -     |       |
| 17. Emotional security 2 | 59.54 | 14.14 | .13   | .22** | .06   | .13   | .20** | .02   | .32** | .46** | .39** | .05   | .07   | -.03  | .14   | .05   | .05   | .55** | -     |
| 18. Emotional security 3 | 58.60 | 14.49 | .21   | .18*  | .08   | .27** | .18*  | .23*  | .22*  | .36** | .53** | .04   | .16*  | .11   | .14   | .15*  | .13   | .54** | .72** |

Note. CR = child-report, PR = parent-report.

\* $p < .05$ , \*\* $p < .01$

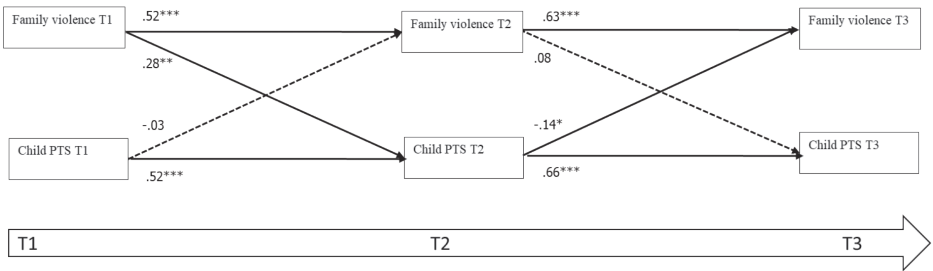
**Supplementary Table 2.** Model fit indices of all Cross-Lagged Panel Models and Random Intercept Cross-Lagged Panel Models without covariates

| Model                                            | $\chi^2$ | df | p     | CFI   | TLI   | RMSEA |
|--------------------------------------------------|----------|----|-------|-------|-------|-------|
| <b>Violence &amp; Child PTS</b>                  |          |    |       |       |       |       |
| Parent-report, CLPM                              | .42      | 4  | .981  | 1.000 | 1.032 | .000  |
| Parent-report, RI-CLPM                           | .09      | 1  | .764  | 1.000 | 1.033 | .000  |
| Child-report, CLPM                               | 18.94    | 4  | < .01 | .962  | .858  | .114  |
| Child-report, RI-CLPM                            | .98      | 1  | .323  | 1.000 | 1.001 | .000  |
| <b>Violence, Parental stress &amp; Child PTS</b> |          |    |       |       |       |       |
| Parent-report, CLPM                              | 23.17    | 9  | < .01 | .987  | .949  | .048  |
| Parent-report, RI-CLPM                           | 4.72     | 3  | .193  | .998  | .981  | .029  |
| Child-report, CLPM                               | 40.42    | 9  | <.001 | .969  | .877  | .071  |
| Child-report, RI-CLPM                            | 4.16     | 3  | .245  | .999  | .986  | .024  |
| <b>Violence, Parent PTS &amp; Child PTS</b>      |          |    |       |       |       |       |
| Parent-report, CLPM                              | 22.56    | 9  | <.01  | .992  | .968  | .047  |
| Parent-report, RI-CLPM                           | 1.53     | 3  | .676  | 1.000 | 1.010 | .000  |
| Child-report, CLPM                               | 26.66    | 9  | <.01  | .988  | .951  | .053  |
| Child-report, RI-CLPM                            | 1.53     | 3  | .674  | 1.000 | 1.012 | .000  |
| <b>Violence, Security &amp; Child PTS</b>        |          |    |       |       |       |       |
| Parent-report, CLPM                              | 36.36    | 9  | <.001 | .962  | .847  | .068  |
| Parent-report, RI-CLPM                           | 2.43     | 3  | .487  | 1.000 | 1.009 | .000  |
| Child-report, CLPM                               | 52.93    | 9  | <.001 | .936  | .744  | .132  |
| Child-report, RI-CLPM                            | 2.88     | 3  | .411  | 1.000 | 1.002 | .000  |

**Supplementary Table 3.** Results of the Chi-square difference test of all Cross-Lagged Panel Models and Random Intercept Cross-Lagged Panel Models without covariates

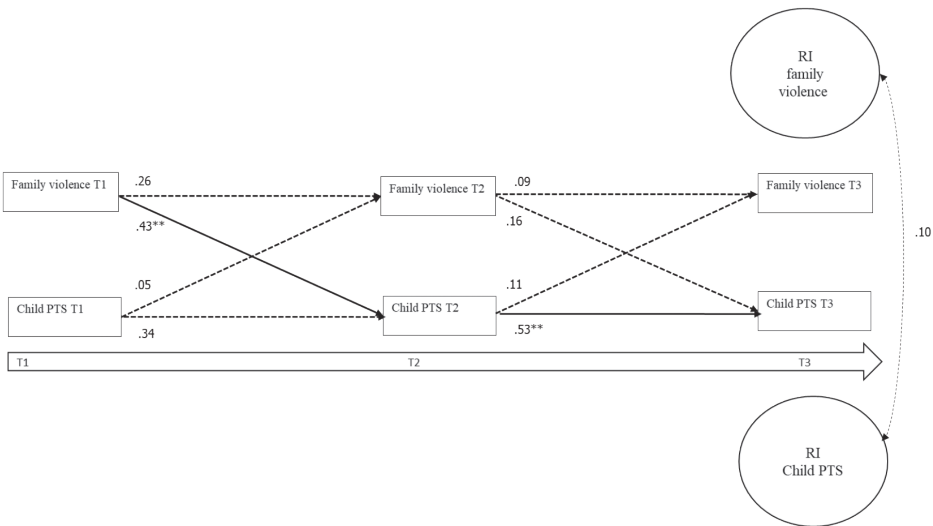
| Comparing models CLPM versus RI-CLPM                   | $\Delta\chi^2$ | $\Delta df$ | p     |
|--------------------------------------------------------|----------------|-------------|-------|
| Violence parent-report & Child PTS                     | .231           | 3           | .973  |
| Violence child-report & Child PTS                      | 15.552         | 3           | <.01  |
| Violence parent-report, Parental stress & Child PTS    | 14.655         | 6           | <.05  |
| Violence child-report, Parental stress & Child PTS     | 31.106         | 6           | <.001 |
| Violence parent-report, Parent PTS & Child PTS         | 15.71          | 6           | <.05  |
| Violence child-report, Parent PTS & Child PTS          | 19.72          | 6           | <.01  |
| Violence parent-report, Emotional Security & Child PTS | 26.169         | 6           | <.001 |
| Violence child-report, Emotional Security & Child PTS  | 49.893         | 6           | <.001 |

**Supplementary Figure 1.** Cross-lagged panel model for child-reported family violence & child PTS across three measurement occasions



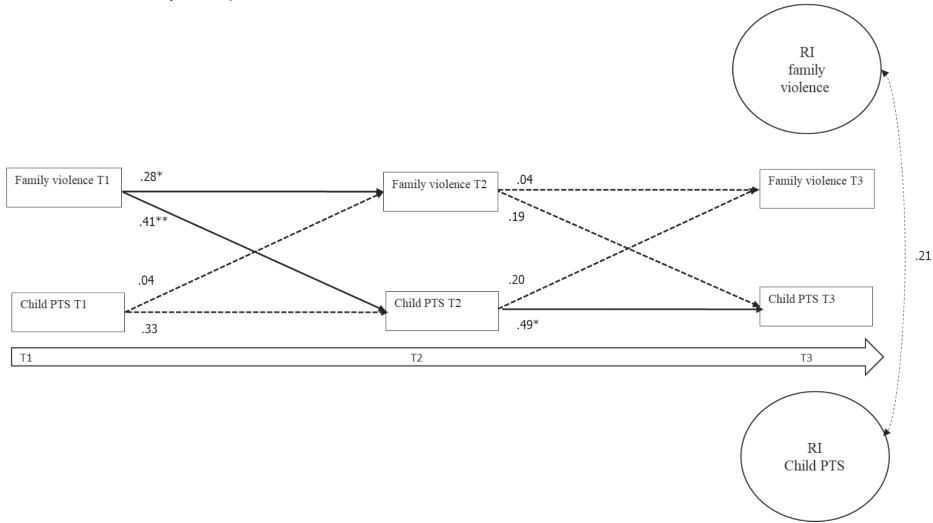
Note. CFI = .96, TLI = .86, RMSEA = .11. Dotted lines represent non-significant effects.  
\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

**Supplementary Figure 2.** Random-Intercept cross-lagged panel model for child-reported family violence & child PTS across three measurement occasions.



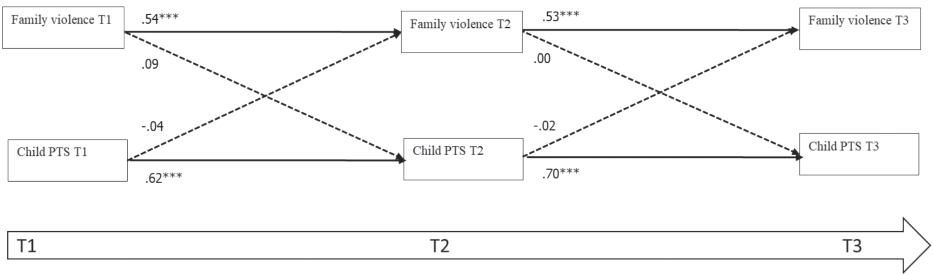
Note. CFI = 1.00, TLI = 1.00, RMSEA = .00. Dotted lines represent non-significant effects.  
\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

**Supplementary Figure 3.** Random-Intercept cross-lagged panel model for child-reported family violence & child PTS across three measurement occasions. Model is adjusted for child’s sex and age, income and family composition



