Cognitive therapy as an early treatment for children with PTSD: the outcomes for parents' own PTSD, depression, anxiety and general mental health.

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Abstract

Post-traumatic stress disorder (PTSD) experienced by children can have a large impact on the wider family. The National Institute for Health and Care Excellence (NICE, 2018) recommend that parents are involved in their child's PTSD treatment. Studies have found that parents themselves also report high levels of PTSD and other mental health symptoms but few have explored whether these symptoms reduce following their child receiving trauma-focused CBT. In this study, parents (N=29) whose children (ages 8-17 years) were randomly assigned to either 10 sessions of Cognitive Therapy for PTSD (CT-PTSD) or a wait-list control condition (WL) completed the Post Traumatic Stress Diagnostic Scale (PDS), the Patient Health Questionnaire (PHQ-9; to measure depression), the Generalised Anxiety Disorder Questionnaire (GAD-7), and the General Health Questionnaire (GHQ-28; to measure general mental health) for pre-post comparison. Parents whose children were allocated to CT-PTSD reported greater improvements on self-report PTSD, depression, anxiety and general mental health, relative to the WL condition. This trial provides preliminary support for the efficacy of CT-PTSD delivered to children for reducing parent PTSD, depression, anxiety and general mental health symptoms. Replication is needed as well as further exploration of parent factors and frequency of parental involvement required to predict improvements.

Keywords: cognitive therapy, trauma treatment, parent PTSD, parent depression, parent anxiety, parent outcomes after child psychotherapy.

Introduction

A traumatic event is defined as exposure to actual or threatened death, serious injury, or sexual violence either through direct or first-hand experience, witnessing the event, learning that the event happened to a close family member or friend, or experiencing repeated or extreme exposure to aversive details of the traumatic event (APA, 2013). A recent prevalence study found that a lifetime prevalence of trauma exposure reported at age 18 was 31.1 per cent and out of this trauma exposed sample, the lifetime prevalence of PTSD by age 18 was 25 per cent (Lewis et al., 2019). PTSD can have significant detrimental effects on school and academic functioning as well as mental health going into adulthood (Yule et al., 2000).

Research has suggested that Trauma-focused Cognitive Behavioural Therapy (TF-CBT) is the most effective treatment for young people exposed to trauma and is therefore one of the recommended therapies for children (National Institute for Health and Care Excellence [NICE], 2018). TF-CBT has shared components of any CBT intervention which includes psychoeducation (including the role of thoughts in behaviour and emotion), skills building (relaxation, affect modulation, cognitive coping) and modifying behaviours to challenge thoughts (through graded exposure or behaviour experiments). TF-CBT has additional components that include working through a trauma narrative, in vivo mastery of trauma reminders and cognitive processing.

Parents are recommended to be included in the treatment of children and adolescents with PTSD as they are thought to be integral agents of change in the recovery process (Cohen et al., 2010). Parent involvement can vary between TF-CBT interventions but may include: receiving summaries of session content, psychoeducation, parenting skills training, advice on

supporting the child's work out of session, and managing own trauma symptoms. Previous work hypothesises that TF-CBT improves parents' hope about their child's recovery, reinforces helpful parenting skills, develops feelings of competence, and teaches skills that parents can use to manage their own stress, maladaptive thoughts and emotional reactions (Cohen, Mannarino and Deblinger, 2016). Additionally, participation may lead to the encouragement of their children to practise new skills, more helpful parent-child communication, and stronger familial attachments (Cohen, Mannarino and Deblinger, 2006).

Research has shown that parents of children with PTSD also experience PTSD symptoms themselves. Parental past trauma has been found to have an association with children's PTSD and depression symptoms (Montgomery & Foldspang, 2005; Yehuda & Bierer, 2008), and a meta-analysis of 32 studies has found a significant association between parent posttraumatic stress symptoms (PTSS) and child PTSS (Morris, Gabert-Quillen & Delahanty, 2012).

