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Reduced psychiatric symptoms at 6 and 12 months' follow-up of psychotherapeutic and psychoeducative group interventions for children exposed to intimate partner violence



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ABSTRACT

Background: Long-term follow-up studies of interventions for children exposed to intimate partner violence are few, and the sustainability of their outcomes often remains unexplored and uncertain. Current research including follow-up assessment suggests that treatment gains may be maintained or continue post termination. In addition some children may show increased levels of symptoms.

Objective: The present effectiveness study investigated the long-term outcomes of two established group interventions for children exposed to intimate partner violence and their non-offending parent.

Participants and Setting: The study included 50 children, 24 girls and 26 boys, aged 4 to 13 years attending a psychotherapeutic child and adolescent mental health service intervention and a psychoeducative community-based intervention.

Methods: Background information, child and parental mental health problems, trauma symptoms, and exposure to violence were assessed pre- and post treatment and at 6 and 12 months' follow-up.

Results: Sustained treatment gains and late improvements in children's internalizing and externalizing symptoms and in symptoms of traumatic stress were recorded from post treatment to the follow-up assessments (p=.004–.044; d=0.29–0.67). No significant increase in symptoms was reported. Additionally, very little continued or renewed child exposure to violence was reported.

Conclusions: The results of the study indicate that the children did benefit from the two interventions studied and that the outcomes of reduced child symptoms and protection from exposure to violence were sustainable. Children with severe trauma symptoms benefited the most, though maternal psychological problems may for some have hindered recovery. Clinical implications are discussed.

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1. Introduction

Exposure to violence toward a caregiver is associated with severe risks to children's health and development (Chan & Yeung, 2009; Evans, Davies, & DiLillo, 2008; Kitzmann, Gaylord, Holt, & Kenny, 2003). Short- and long-term negative consequences have been reported in several areas including emotional, behavioral, cognitive, physical, and biological functioning and social adjustment (Adams, 2006; Teicher & Samson, 2016). As a result, many children exposed to intimate partner violence (IPV) struggle with multifaceted and profound difficulties. Half of such exposed children are estimated to have problems within the clinical range and to need treatment (Grych, Jouriles, Swank, McDonald, & Norwood, 2000; Martinez-Torteya, Bogat, von Eye, & Levendosky, 2009). Feasible and effective interventions for children exposed to IPV are needed, and the sustainability of their positive effects on children's health and well-being is crucial. Protection from continued or renewed exposure is another important goal to achieve.

1.1. Sustainability of Outcomes of Interventions for Children Exposed to IPV

In their literature review, Rizo, Macy, Ermentrout, and Johns (2011) concluded that empirical information about best practices for supporting children exposed to IPV is sparse. Long-term follow-ups of interventions for children exposed to IPV are few and the sustainability of their outcomes often remains unexplored and uncertain. Different studies measure different outcomes, e.g. emotional, behavioral and trauma symptoms in children, renewed exposure to violence, or child attitudes towards violence, a situation that further impede comparison between studies. Since the review by Rizo et al. (2011), knowledge has increased, but rigorous studies of interventions for children exposed to IPV, specifically ecologically valid effectiveness studies with follow-up data, are lacking. Existing research including follow-up assessment shows conflicting results for externalizing and internalizing symptoms, symptoms of post-traumatic stress, and other effects of treatment. As will be demonstrated below some indicate sustained treatment gains, and some indicate delayed treatment gains at follow-up.

Research on the long-term impact of psychotherapy with children is limited in general. Nevertheless existing studies on a broader range of psychotherapy indicate that the benefits for children are maintained, and may even increase after therapy has ended (Feeny, Foa, Treadwell, & March, 2004; McLaughlin, Holliday, Clarke, & Ilie, 2013; Midgley & Kennedy, 2011; Weisz et al., 2017). However, research on therapeutic outcomes has also repeatedly shown that some children either do not improve or even deteriorate following treatment. This may be because some children do not have sufficient understanding of therapy to make use of it and some may be forced into therapy (French, Reardon, & Smith, 2003; Shirk & Saiz, 1992). In addition, as many as 20% to 40% of young people drop out of therapy, and this may affect the outcomes (Kazdin, 2003; Weisz, Weisz, & Langmeyer, 1987).