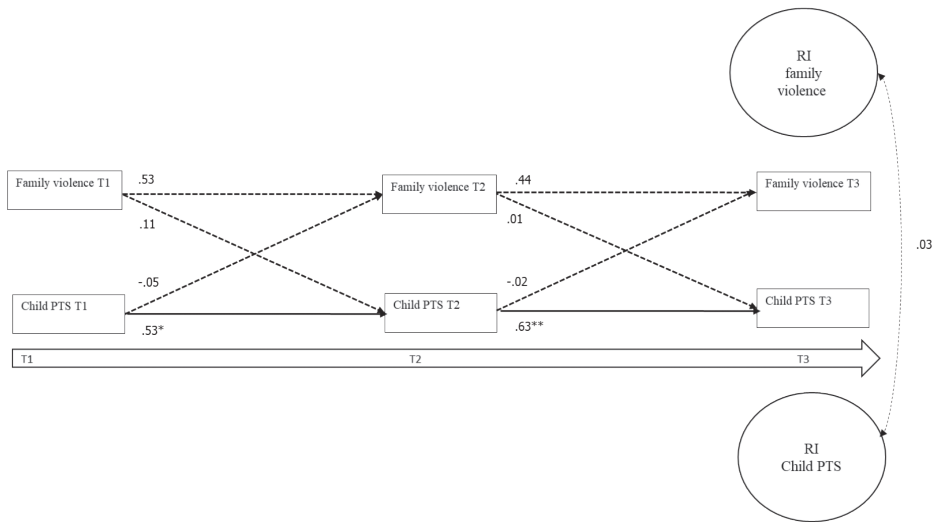
Note. CFI = .98, TLI = .97, RMSEA = .05. Dotted lines represent non-significant effects.  
 \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

**Supplementary Figure 4.** Cross-lagged panel model for parent-reported family violence & child PTS across three measurement occasions



Note. CFI = 1.00, TLI = 1.03, RMSEA = .00. Dotted lines represent non-significant effects.  
 \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

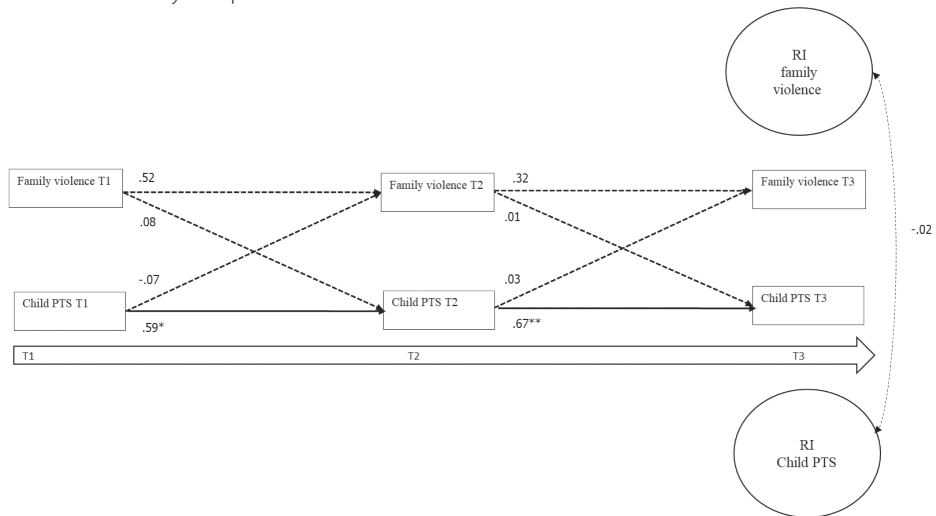
**Supplementary Figure 5.** Random-Intercept cross-lagged panel model for parent-reported family violence & child PTS across three measurement occasions



Note. CFI = 1.00, TLI = 1.03, RMSEA = .00. Dotted lines represent non-significant effects.

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

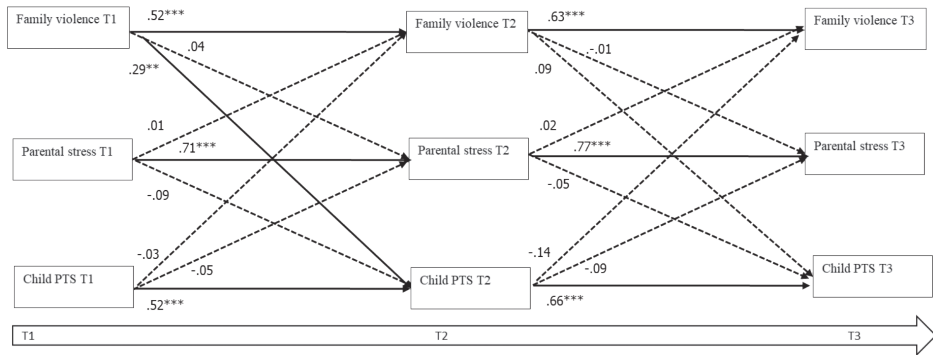
**Supplementary Figure 6.** Random-Intercept cross-lagged panel model for parent-reported family violence & child PTS across three measurement occasions. Model is adjusted for child's sex and age, income and family composition



Note. CFI = .98, TLI = .97, RMSEA = .05. Dotted lines represent non-significant effects.

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

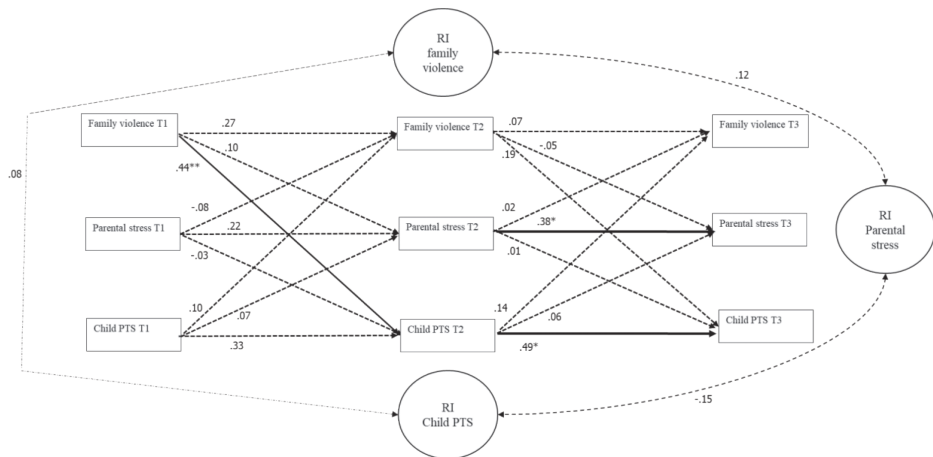
**Supplementary Figure 7.** Cross-lagged panel analysis for child-reported family violence, parental stress & child PTS across three measurements occasions



Note. CFI = .97, TLI = .88, RMSEA = .07. Dotted lines represent non-significant effects.

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

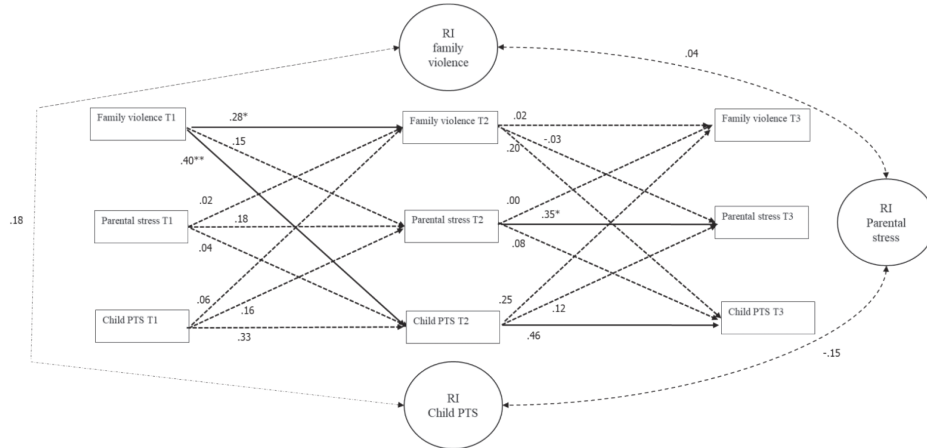
**Supplementary Figure 8.** Random Intercept cross-lagged panel model for child-reported family violence, parental stress & child PTS across three measurements occasions



Note. CFI = 1.00, TLI = .99, RMSEA = .02. Dotted lines represent non-significant effects.

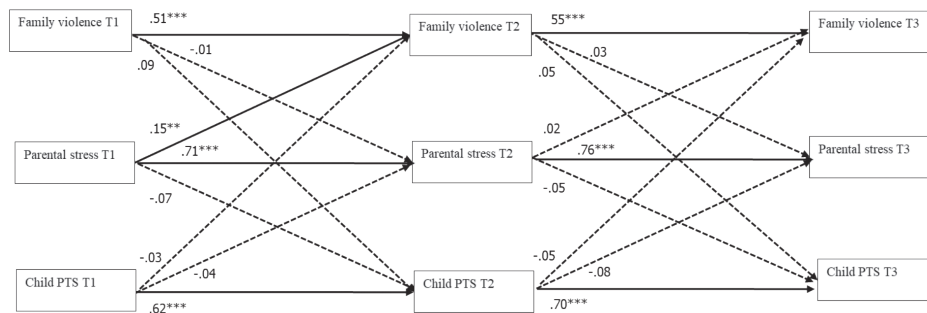
\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

**Supplementary Figure 9.** Random Intercept cross-lagged panel model for child-reported family violence parental stress & child PTS across three measurements occasions. Model is adjusted for child's sex and age, income and family composition



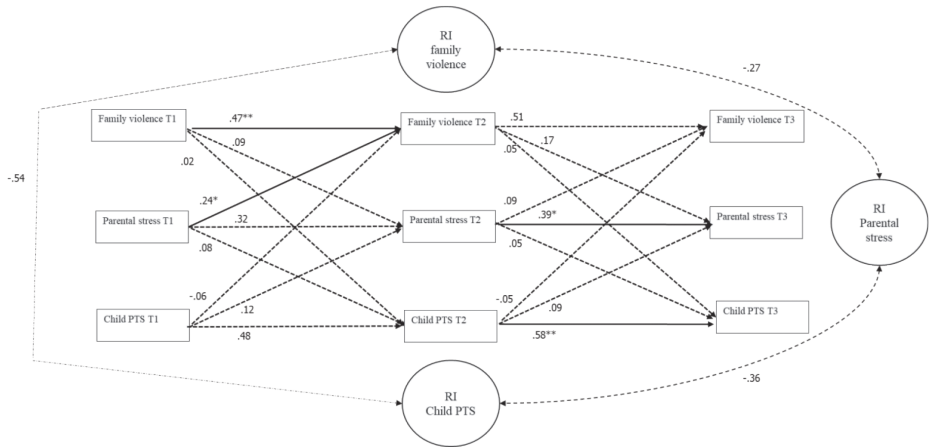
Note. CFI = .98, TLI = .96, RMSEA = .05. Dotted lines represent non-significant effects.  
 $*p < .05$ ,  $**p < .01$ ,  $***p < .001$