Traumatised parents can either become overprotective (arising from their own concerns about their children's safety) or find it difficult to tolerate their children's expression of fear, anxiety and helplessness (Scheeringa & Zeanah, 2001). Thus, parents may adopt intrusive and insensitive parenting practices, reflecting a preoccupied attachment style, or may instead withdraw from interactions with the child, reflecting an avoidant attachment style (Flykt, Kanninen, Sinkkonen, & Punamäki, 2010; Van Ee, Kleber, Jongmans, Mooren, & Out, 2016). A qualitative review found that parental trauma can prevent children from developing a secure base because the child feels overwhelmed and uncontained by the parent (De Haene Grieten, & Verschueren, 2010).

As such, the "relational PTSD and recovery" model proposes that parent responsiveness to the child is dependent on their own wellbeing. When a parent is aware of their child's needs and can act upon them, this leads to an improvement in wellbeing for the

child (Alisic, Boeije, Jongmans and Kleber, 2012). This is confirmed by studies that found that supportive, secure and wise parenting practices can be a protective factor for children's mental health, resilience and development (Feldman, Vengrober, Eidelman-Rothman, & Zagoory-Sharon, 2013; Qouta, Punamäki, Miller, & El Sarraj, 2008).

Most studies that have measured parent PTSS and depression symptoms have found that both mediate treatment outcomes for the child (Weems & Scheeringa, 2013). However, only a few studies have investigated whether parent symptoms significantly change over the course of their child's therapy. One study demonstrated that parents who participated in group TF-CBT with their children have shown significant improvements in the parents' self-reported PTSS (Deblinger, Stauffer & Steer, 2001). Two studies have found that parents in the TF-CBT group do make improvements in their depression symptoms but this effect is not significantly different to parents in the WL or TAU control conditions (Holt, Jensen & Wentzel-Larsen, 2014; Tutus, Keller, Sachser, Pfeiffer & Goldbeck, 2017). One study has found that TF-CBT delivered to children was superior to WL control at reducing parent anxiety (Carrion, Kletter, Weems, Berry & Rettger, 2013).

Cognitive Therapy for PTSD (CT-PTSD) (Ehlers et al. 2005), adapted by Smith, Perrin, Yule and Clark (2010) for working with children and young people, is considered a form of TF-CBT. CT-PTSD is based on Ehlers and Clark's (2000) cognitive model of PTSD and treatment programme (Ehlers et al. 2005). CT-PTSD is considered theory-based and two factors are central to this model. Firstly, there are individual differences in both the trauma memory representation and the appraisal processes in relation to the trauma. Secondly, CT-PTSD is formulation-driven which means that the model is used to develop an individualised understanding of the child's difficulties. This is then used as a guide to challenging unhelpful cognitions and developing useful strategies that promote change.

A recent systematic review (Martin, Everett, Skowron & Zalewski, 2019) concluded that there were some preliminary findings to suggest that TF-CBT can lead to a decrease in parent mental health symptoms (which included depression, anxiety, PTSD, trauma cognitions and parent emotional responses) but more research is required to investigate this further.

The purpose of this study was to investigate the effects of individual child CT-PTSD on parent PTSD, depression, anxiety and general wellbeing. This intervention was delivered two to six months post-trauma. It was hypothesised that CT-PTSD would be superior to WL in reducing parental symptoms of PTSD, depression, anxiety and general mental health difficulties. Those allocated to wait list received CT-PTSD at the end of the wait period if clinically appropriate.

Method

Study design

This current study examines parent/carer data collected in a single-blind, stratified (by gender, symptom severity on Child PTSD Symptoms Scale [CPSS; Foa, Johnson, Feeny & Treadwell, 2001] and pre-treatment diagnosis) randomised controlled trial. The RCT (Meiser-Stedman et al., 2017) demonstrated superiority of CT-PTSD over wait-list control in reducing PTSD, depression and anxiety symptoms in children which were maintained at 6 month and 12 month follow up. All study participants and their legal guardians gave their informed written consent. The design was between groups (CT-PTSD versus WL) and within-subjects (baseline versus post-treatment).

Participants

The child and parent/carer participants were recruited through multiple sources including mental health clinics, family doctors, schools, adverts in health clinics, and

emergency departments. Children were eligible to take part in the original trial if PTSD was their main presenting problem, they were between 8 and 17 years old, and were fluent in English. To be eligible, children had to meet ICD-10 PTSD criteria. A total of 69 children were screened, and of those 26 did not meet inclusion criteria, 12 declined to take part and two could not be contacted. For every child that took part one of their parents was also invited into the study. The parents are the participants that made up the sample in this present study. Only one parent completed the assessments but provided demographic information about both parents, if known.