**Supplementary Figure 10.** Cross-lagged panel analysis for parent-reported family violence, parental stress & child PTS across three measurements occasions



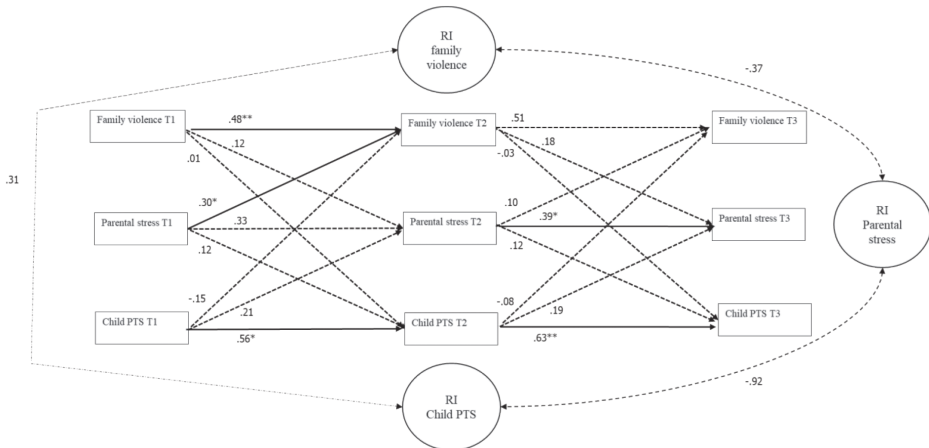
Note. CFI = .99, TLI = .95, RMSEA = .05. Dotted lines represent non-significant effects.  
 $*p < .05$ ,  $**p < .01$ ,  $***p < .001$

**Supplementary Figure 11.** Random Intercept Cross-lagged panel analysis for parent-reported family violence, parental stress & child PTS across three measurements occasions.



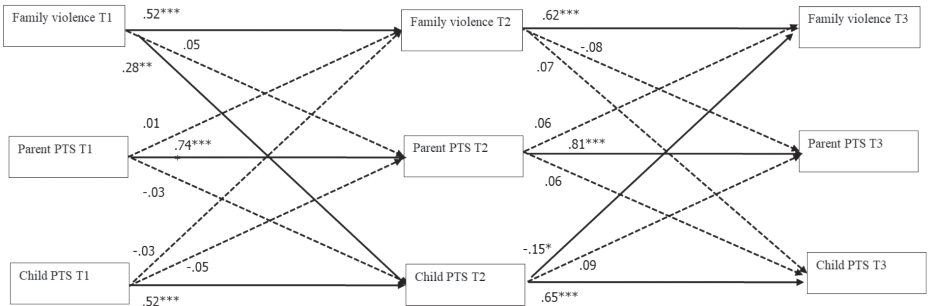
Note. CFI = 1.00, TLI = .98, RMSEA = .03. Dotted lines represent non-significant effects.  
 \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

**Supplementary Figure 12.** Random Intercept Cross-lagged panel analysis for parent-reported family violence, parental stress & child PTS across three measurements occasions. Model is adjusted for child's sex and age, income and family composition



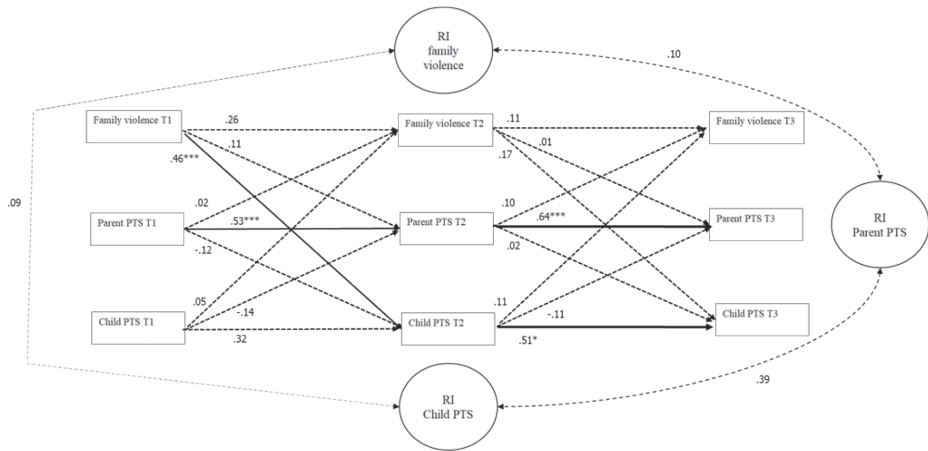
Note. CFI = .98, TLI = .96, RMSEA = .05. Dotted lines represent non-significant effects.  
 \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

**Supplementary Figure 13.** Cross-lagged panel analysis for child-reported family violence, parent PTS & child PTS across three measurements occasions



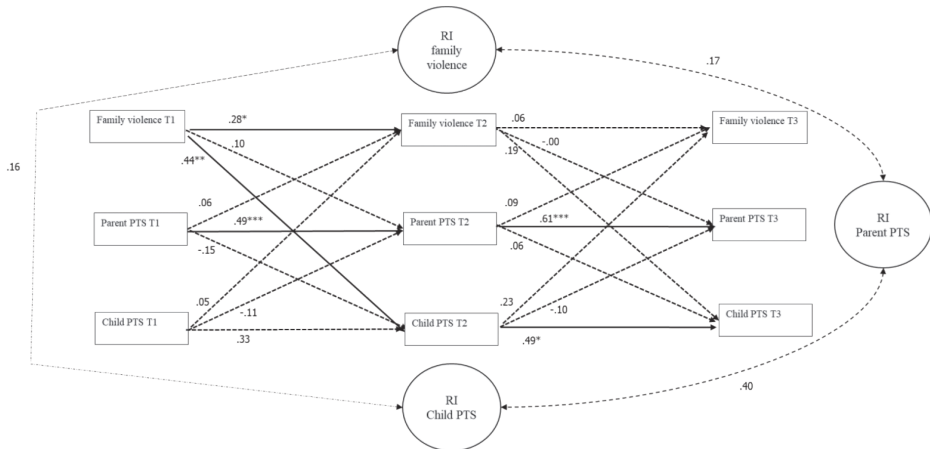
Note. CFI = .99, TLI = .95, RMSEA = .05. Dotted lines represent non-significant effects.  
\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

**Supplementary Figure 14.** Random Intercept cross-lagged panel model for child-reported family violence, parent PTS & child PTS across three measurements occasions



Note. CFI = 1.00, TLI = 1.01, RMSEA = .00. Dotted lines represent non-significant effects.  
\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

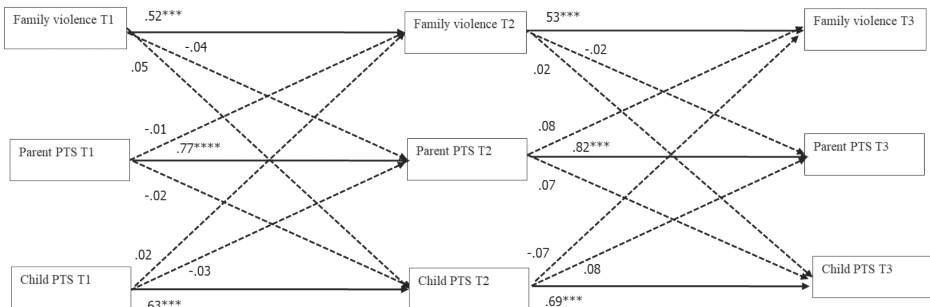
**Supplementary Figure 15.** Random Intercept cross-lagged panel model for child-reported family violence, parent PTS & child PTS across three measurements occasions. Model is adjusted for child's sex and age, income and family composition.



Note. CFI = .98, TLI = .97, RMSEA = .05. Dotted lines represent non-significant effects.

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

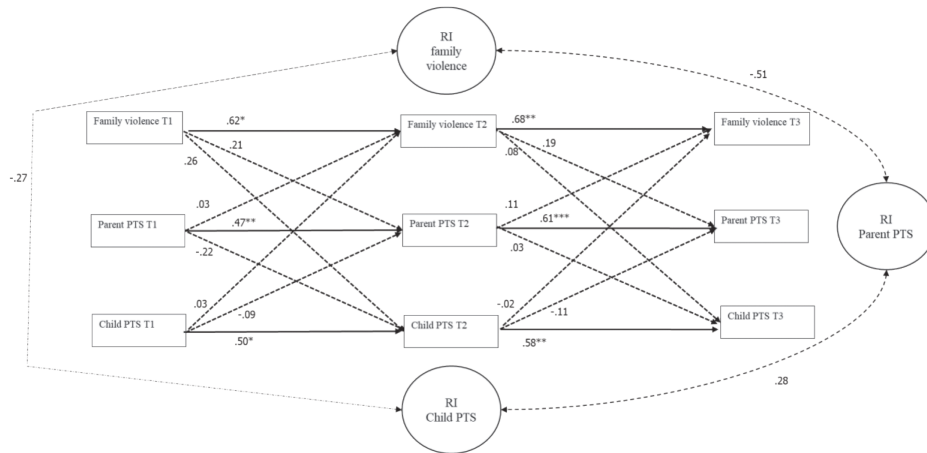
**Supplementary Figure 16.** Cross-lagged panel analysis for parent-reported family violence, parent PTS & child PTS across three measurements occasions



Note. CFI = .99, TLI = .97, RMSEA = .04. Dotted lines represent non-significant effects.