Procedure

Randomisation and assessments

Child participants with their parents were randomised to CT-PTSD or WL. Participants were assessed prior to randomisation (pre-treatment) and at 11 weeks (post-treatment). Post-treatment interviews were conducted by blinded researchers. Assessors did not contribute to any of the intervention delivery or work in any of the areas the intervention was being delivered.

An abbreviated version of the original flowchart showing participant progress throughout the study is presented in Figure 1.

Cognitive Therapy for PTSD (CT-PTSD)

CT-PTSD is a treatment approach (Ehlers et al., 2003) based on the cognitive model of PTSD (Ehlers & Clark, 2000), and adapted for young people as outlined in the treatment manual developed by Smith et al. (2010). In this study, up to ten, 90-minute sessions were delivered individually to the child. Therapy sessions were discontinued when, in discussion with the family, it was deemed that there were no further PTSD symptoms to address. CT-PTSD combines cognitive restructuring with reliving, and the following treatment

components were included: psycho-education, activity scheduling/reclaiming life, imaginal reliving, cognitive restructuring, revisiting the site of the trauma, stimulus discrimination with respect to traumatic reminders, direct work with nightmares, image transformation techniques and behavioural experiments. Relaxation or other arousal reducing techniques were not included in this treatment approach. For each session, parents were either: not involved in the session, involved in joint work with the child or were offered a parent only session. Data were collected on how much time was spent in the joint- or parent-only sessions, per child session.

Measures of parental mental health

The Post-traumatic Stress Diagnostic Scale (PDS), a self-report measure, assessed the severity of PTSD symptoms experienced by parents at pre-treatment and post-treatment. The PDS has high internal consistency and test-retest reliability, high diagnostic agreement with SCID, and good sensitivity and specificity (Foa, Cashman, Jaycox, & Perry, 1997).

The Patient Health Questionnaire – 9 items (PHQ-9), a self-report measure, assessed the symptoms of depression experienced by parents at pre-treatment and post-treatment. It has excellent internal consistency ($\alpha = 0.89$), good test-retest reliability, good construct validity as demonstrated by a strong association of increasing severity scores and worsening functioning on 6 SF-20 scales. A score of 10 or above had a sensitivity and specificity of 88% (Kroenke, Spitzer & Williams, 2001).

The Generalised Anxiety Disorder – 7 items (GAD-7), a self-report measure, assessed the symptoms of anxiety experienced by parents at pre-treatment and post-treatment. It has excellent internal consistency ($\alpha = 0.92$), good test-retest reliability (intraclass correlation = 0.83), and good construct, convergent and factorial validity (Spitzer, Kroenke, Williams & Lowe, 2006).

The General Health Questionnaire – 28 items (GHQ-28), a self-report measure, assessed emotional distress experienced by parents. It has high test-retest reliability (Robinson & Price, 1982), excellent interrater reliability ($\alpha = 0.9-0.95$) and high internal consistency (Failde, Ramos & Fernandez-Palacin, 2000).

Data Analysis

An intention-to-treat approach was adopted for the analysis of all outcome variables. All outcome variables were continuous, and a multiple imputation procedure was used to account for data lost through drop out. Where there were missing data on specific items within questionnaires person mean imputation (van Ginkel et al., 2010) was used. When whole questionnaires were missing, multiple imputation via SPSS was conducted. Both baseline and post-treatment data for all outcome measures were entered into the model as dependent variables and predictors. Treatment condition (either CT-PTSD or WL) was entered as a predictor but not as a dependent variable. In total, five datasets were generated and their pooled estimates when possible.

Linear regression models were used for all outcome variables. Post-intervention scores were considered the dependent variables, and baseline scores (in order to adjust for any baseline differences) and condition were considered independent variables. All analyses were conducted on a split file multiple imputation dataset. Pooled statistics were unavailable for the reporting of the ANOVA therefore, the range of each statistic for the five different datasets was reported. Between-groups (CT-PTSD vs. WL) and within-subjects (pre– post) effect sizes were calculated (Cohen's *d*) for all outcome measures.