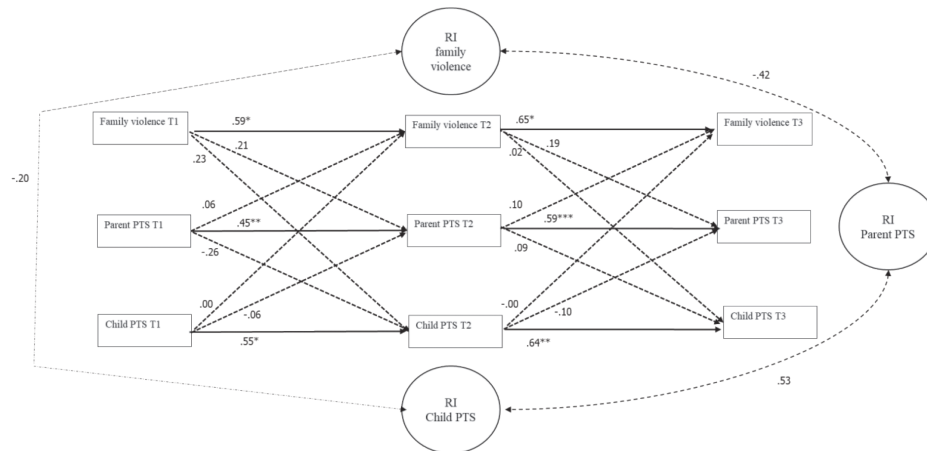
\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

**Supplementary Figure 17.** Random Intercept cross-lagged panel model for parent-reported family violence, parent PTS & child PTS across three measurements occasions



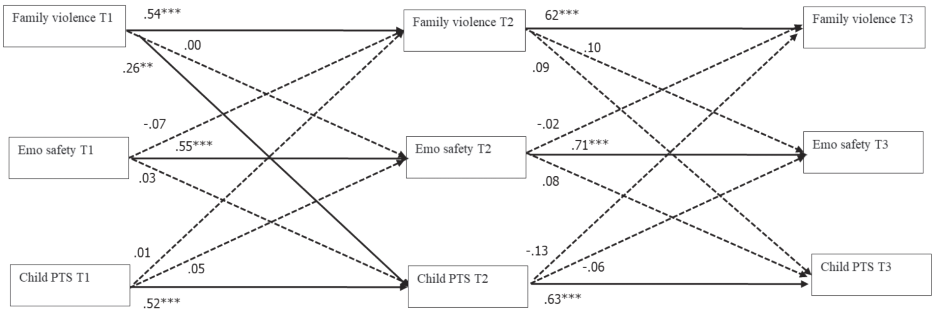
Note. CFI = 1.00, TLI = 1.01, RMSEA = .00. Dotted lines represent non-significant effects.  
 \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

**Supplementary Figure 18.** Random Intercept cross-lagged panel model for parent-reported family violence, parent PTS & child PTS across three measurements occasions. Model is adjusted for child's sex and age, income and family composition



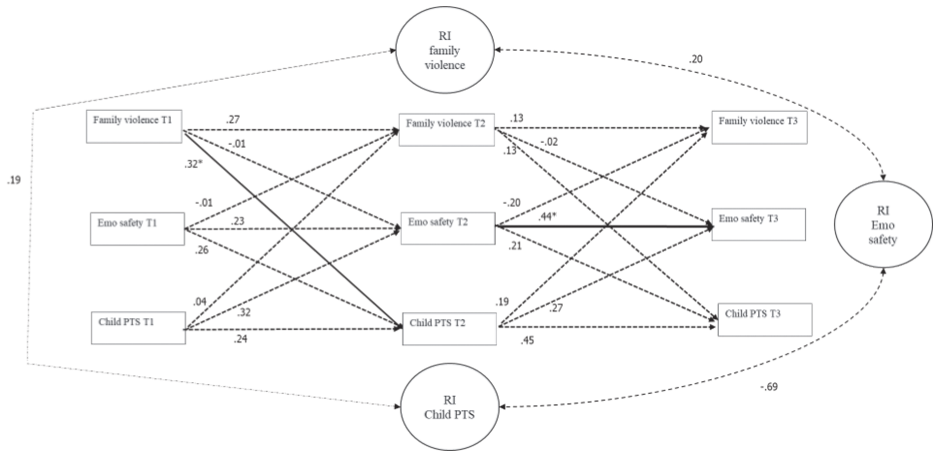
Note. CFI = .98, TLI = .97, RMSEA = .05. Dotted lines represent non-significant effects.  
 \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

**Supplementary Figure 19.** Cross-lagged panel analysis for child-reported family violence, emotional security & child PTS across three measurements occasions



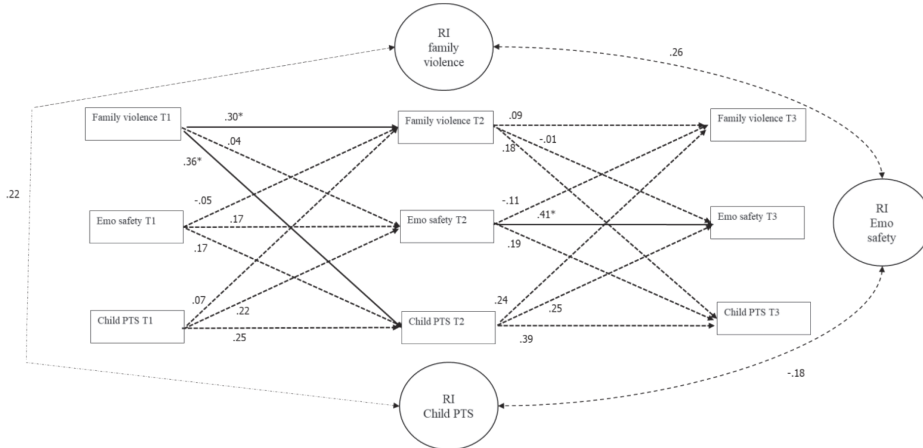
Note. CFI = .94, TLI = .74, RMSEA = .13. Dotted lines represent non-significant effects.  
 \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

**Supplementary Figure 20.** Random Intercept cross-lagged panel model for child-reported family violence, emotional security & child PTS across three measurements occasions



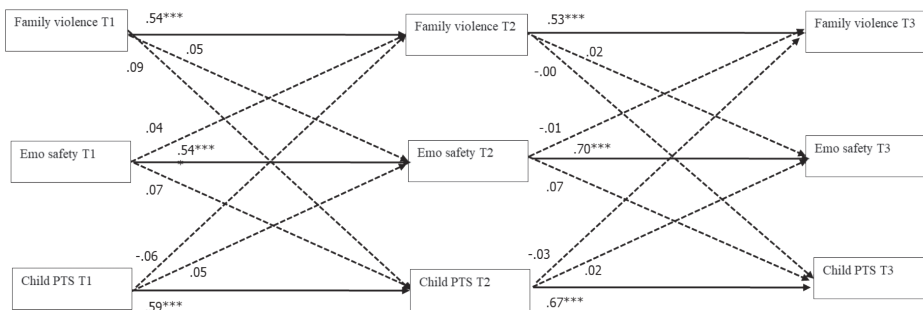
Note. CFI = 1.00, TLI = 1.00, RMSEA = .00. Dotted lines represent non-significant effects.  
 \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

**Supplementary Figure 21.** Random Intercept cross-lagged panel model for child-reported family violence, emotional security & child PTS across three measurements occasions. Model is adjusted for child's sex and age, income and family composition



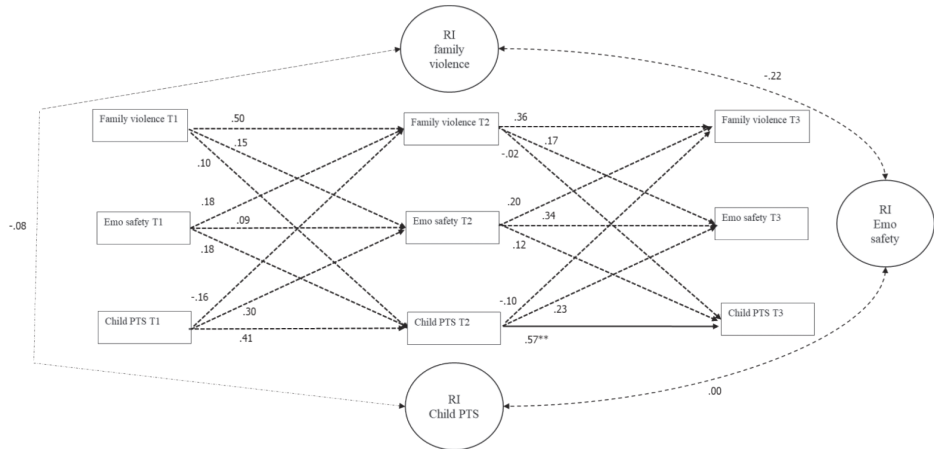
Note. CFI = .98, TLI = .97, RMSEA = .05. Dotted lines represent non-significant effects.  
 \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

**Supplementary Figure 22.** Cross-lagged panel analysis for parent-reported family violence, emotional security & child PTS across three measurements occasions



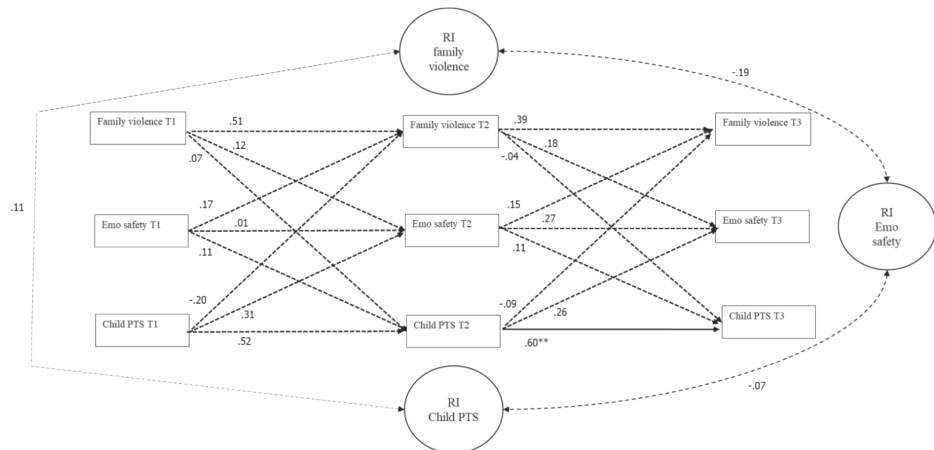
Note. CFI = .96, TLI = .85, RMSEA = .07. Dotted lines represent non-significant effects.  
 \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

**Supplementary Figure 23.** Random Intercept cross-lagged panel model for parent-reported family violence, emotional security & child PTS across three measurements occasions



Note. CFI = 1.00, TLI = 1.01, RMSEA = .00. Dotted lines represent non-significant effects  
 $*p < .05$ ,  $**p < .01$ ,  $***p < .001$

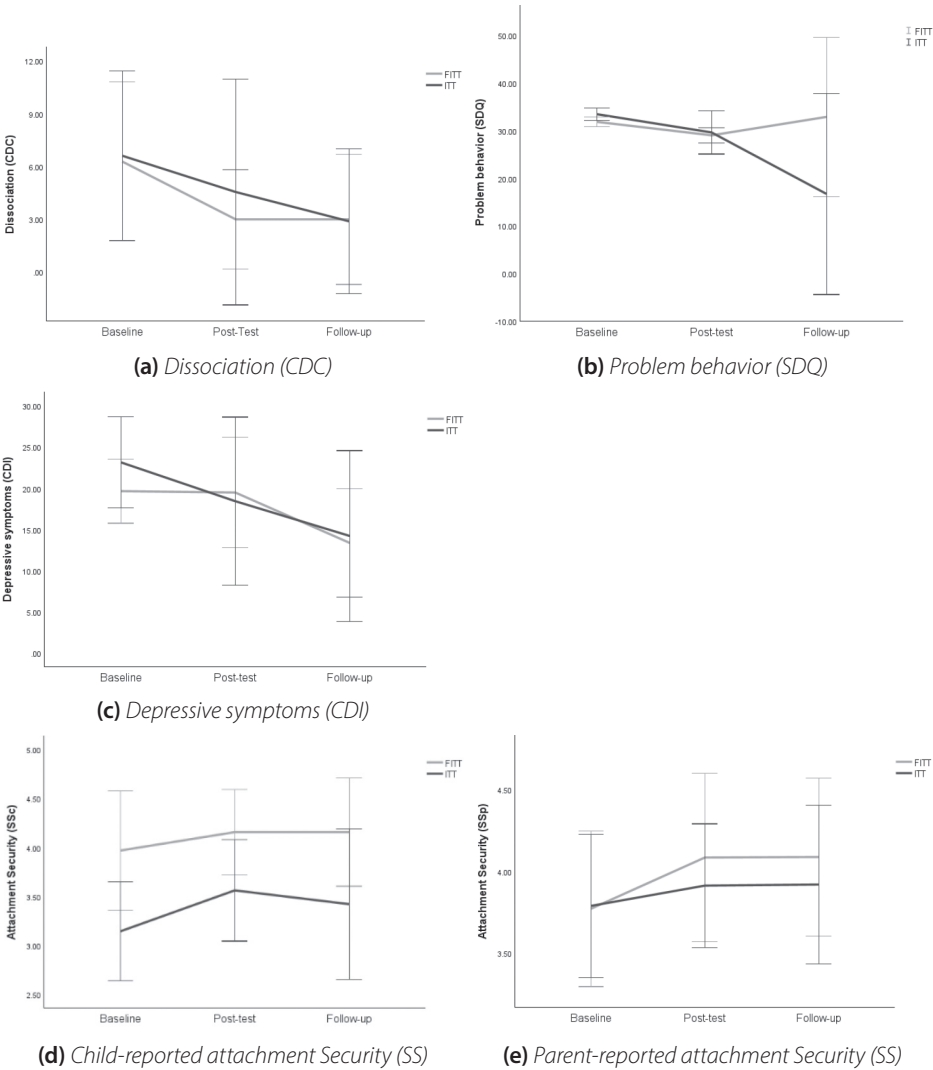
**Supplementary Figure 24.** Random Intercept cross-lagged panel model for parent-reported family violence, emotional security & child PTS across three measurements occasions. Model is adjusted for child's sex and age, income and family composition

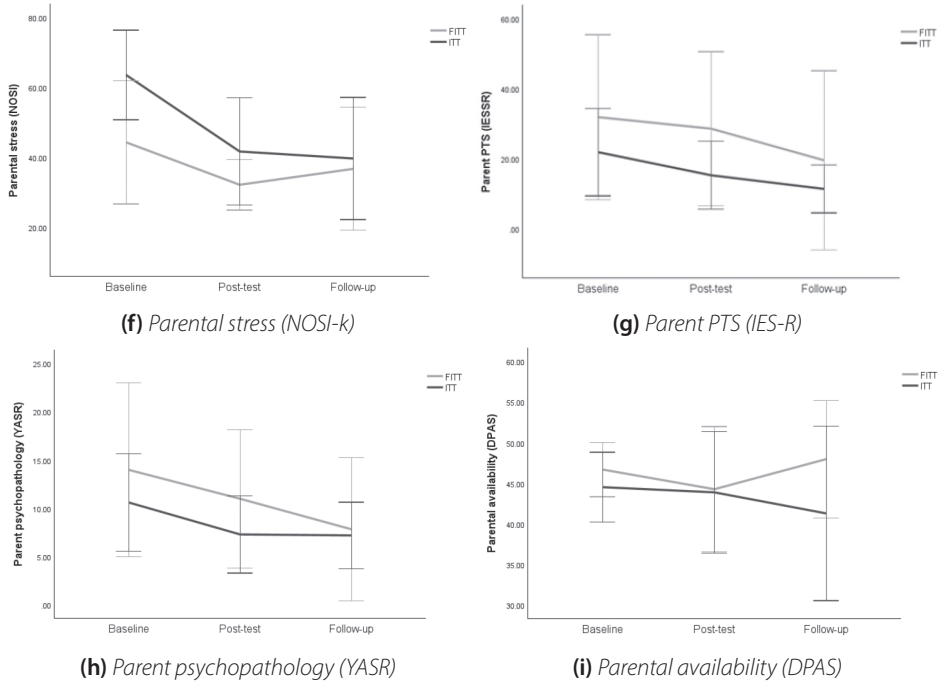


Note. CFI = .98, TLI = .96, RMSEA = .05. Dotted lines represent non-significant effects.  
 $*p < .05$ ,  $**p < .01$ ,  $***p < .001$

Chapter 4

Supplementary Figure 1 Changes in secondary outcomes FITT and ITT

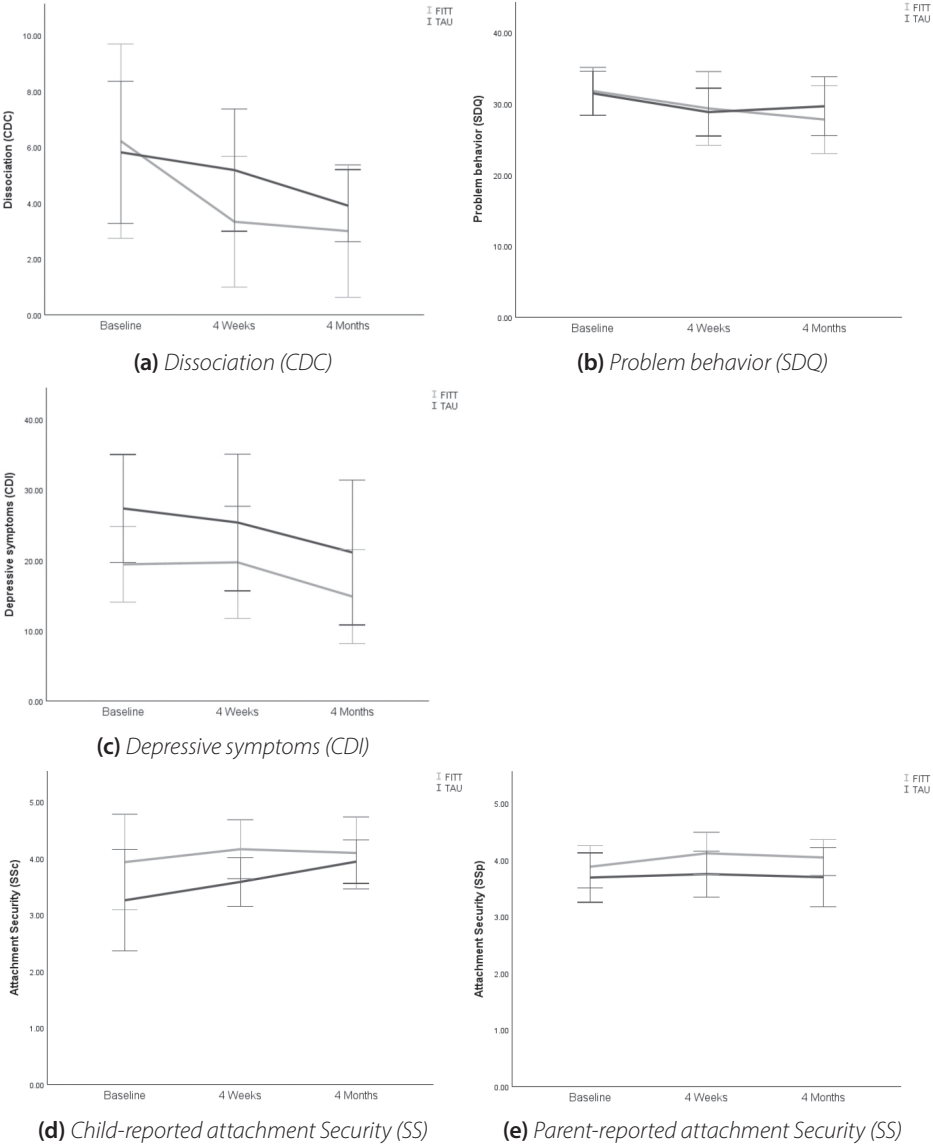


**Supplementary Figure 1** Changes in secondary outcomes FITT and ITT (*continued*)**Supplementary Table 1** Linear mixed models for secondary outcomes FITT & ITT