Results

Parent characteristics

The study sample comprised 29 parents of children who took part in a study that investigated the effectiveness of CT-PTSD delivered within two to six months of the initial traumatic event (Meiser-Stedman et al., 2017). A post hoc power calculation was conducted using G*Power software (Faul, Erdfelder, Lang & Buchner, 2007; Faul, Erdfelder, Buchner & Lang, 2009). The calculation revealed a power of 0.88 to detect an effect size of 0.3 (small effect based on previous research) at a significance level of 0.05.

The majority of parents involved in completing the measures were mothers (86.2 per cent). Although only 6.9 per cent of parent participants were fathers, demographic information about the fathers (provided by either the fathers themselves, or the other parent that completed the interview) was provided in 72 per cent of cases. The highest proportion of parents were married (48.3 per cent). More fathers (24.1 per cent) did not hold a GCSE qualification compared to mothers (17.2 per cent), more mothers (44.8%) than fathers (17.2 per cent) achieved GCSEs, and more mothers (34.4 per cent) achieved qualifications higher than GCSE compared to fathers (27.5 per cent). Household income was almost evenly split between earning below 20,000 (41.4 per cent) and above 20,000 (48.3 per cent). A summary of the sample characteristics is presented in Table 1.

Parent Involvement in Child CT-PTSD Sessions

The number of total CT-PTSD sessions ranged from 4 to 10 ($M=8.67$, $SD=2.15$). Parents participated in an average of 3.08 ($SD=1.73$) joint sessions and 1.17 ($SD=1.03$) parent-only sessions. Parent participation in joint sessions ranged from 0 to 80 minutes. Parent participation in parent-only sessions ranged from 0 to 45 minutes. The mean amounts of time spent in joint sessions and parent-only sessions were 55.33 minutes ($SD=47.29$) and 20.42 minutes ($SD=19.48$), respectively. Parents participated in an average of 33.42% of all sessions as ($SD=19.17$) joint sessions and 14.33% ($SD=11.12$) as parent only-sessions.

Linear regressions

Table 2 presents the means and standard deviations for all outcome measures for both conditions (CT-PTSD and WL) at baseline and post-treatment. Corresponding F statistics are provided with associated p values.

Parent Post-traumatic Stress

A linear regression was undertaken to predict post-treatment PTSD symptoms as measured by the PDS based on both pre-treatment PTSD symptoms and condition (WL or CT-PTSD). A significant model was achieved ($F(2, 26) = 9.55-26.71$; $p < 0.001$), with an R^2 of 0.56. Baseline scores were not shown to contribute to the model ($B = 0.22$, $SE = 0.16$, $p = 0.18$, $CI -0.10 - 0.55$) but condition did account for the variance in the expected direction ($B = -20.02$, $SE = 4.03$, $p = 0.001$, $CI -27.98 - -12.05$). This indicated that condition was the only significant predictor of post-treatment parent PTSD scores in this model. This means that parents whose children received CT-PTSD reported significantly fewer PTSD symptoms at post-treatment compared to parents whose children were allocated to the WL control condition.

Parent depression

A linear regression was undertaken to predict post-treatment depression symptoms as measured by the PHQ-9 based on both pre-treatment depression symptoms and condition (WL or CT-PTSD). A significant model was achieved ($F(2, 26) = 35.27-47.92$; $p < 0.001$), with an R^2 of 0.75. Although baseline scores did contribute to the model ($B = 0.54$, $SE = 0.10$, $p < 0.001$, $CI 0.35 - 0.72$) condition also accounted for the additional variance in the expected

direction ($B=-7.18$, $SE=1.66$, $p<0.001$, $CI -10.49 - -3.86$). This indicated that despite baseline parent depression being a significant predictor, condition was still a significant predictor of post-treatment parent depression scores in this model. This means that parents whose children received CT-PTSD reported significantly fewer depression symptoms at post-treatment compared to parents whose children were allocated to the WL control condition.