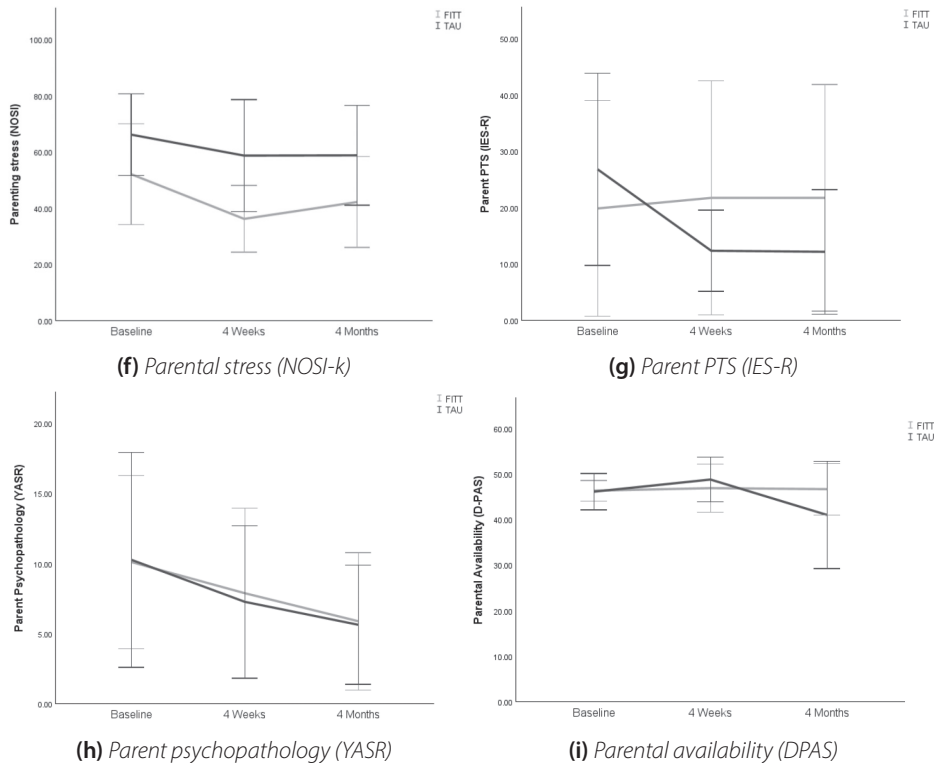
|                             | Time |       |          | Time x Condition |     |          |
|-----------------------------|------|-------|----------|------------------|-----|----------|
|                             | F    | p     | ES $R^2$ | F                | p   | ES $R^2$ |
| <b>Child functioning</b>    |      |       |          |                  |     |          |
| CDC                         | 1.58 | .22   | .06      | .08              | .92 | .01      |
| CDI                         | 3.16 | .05   | .11      | .28              | .76 | .01      |
| SDQ <sup>p</sup>            | 2.16 | .13   | .09      | .58              | .57 | .03      |
| <b>Parent-child</b>         |      |       |          |                  |     |          |
| SS <sup>c</sup>             | .92  | .40   | .03      | .12              | .89 | .2       |
| SS <sup>p</sup>             | .78  | .47   | .03      | .14              | .87 | -.19     |
| <b>Parental functioning</b> |      |       |          |                  |     |          |
| NOSI                        | 4.38 | < .05 | .17      | .79              | .46 | .10      |
| IES-R                       | 1.59 | .21   | .05      | .08              | .92 | .07      |
| YASR                        | 2.10 | .13   | .06      | .23              | .79 | .0       |
| DPAS                        | .13  | .88   | .01      | .50              | .61 | .04      |

<sup>c</sup>= child report, <sup>p</sup>= parent report, ES = effect size in  $R^2$  (effect size based on amount of variance explained in the outcome variance)

**Supplementary Figure 2** Changes in secondary outcomes FITT and TAU



**Supplementary Figure 2** Changes in secondary outcomes FITT and TAU (*continued*)

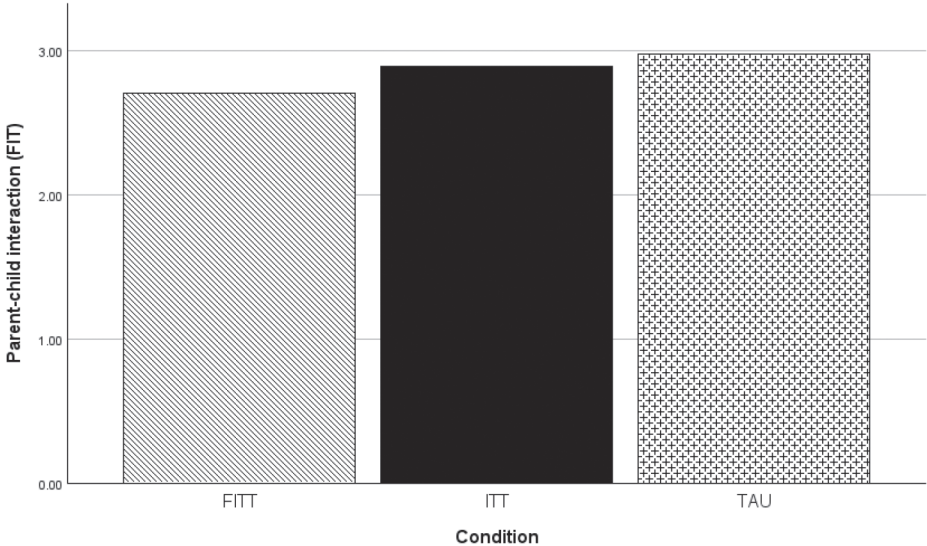


Supplementary Table 2 Linear mixed models for secondary outcomes FITT & TAU

|                           | Four weeks after start of treatment |      |     |                  |      |      | Four months after start of treatment |      |     |                  |      |     |
|---------------------------|-------------------------------------|------|-----|------------------|------|------|--------------------------------------|------|-----|------------------|------|-----|
|                           | Time                                |      |     | Time x Condition |      |      | Time                                 |      |     | Time X condition |      |     |
|                           | F                                   | p    | ES  | $\eta^2$         | F    | p    | F                                    | p    | ES  | $\eta^2$         | F    | p   |
| Child functioning         |                                     |      |     |                  |      |      |                                      |      |     |                  |      |     |
| CDC                       | 5.87                                | <.05 | .28 | .18              | 3.42 | .08  | 10.94                                | <.01 | .41 | .11              | .75  | .04 |
| CDI                       | .65                                 | .43  | .04 | .04              | .65  | .43  | 9.76                                 | <.01 | .41 | 0                | 1.00 | .00 |
| SDQ <sup>p</sup>          | 5.33                                | <.05 | .09 | .02              | .53  | .48  | 7.88                                 | <.05 | .14 | .16              | .69  | .02 |
| Parent-child              |                                     |      |     |                  |      |      |                                      |      |     |                  |      |     |
| SS <sup>c</sup>           | 1.26                                | .28  | .08 | .04              | .01  | .93  | 4.14                                 | .06  | .04 | .68              | .42  | .04 |
| SS <sup>p</sup>           | 2.20                                | .17  | .06 | .02              | .30  | .59  | 1.69                                 | .22  | .02 | .22              | .66  | .02 |
| Parental functioning      |                                     |      |     |                  |      |      |                                      |      |     |                  |      |     |
| NOSI                      | 5.29                                | <.05 | .15 | .04              | 1.71 | .21  | 3.25                                 | .09  | .02 | .16              | .70  | .03 |
| IES-R                     | 2.35                                | .14  | .06 | .04              | .57  | .46  | 4.43                                 | .05  | .01 | .12              | .73  | .01 |
| YASR                      | 1.50                                | .05  | .14 | .02              | 0    | 1.00 | 6.51                                 | <.05 | .04 | .45              | .51  | .02 |
| DPAS                      | .95                                 | .34  | .05 | .05              | 6.03 | <.05 | .06                                  | .81  | .01 | .29              | .59  | .01 |
| Trauma-informed knowledge | 14.35                               | <.01 | .24 | .06              | 4.42 | .05  | 15.07                                | <.01 | .09 | 4.23             | .06  | .03 |

Pooled results repeated measures ANOVA, <sup>c</sup>= child report, <sup>p</sup>= parent report, ES = effect size in partial eta square,  $\eta^2$  = partial eta square, bold = significant after Holms-Bonferonni correction. This correction was performed for PTS symptoms (CRIS, TSCC), and emotional security (SIS, SIFS, SIMS).

**Supplementary Figure 3** Mean Family-Interaction Task



**Supplementary Table 3** Independent t-test Family-Interaction Task

|                                | 4 Weeks after start of treatment |       |     |
|--------------------------------|----------------------------------|-------|-----|
|                                | df                               | t     | p   |
| Parent-child interaction (FIT) |                                  |       |     |
| FITT versus TAU                | 11                               | -1.33 | .21 |
| FITT versus ITT                | 11                               | -.99  | .06 |

## Author contributions

### Chapter 2

Conceptualization: [Fictorie, V., Jonkman, C., Schuengel, C., Steketee, M.]; Methodology: [Fictorie, V., de Moor, M. H. M., Xerxa, Jonkman, C.]; Formal analysis and investigation: [Fictorie, V., de Moor, M. H. M.]; Writing - original draft preparation: [Fictorie, V.]; Writing - review and editing: [Fictorie, V., Schuengel, C., de Moor, M. H. M., Xerxa, Y., Tierolf, B., Jonkman, C. S., Visser, M., Steketee, M.]

### Chapter 3

Conceptualization: [Fictorie, V., Jonkman, C., Visser, M., Schuengel, C., Steketee, M.]; Methodology: [Fictorie, V., Jonkman, C., Vandenbosch, M., Schuengel, C., Steketee, M.]; Formal analysis and investigation: [Fictorie, V., Jonkman, C.]; Writing - original draft preparation: [Valerie Fictorie]; Writing - review and editing: [Fictorie, V., Jonkman, C., Visser, M., Schuengel, C., Steketee, M., Vandenbosch, M.]

### Chapter 4

Conceptualization: [Fictorie, V., Jonkman, C., Visser, M., Schuengel, C., Steketee, M., Hell, S.G., van der, Roos, C. de, Bicanic, I, Mooren, T.]; Methodology: [Fictorie, V., Jonkman, C., Vandenbosch, M., Schuengel, C., Steketee, M.]; Formal analysis and investigation: [Fictorie, V., Jonkman, C.]; Writing - original draft preparation: [Valerie Fictorie]; Writing - review and editing: [Fictorie, V., Jonkman, C., Visser, M., Schuengel, C., Steketee, M., Hell, S.G., van der, Roos, C. de, Bicanic, I, Mooren, T, Vandenbosch, M.]

### Chapter 5

Conceptualization: [Fictorie, V., Jonkman, C., Visser, M., Schuengel, C., Steketee, M.]; Methodology: [Fictorie, V., Jonkman, C.]; Formal analysis and investigation: [Fictorie, V., Jonkman, C.]; Writing - original draft preparation: [Fictorie, V.]; Writing - review and editing: [Fictorie, V., Jonkman, C., Visser, M., Schuengel, C., Steketee, M.]

## Acknowledgments

Eerst even terugspoelen. Zes jaar geleden begon het avontuur toen twee dromen tegelijkertijd werkelijkheid werden. Ik wilde altijd al mijn klinische werk combineren met onderzoek en beleid. Ook voelde ik een enorme drijfveer om de behandelmogelijkheden te verbeteren voor jongeren en ouders die thuis veel onveiligheid hadden ervaren. En daar was ineens de kans om de vierjarige opleiding tot klinisch psycholoog te doen bij Kenter Jeugdhulp én om als promovendus aan de Vrije Universiteit onderzoek te gaan doen naar gezinsgeweld. Ik besloot beiden te gaan doen en het bleek een ontzettend leerzame en mooie ervaring waarbij ik veel mensen heb ontmoet die mij inspireerden, motiveerden, steunden en adviseerden en bijdroegen aan het plezier in mijn dagelijks werk. Ik ben al deze mensen zeer dankbaar!

In de eerste plaats wil ik de **jongeren en hun gezinnen** bedanken die moedig hebben deelgenomen aan de verschillende studies die zijn beschreven in dit proefschrift. Ouders en kinderen die bergen vragenlijsten hebben ingevuld, mee hebben gedaan aan interviews en deel hebben genomen aan traumagerichte behandelingen, wel of niet intensief en voor de jongeren met of zonder deelname van het gezin. De woorden van de jongeren in de interviews waren van grote waarde en onderstrepen nog eens hoe ongelooflijk belangrijk het is dat onderzoekers, hulpverleners, beleidsmedewerkers en politici luisteren naar de stem van jongeren! Ook de jongeren en (pleeg)ouders die deelnamen aan één van de eerste FITT trajecten in 2018 en 2019, wil ik graag bedanken. Zij hebben ons waardevolle adviezen gegeven hoe FITT verder te optimaliseren. Ook de **jongerentaskforce van Augeo** wil ik graag bedanken voor hun wijze woorden en ideeën toen zij ons hielpen bij de interpretatie van de eerste onderzoeksresultaten.

Uiteraard wil ik ook mijn promotoren en co-promotor bedanken. **Carlo**, jouw rust en wijze vragen hielpen mij om complexe vraagstukken te doorgronden of om zelf weer te ontdekken welke richting ik op wilde. Jouw opmerking aan het begin van het traject heb ik altijd onthouden. Nadat je een stuk van mij van veel commentaar had voorzien, gaf je aan dat de hoeveelheid commentaar staat voor hoeveel het stuk voor iemand betekent. Zo heb ik het ook ervaren, je was beschikbaar, betrouwbaar en betrokken. **Majone**, ik wil jou ook heel graag bedanken voor jouw steun en inspiratie. Je gaf mij vaak een nieuw perspectief op de betekenis van de resultaten en kon mij goed helpen bij de vertaling van de resultaten voor beleid. **Caroline**, ik ben ontzettend blij dat wij elkaar zes jaar geleden hebben leren kennen en heb enorm genoten van onze intensieve samenwerking. Je was er altijd voor mij als ik steun nodig had, hielp mij om na een tegenslag weer vooruit te kijken en met je humor zorgde je voor ontspanning en plezier. Ik ben blij dat we samen weer een nieuw project zijn gestart en hoop nog lang met je samen te werken!

De leescommissie, **dr. Oosterman, prof. dr. Lindauer, prof. dr. Alink, prof. dr. Didden** en **prof. dr. Schoorl**, wil ik ook hartelijk bedanken voor het lezen van mijn proefschrift en het onderstrepen van het belang van onderzoek naar gezinnen die thuis geweld hebben meegemaakt.

Dit proefschrift was niet mogelijk geweest zonder samenwerking. De collega-instellingen die hebben bijgedragen aan de effectiviteitsstudie van FITT wil ik graag bedanken. In de eerste plaats **Sisca, Sanne** en **Lydia** van GGZ Rivierduinen. Jullie enthousiasme over FITT, ik herinner mij nog een zelfontworpen FITT tas, de zorgvuldigheid waarmee jullie de dataverzameling aanpakten en de kritische vragen die jullie stelden, waren van onschatbare waarde. **Iva** en **Trudy**, ik wil jullie bedanken voor jullie vertrouwen in FITT en jullie inspirerende drijfveer in de zorg voor getraumatiseerde gezinnen. Uiteraard wil ik ook de vele coördinatoren van het Kinder-en Jeugdtraumacentrum bedanken die een enorme steun voor mij waren gedurende de gehele dataverzameling: **Manon, Welmoed, Tielke, Vera, Eline, Afke, Fieke, Annemarië, Mathilde, Ingeborg** en **Lisa**, bedankt voor jullie betrokkenheid bij de dataverzameling. Ook wil ik alle behandelaren bedanken die verantwoordelijk waren voor de uitvoering van FITT. In het kader van mijn promotie-onderzoek hebben we bijna 100 **behandelaren** getraind in FITT! De woorden van de jongeren in het onderzoek zeggen genoeg, jullie worden enorm gewaardeerd en wisten te zorgen voor een optimale therapeutische relatie in de context van *therapist rotation*. In dat kader wil ik ook de supervisors bedanken die bij het onderzoek betrokken waren en daarmee hielpen om de behandelingen optimaal uit te voeren. **Carlijn, Sanne, Irma** en **Daniëlle**, ontzettend bedankt voor de leerzame supervisiesessies! **Daniëlle** en **Manon**, ik ben jullie enorm dankbaar voor jullie input voor het psychomotorische deel van de behandeling en de trainingen die daarop volgden. **Margreet T**, bedankt voor jouw vertrouwen in FITT en dat we nu samenwerken om FITT verder in Nederland te implementeren. **Agnes**, bedankt dat je ons als onderzoekers getraind hebt in de FIT (met 1 T)!

Voor mijn tweede hoofdstuk heb ik gebruik gemaakt van data van het Verwey Jonker Instituut. Ik wil alle onderzoekers en stagiaires hartelijk bedanken voor de enorme hoeveelheid data die zij verzameld hebben. **Bas**, bedankt dat je mij wegwijs hebt gemaakt in de data. **Yliza**, ik wil jou bedanken voor het opzetten van ons data-analyseplan. **Marleen**, ontzettend bedankt voor jouw heldere uitleg, geduld en bemoedigende woorden! Wat fijn dat je zulke ingewikkelde materie zo eenvoudig kon uitleggen.

Degene die absoluut niet mag ontbreken in dit dankwoord is **Margreet**. In 2019 hebben we samen nagedacht hoe we het systemische deel van FITT nog beter konden neerzetten. Ik heb ongelooflijk veel van je geleerd. Ik bewonder jouw enorme kennis en ben je dankbaar dat je zes jaar geleden het idee opperde om samen een subsidieaanvraag in te

dienen. En dan is er nog iemand zonder wie dit onderzoek niet mogelijk was geweest: **Marjolein**. Lieve Marjolein, jij kwam ons onderzoeksteam aan het begin van het traject ondersteunen. En wat was ik onder de indruk van wat je allemaal deed. Is er iets dat jij niet kan? Ik weet niet wat ik zonder jouw doortastendheid en overzichts- en planningskills had gemoeten. Daarbij was je ook nog een ontzettend fijne en betrokken collega, dank ook voor alle heerlijke (vegan)etentjes! **Vera, Eline** en **Naomi**, jullie wil ik ook hartelijk bedanken voor alle arbeid die jullie in de dataverzameling hebben gestopt.

**Anouska** en **Sanne**, mijn paranimfen, in 2018 is het FITT avontuur met jullie begonnen. Anouska, jij voelde net als ik dat we onze traumabehandeling moesten intensiveren om jongeren te helpen voor wie het huidige aanbod niet toereikend was. Jij zette je voor de volle 100% in om het eerste FITT traject tot een succes te maken. Sanne, jij hebt mij continu uitgedaagd om het protocol steeds maar weer te verbeteren op basis van de nieuwste wetenschappelijke inzichten. Je was ook nog eens supervisor en trainer in het onderzoek! Altijd positief, constructief en eerlijk, ik heb veel van je geleerd. Ik ben jullie dankbaar dat jullie er altijd voor mij waren en mij steeds vol enthousiasme hebben aangemoedigd! Onze presentatie met z'n drieën in San Diego was voor mij het startschot van een intensieve periode, maar eerst volgde de korte roadtrip met jullie, waar ik enorm van heb genoten!

Het grootste deel van mij week bestaat uit het klinische werk op het KJTC in Haarlem, waar ik sinds drie jaar inhoudelijk behandelcoördinator ben. Een plek waar ik mij ontzettend thuis voel en dagelijks met een team aan de slag mag met wie ik hetzelfde doel deel, gezinnen helpen te herstellen na ingrijpende gebeurtenissen, en die net als ik geloven in de veerkracht van deze gezinnen. Haarlemmers en Heemskerkers, jullie zijn heel belangrijk voor mij: **Afke, Agnes, Anja, Anne-Marit, Anouska, Bryan, Claire, Colinda, Daniëlle, Eva, Fieke, Greta, Isabel, Jacqueline, Jeanine, Jip, Kirsten, Lara, Lidwien, Lizzy, Marjolein, Marjolijn, Marthe, Merijn, Roos, Sanne, Suzanne, Tielke, Wendy** en **Yolanda**. **Carola**, jij bent de rots in de branding op het KJTC, wat zouden we zonder je moeten! **Hetty**, jij bent er al die jaren geweest, als werkbegeleider, praktijkbegeleider en nu als mede IBC'er, hebt mij gesteund, in de smiezen gehouden én de ruimte gegeven, dankjewel!