Parent anxiety

A linear regression was undertaken to predict post-treatment anxiety symptoms as measured by the GAD-7 based on both pre-treatment anxiety symptoms and condition (WL or CT-PTSD). A significant model was achieved ($F(2, 26) = 12.66-25.39$; $p<0.001$), with an R^2 of 0.58. Although baseline scores did contribute to the model ($B=0.32$, $SE=0.14$, $p<0.05$, $CI 0.04-0.59$) condition also accounted for the additional variance in the expected direction ($B=-8.04$, $SE=1.98$, $p<0.001$, $CI -11.93 - -4.14$). This indicated that despite baseline parent anxiety being a significant predictor, condition was still a significant predictor of post-treatment parent anxiety scores in this model. This means that parents whose children received CT-PTSD reported significantly fewer anxiety symptoms at post-treatment compared to parents whose children were allocated to the wait list control condition.

Parent general mental health

A linear regression was undertaken to predict post-treatment general mental health symptoms as measured by the GHQ based on both pre-treatment general mental health symptoms and condition (WL or CT-PTSD). A significant model was achieved ($F(2, 26) = 27.20-46.22$; $p<0.001$), with an R^2 of 0.73. Although baseline scores did contribute to the model ($B=0.42$, $SE=0.10$, $p<0.001$, $CI 0.22-0.63$) condition also accounted for the additional variance in the expected direction ($B=-9.65$, $SE=3.04$, $p<0.01$, $CI -15.78 - -3.52$). This

indicated that despite baseline parent general mental health being a significant predictor, condition was still a significant predictor of post-treatment parent general mental health scores in this model. This means that parents whose children received CT-PTSD resulted in significantly fewer general mental health symptoms at post-treatment compared to parents whose children were allocated to the wait list control condition.

Effect sizes

Between groups (CT-PTSD versus WL at post-treatment) and within subjects (pre-post) effect sizes were calculated for all outcome measures and are presented in table 3. CT-PTSD consistently showed large effect sizes for improvements compared to the WL control group at post-treatment for all outcomes measured. CT-PTSD showed a large effect size for improvements in PTSD, medium effect sizes for improvements in depression and general wellbeing, and a small effect size for improvements in anxiety, relative to pre-treatment scores. In the WL condition, negative effect sizes were found for PTSD, depression and anxiety meaning that parents reported more symptoms at post-treatment. This effect was small for PTSD and depression, and classified as little or no effect for anxiety. A small positive effect size was found for general mental health in the WL condition.

Discussion

The aim of this study was to investigate whether CT-PTSD delivered to children would be superior to WL regarding change in parental PTSS, depression, anxiety and general wellbeing. Similar to the source study (Meiser-Stedman et al., 2017) and consistent with our hypotheses, this RCT provided preliminary support for the efficacy of CT-PTSD for children as a treatment for parent PTSD. Compared to WL, at post-treatment CT-PTSD led to

significantly reduced PTSD symptoms as well as significant improvements in depression, anxiety and general mental health in parents.

Compared to a previous evaluation of TF-CBT (Deblinger, Stauffer & Steer, 2001), this study found large effect sizes rather than medium for parent PTSD in the treatment group. Effect sizes for depression were reported to be medium for the treatment group and small negative effect size for the WL group, and these differed from a previous study (Tutus, Keller, Sachser, Pfeiffer & Goldbeck, 2017) that reported a small effect size for the treatment group and no effect for the WL group. Effect sizes for anxiety were comparable to a previous study (both reporting no effect for the WL group and small effect for the treatment group; Carrion, Kletter, Weems, Berry & Rettger, 2013). This data suggests that CT-PTSD is an effective intervention for children with PTSD and receiving it results in improvements in their parents' own mental health as well. Being in the wait-list control condition may lead to worsening of PTSD, depression and anxiety symptoms.