De eerste vier jaar van dit traject heb ik samen met mijn mede gios'en beleefd: **Anke, Anneloes, Cor, Danny, Els, Ethel, Gerlinde, Irene, Jalila, Judith, Maarten Willem, Marieke, Miriam, Nienke, Tessa**. Jullie waren zo'n fijne opleidingsgroep, slim, scherp, grappig en ontspannen. Bedankt dat jullie altijd zo positief waren dat het goed ging komen! **Patty**, jij hebt mij als docent begeleid bij het onderzoeksdeel van de KP opleiding en mij geholpen om de juiste keuzes te maken. Ik heb veel aan je advies gehad om niet alleen naar de bergen werk voor mij te kijken maar ook af en toe achterom te kijken om te zien wat ik allemaal al gedaan had.

Lieve vrienden, wat was het fijn dat jullie er al die jaren waren, ook al was er soms weinig tijd om elkaar te zien, ik heb genoten van de momenten die we wel samen hadden! Lieve **Irene** en **Jasmijn**, jullie vriendschap, al bijna dertig jaar, betekent zoveel voor mij, jullie kennen mij door en door, en als we samen zijn dan is het zo vertrouwd, ik kijk uit naar een volgend weekendje samen. **Barbara** en **Sander**, wat ben ik blij dat ik jullie meer dan twintig jaar geleden heb leren kennen. Ik geniet van de tijd met z'n tweetjes, viertjes, of met z'n achten met de kinderen erbij. Barbara je bent er altijd voor mij. Lieve **Anna**, wat was je al die jaren steunend en positief, dat heeft mij enorm geholpen. Onze schrijfdagen op de Veluwe was wat ik nodig had om dit af te ronden. Nu al zin om dit nog een keer te doen! En dan nog de jaarlijkse weekendjes weg met jou en vrienden **Annika, Bas, Chris, Eline, Jordy, Nanda, Rutger** en mijn **Guido**. Wat een feest al twintig jaar deze traditie en zo gezellig met die inmiddels elf vrolijk, spelende kinderen erbij! Rutger, ontzettend bedankt voor het maken van de mooie omslag en al jouw creatieve ideeën! **Sam** en **Lis**, dank voor jullie vriendschap en de gezelligheid met die twee lieve jongens van jullie. De afgelopen jaren stonden voor mij ook in het tekenen van hardlopen, er is weinig wat ik zo graag doe als rennen, liefst kilometers lang, alleen of met anderen. Het hardlopen, met name de marathontrainingen, heeft mij geleerd om door te zetten, taak voor taak uit te voeren en een lange adem te hebben, allemaal vaardigheden die ook belangrijk waren voor mijn werk de afgelopen jaren! **Lars, Noor, Lotte, Robert Jan** en alle andere AV23 lopers en trainers, bedankt voor de kop over kop trainingen op de baan, het strijden op de wedstrijden en de ontspannen duurlopen!

En dan mijn familie, die er onvoorwaardelijk voor mij is. **Jan, Tiny, Tim, Olga, Cleo** en **Zeno**, wat geniet ik van de momenten samen, jullie zijn ontzettend belangrijk voor mij. Dan mijn broer **Sjors, Esther** en jullie **Lucas, Juliën, Quinn** en **Femke**, bedankt dat jullie er altijd voor mij zijn en wat geniet ik als ik de zes kinderen samen zie lachen en hoor kletsen. **Yentl**, jij bent het toonbeeld van veerkracht en ik heb genoten van de maanden dat we intensief samen waren, mijn dappere, lieve nicht. Dan mijn allerliefste **moeder**, je staat altijd voor mij klaar, weet mij altijd van wijze raad te voorzien en hebt een onvoorwaardelijk vertrouwen in mij. Je hebt mij geleerd sterk en optimistisch te zijn en oog te hebben voor anderen. Helaas heeft mijn **vader** mijn promotie niet mee kunnen maken. Maar ik ben dankbaar voor alle fijne, goede jaren en weet dat hij trots is, want dat vertelde hij mij vaak. Hij heeft mij, ondanks dat hij zelf de kans op onderwijs niet gehad heeft, veel geleerd over de wereld, het belang van solidariteit en hoop. Zijn motto 'het komt goed', draag ik met mij mee.

Tot slot, mijn gezin, **Guido, Vanya** en **Aaron**, wat een plezier en ontspanning brengen jullie in mijn leven. Met jullie samen zijn, geeft mij zoveel geluk. Vanya en Aaron, toen ik begon met het onderzoek waren jullie nog zo klein en nu zijn jullie twee lieve, grote tieners. Ik ben heel blij met jullie en heel trots op wie jullie zijn! Guido, al 23 jaar mijn geliefde. Wat

beteken je veel voor mij, ook de afgelopen zes jaar was je mijn grootste steun en rots in de branding. Je luistert, zorgt, regelt, coacht, relativeert, adviseert, rent met mij mee, laat mij lachen en hebt zoveel geduld. Ik geniet van het samen zijn en ben dankbaar dat je er altijd voor mij bent.

## Curriculum vitae

Valerie Fictorie was born on 24 August 1984 in Amsterdam in the Netherlands. In 2002 she obtained her VWO diploma at the Spinoza Lyceum, in Amsterdam. Afterwards she studied Psychology at the University of Amsterdam. She obtained her Bachelor diploma in 2005 and continued with a master in clinical developmental psychology. After her internship in a healthcare center for youth with mild intellectual disabilities, she graduated cum laude in 2006. She began her career as a psychologist within the same healthcare center. In her work, she primarily encountered children who had been traumatized, often as a result of family violence, and many of them were no longer living at home. It was during this period that her interest in trauma and family violence began to develop. From 2010 to 2012, she completed the postdoctoral training to become a healthcare psychologist and afterwards she became the coordinator of the diagnostics and therapy department. During the same period, she began to further specialize in trauma and family violence. In 2016, she made the transition to the Child and Youth Trauma Center at Kenter Youthcare. As part of her role, she participated in the Multidisciplinary Center for Child Abuse and Neglect, where professionals from various organizations—such as the police and Safe Home—worked together on cases involving acute or chronic family violence. Since 2019 Valerie is registered as an EMDR Europe practitioner. In 2018 Valerie and her colleagues at the Child and Youth Trauma Center developed the intervention Family-based Intensive Trauma Treatment (FITT). At the end of 2019 they received a grant for studying the effectiveness of FITT and Valerie started her PhD. From 2020 to 2023 she also followed the postdoctoral training to become a clinical psychologist. In 2024 she received her diploma and started her work as coordinator of the Child and Youth Trauma Center in Haarlem. Besides her work as a clinical psychologist, she works as a researcher for the VU Amsterdam and as a trainer for the National Education Center for Child Abuse.

## List of publications

Fictorie, V., Jonkman, C., Visser, M., Vandenbosch, M., Steketee, M., & Schuengel, C. (2022). Effectiveness of a high-intensive trauma-focused, family-based therapy for youth exposed to family violence: Study protocol for a randomized controlled trial. *Trials*, 23(1), 46. <https://doi.org/10.1186/s13063-021-05981-4>

Fictorie, V., Schuengel, C., de Moor, M. H. M., Xerxa, Y., Tierolf, B., Jonkman, C. S., Visser, M., & Steketee, M. (2025). Recovery of children's posttraumatic stress after family violence: The role of parental stress, parents' posttraumatic stress, and emotional security. *Development and Psychopathology*, 1–12. <https://doi.org/10.1017/S0954579425100722>

Fictorie, V., Jonkman, C., Visser, M., Vandenbosch, M., van der Hell, S.G., de Roos, C., Bicanic, I., Mooren, T., Steketee, M., Schuengel, C. (2025). *The effectiveness of family-based intensive trauma treatment for adolescents*. Manuscript submitted for publication.

Fictorie, V., Jonkman, C., Visser, M., Steketee, M., Schuengel, C. (2025). *Family-based Intensive Trauma Treatment for youth with PTS symptoms after family violence: A qualitative study of youths' perspectives on treatment outcomes, key components, and barriers and facilitators for treatment success*. Under review.

Visser, M., Jonkman, C., & Fictorie, V. (2024). Huiselijk geweld en de onderliggende gezinsdynamiek. *Systeemtherapie*, 36(3), 170–183. <https://doi.org/10.5553/ST/092436312024036003004>

Visser, M., Fictorie, V., & Jonkman, C. (2025). Huiselijk geweld en het veilig maken van de gezinsrelaties. *Systeemtherapie*, 37(1), 5–21. <https://doi.org/10.5553/ST/092436312025037001002>

Westerveld, M.M., Roedoe, C., Fictorie, V., Van Dijk, J., Van Onna, M.J.R. (2025). *Intensieve traumabehandeling in Nederland voor jeugdigen met PTSS: een overzichtsartikel*. Manuscript submitted for publication.



This dissertation emphasizes the importance of family safety in recovery of youth exposed to family violence. It revealed that reductions of PTS in youth were preceded by decreases in child-reported family violence and that parental stress played a role in decreasing parent-reported family violence. In contrast to theory and previous studies, parental stressors and emotional security were not mechanisms in the relationship between family violence and youth PTS. To address the effects of family violence at the family level and optimize treatment effects, the effectiveness of a family-based intensive trauma treatment was tested. Although it remains unclear whether family-based intensive trauma treatment improves treatment outcomes, it appeared to be promising in rapid reduction of PTS symptoms and optimizing treatment adherence. Both the family-based component and the intensive format were valued by youth themselves and improvements were reported, even in youth exposed to ongoing family conflicts. Better screening on family safety and a trauma-informed health care system may improve treatment possibilities for youth with PTS symptoms after family violence.