On average, the parents in this study reported moderate levels of PTSD symptoms supporting the idea that there is a link between parents' PTSD symptoms and the child's (Morris, Gabert-Quillen & Delahanty, 2012). Parent PTSD symptoms significantly improved following the CT-PTSD intervention which is partly consistent with a previous study that found that parent PTSD intrusions reduced even though their avoidance symptoms did not (Deblinger, Stauffer & Steer, 2001). Findings between the studies may have differed due to the differing content of the interventions. Unlike the Deblinger, Stauffer and Steer (2001) study, this study incorporated a reliving component for the children which is thought to be integral for addressing the avoidance that is developed following the trauma (Smith, Perrin, Yule & Clark, 2010). It is hypothesised that this component is likely to have resulted in the reduction in PTSD symptoms of the child and in turn reduce the symptoms of the parents. A correlation between parent and child recovery is likely to exist due to the child learning that it

is acceptable to think and talk about the trauma, thus reducing avoidance for both themselves and their parents. Parents may have learnt that they no longer need to be overprotective of their child and the narrative developed during therapy is shared and safe, reducing the likelihood of the parent re-traumatising the child. Such strategies are thought to be important for reducing parents' "relational PTSD" (Scheeringa and Zeanah, 2001) by increasing their responsiveness (Alisic, Boeije, Jongmans and Kleber, 2012) and therefore fostering a secure base for the child (De Haene Grieten, & Verschueren, 2010).

Another important difference between this present study and that from Deblinger, Stauffer and Steer (2001) is the level of parental involvement in the intervention. Parents in this study were involved in only a proportion of sessions (33.4 per cent of joint sessions and 14.3 per cent parent only sessions) compared to participating in separate, concurrent sessions (Deblinger, Stauffer and Steer, 2001). This could suggest that parents benefit more from being a part of some of their child's sessions rather than having the same amount of sessions running concurrently. Research shows that parent involvement is associated with an improvement in child PTSD, and this relationship is mediated by a reduction in parent PTSD symptoms (Graham-Bermann, Howell, Lilly & DeVoe, 2011). It could be that being open to hearing the child's trauma narrative results in a reduction in PTSD for the child and supports the cognitive-emotional processing of their child's trauma which in turn may reduce parent's own PTSD symptoms (Yasinski et al, 2016). Connected sessions may also mean that the parent is able to regain hope that their child is getting better, improve any parenting strategies that can support the child's PTSD and challenge any cognitions or feelings that may be a barrier to supporting their child helpfully (Cohen, Mannarino and Deblinger, 2016).

With respect to depression, parents in this study reported significantly fewer symptoms post-treatment following CT-PTSD, which contrasts to previous studies that found no superiority of TF-CBT over controls (Tutus, Keller, Sachser, Pfeiffer & Goldbeck, 2017;

Holt, Jensen, & Wentzel-Larsen, 2014). Previous studies suggested that the child waiting for the intervention was just as effective in relation to parental depression as the child receiving the intervention, hence no difference found between the groups. However, they also noted that depression symptoms were not elevated in parents to begin with; whereas in this study parents reported mild to moderate depression symptoms. It is likely, then, that once symptoms exceed a certain threshold, intervention is required and more effective than waiting. Anxiety severity levels were the same as depression severity levels which is expected given the well-known link between the two (Brown, Campbell, Lehman, Grisham, & Mancill, 2001). The significant reduction in anxiety scores is consistent with a previous study which incorporated cognitive and behavioural models in their intervention (Carrion, Kletter, Weems, Berry & Rettger, 2013). With the reductions in PTSD, anxiety and depression symptoms, it is not surprising that parents in this study also reported improvements in their general mental health as screened by the General Health Questionnaire.

Some additional limitations to those already reported in the original trial paper are of note here. Although the sample size was large enough to adequately power this trial, there was considerable missing data for parent outcomes. Although this was appropriately dealt with using imputation methods, there is still a possibility that bias could exist. Mothers represented the majority of the sample and the types of trauma experienced by the children were mostly single event traumas (motor vehicle accidents made up the majority of the sample) which could limit the generalisability of the findings, given that parents may respond to different types of trauma differently.

Future studies of parent outcomes would benefit from conducting further analysis into the amount of parent involvement that is required to predict positive parent outcomes. This would further add to any cost-effectiveness argument that arises from treating both child and

parent through one trauma intervention. It would be beneficial to explore which parents are likely to improve on their outcomes and whether there is a difference in parent outcomes between those whose children experienced single event trauma and those who experienced complex trauma. Investigating the correlation between parent outcomes and child outcomes would test the hypothesis presented in this discussion that parents may improve in their own symptoms when their child has improved.

If these findings are supported by further research, they may guide child and family services in thinking about how parents are both included in in their child's treatment and monitored throughout. This might involve asking the parent to complete their own PTSD outcome measure prior to treatment to determine whether PTSD symptoms are present. It may also be useful to collect information from the parent regarding their own experience of trauma and whether symptoms relate to the child's trauma or a trauma that happened to them separately.

To conclude, this study provided support for CT-PTSD reducing parent PTSD, depression, anxiety and general mental health symptoms. Further research would benefit from conducting further exploration into the parent factors that are associated with improvements in parents' own mental health symptoms as well as the frequency of parent involvement that is required to predict improvement. A cost-effectiveness evaluation is required in order to understand the financial impact of potentially treating parent symptoms at the same time as child symptoms.

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Figure 1. Abbreviated participant progress (CONSORT) diagram.

Table 1. *Sample characteristics*

	Total Sample (n=29)		CT-PTSD (n=14)		WL (n=15)	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
<u>Parent interviewed</u>						
Fathers	2	6.9	2	14.3	0	0.0
Mothers	25	86.2	11	78.6	14	93.3
Other	2	6.9	1	7.1	1	6.7
<u>Marital status</u>						
Single	5	17.2	2	14.3	3	20.0
Living together	4	13.8	1	7.1	3	20.0
Married	14	48.3	9	64.3	5	33.3
Separated/divorced	6	20.7	2	14.3	4	26.7
<u>Mothers' education level</u>						
Did not achieve GCSEs	5	17.2	0	0.0	5	33.3
Achieved GCSEs	13	44.8	7	50.0	6	40.0
Technical college	2	6.9	1	7.1	1	6.7
University undergrad.	7	24.1	4	28.6	3	20.0
University postgrad.	1	3.4	1	7.1	0	0.0
Missing data	1	3.4	1	7.1	0	0.0
<u>Fathers' education level</u>						
Did not achieve GCSEs	7	24.1	2	14.3	5	33.3
Achieved GCSEs	5	17.2	3	21.4	2	13.3
Technical college	3	10.3	3	21.4	0	0.0
Sixth form	3	10.3	1	7.1	2	13.3
University undergrad.	2	6.9	1	7.1	1	6.7
University postgrad.	1	3.4	0	0.0	1	6.7
Missing data	8	27.6	4	28.6	4	26.7
<u>Household income</u>						
<20,000k	12	41.4	3	21.4	9	60.0
>20,000k	14	48.3	8	57.1	6	40.0
Missing	3	10.3	3	21.4	0	0.0

Note. CT-PTSD = etc etc

Table 2 *Outcome measures on an intention-to-treat basis*

	WL (n=15)		CT-PTSD (n=14)		Effect
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
PTSD symptoms (PDS)					
Pre	16.43	15.44	15.76	12.77	$F(2, 26) = 9.55-26.71; p<0.001$
Post	23.09	14.05	2.93	5.50	
Depression symptoms (PHQ-9)					
Pre	10.40	8.67	6.30	6.37	$F(2, 26) = 35.27-47.92; p<0.001$
Post	11.95	7.31	2.57	3.57	
Anxiety symptoms (GAD-7)					
Pre	10.60	8.40	5.66	5.03	$F(2, 26) = 12.66-25.39; p<0.001$
Post	12.13	6.44	2.53	3.98	
GHQ					
Pre	36.11	18.88	23.82	12.27	$F(2, 26) = 27.20-46.22; p<0.001$
Post	30.77	11.30	15.95	6.96	

Table 3. *Effect sizes for outcome measures for intent to treat analyses.*

	WL (pre-post) ^a	CT-PTSD (pre-post) ^a	CT-PTSD vs. WL (post) ^b
PTSD symptoms (PDS)	-0.40	0.97	1.86
Depression symptoms (PHQ-9)	-0.32	0.69	1.61
Anxiety symptoms (GAD-7)	-0.19	0.42	1.78
GHQ	0.46	0.74	1.57

Note. ^aWithin-group; negative scores indicated worsening symptomatology/functioning.

^bBetween-group; positive scores indicated superiority of CT-PTSD.