1.1.1. Treatment outcomes in children's psychological symptoms

Jouriles et al. (2009) reported that child conduct problems decreased over the course of a home-based intervention aimed at altering mothers' parenting and offering instrumental and emotional support. Problems continued to decrease throughout a 12-month follow-up period. Effect sizes for measures of child conduct problems were generally in the medium to large range on the Child Behavior Checklist (CBCL) and the Eyberg Child Behavior Inventory. The proportion of children in the normative range, i.e. below the clinical cut-off on reported symptoms, increased from 15.6% pre-treatment to 57.1% post treatment and 74.1% at the 12-month follow-up. In another study treatment gains in internalizing symptoms have been shown to be maintained (McDonald, Jouriles, & Skopp, 2006). The late effects in externalizing child symptoms have mainly been interpreted as associated with improved parenting and/or improved mental health in mothers (Jouriles et al., 2009).

Graham-Bermann, Lynch, Banyard, DeVoe, and Halabu, (2007)) showed continued post-treatment improvement at 8 months follow-up in externalizing and internalizing symptoms after children and mothers took part in parallel group interventions designed for children exposed to IPV. Baseline to post-treatment effects were small to moderate, while post-treatment to follow-up effects were larger. The percentage of children with symptoms in the clinical range (on the CBCL) was reduced after treatment, and that reduction continued from post treatment to follow-up. The change from post treatment to follow-up was larger for externalizing symptoms than for internalizing symptoms.

Studies of a dyadic intervention focused on relational trauma have shown that reductions in internalizing and externalizing symptoms during treatment were maintained at a 6-month follow-up. Large treatment gains have also been shown to be sustained in a high-risk sample of children who experienced multiple traumatic and stressful events. The studies showed small to large effect sizes for children (d = 0.41-1.69), with the largest effects in a high-risk sample exposed to four or more traumatic and stressful life events (Ghosh Ippen, Harris, Van Horn, & Lieberman, 2011; Lieberman, Ippen, & Van Horn, 2006).

In contrast, however, Grip, Almqvist, and Broberg, (2012)) found that initial positive significant effects on behavioral problems and social impairment from pre- to post intervention were not sustained at a 1-year follow-up of a group intervention with parallel groups for children and mothers.

Less is known about the sustainability of improvements in symptoms of post-traumatic stress, partly because many studies do not report child symptoms of post-traumatic stress. In one study Overbeek, de Schipper, Lamers-Winkelman, and Schuengel, (2014)) found a significant decrease in symptoms of post-traumatic stress after a group intervention for children exposed to IPV was maintained at 6 months' follow-up.

1.1.2. Other long-term treatment outcomes

Other long-term treatment outcomes include changes in the attachment relationship, in attitudes toward violence, and in exposure to IPV or other child abuse. Increased secure attachment and decreased disorganized attachment following dyadic trauma

focused psychotherapy was maintained at 12 months' follow-up (Cicchetti, Rogosch, & Toth, 2006; Stronach, Toth, Rogosch, & Cicchetti, 2013). More adaptable child attitudes toward violence were found after an intervention combining child and maternal parallel group interventions, and treatment gains were maintained at an 8-month follow-up (Graham-Bermann et al., 2007). Continued or renewed maternal or child exposure to violence is seldom reported, and it remains uncertain to what degree child treatment after IPV contributes to protection from further victimization.

Existing research including follow-up assessment after interventions for children exposed to IPV suggests that treatment gains may sustain or continue to improve post termination; however, some children may deteriorate and have increased levels of symptoms at follow-up. Decreased child symptoms post termination seem to be most pronounced in externalizing problems (Graham-Bermann et al., 2007; Jouriles et al., 2009).

1.1.3. Mediating and moderating factors

The effects of mediators and moderators on the outcomes of treatment for children exposed to IPV are insufficiently explored. Studies in children exposed to IPV or to a broader range of traumatic events suggest that age, type of trauma, extent of exposure to IPV, type of treatment, dosage (number of treatment sessions), parent involvement in treatment, initial levels of child symptoms, and level of maternal symptoms may influence the effect sizes of outcomes (Broberg et al., 2011; Grip et al., 2012; Pernebo, Fridell, & Almqvist, 2018; Silverman et al., 2008). The fact that many children exposed to IPV are also subject to physical abuse (Herrenkohl, Sousa, Tajima, Herrenkohl, & Moylan, 2008; Jernbro & Jansson, 2017) and that study samples may vary in this aspect may contribute to the somewhat conflicting findings.

1.2. Aim and Research Questions

The aim of the present study was to investigate the long-term (6 and 12 months post intervention) outcomes of two interventions for children exposed to IPV: one psychotherapeutic treatment intervention and one community-based psychoeducative intervention. We previously found a moderate decrease in symptoms at the post-intervention assessment (Pernebo et al., 2018), and in the current study we wanted to further explore the post-termination trajectories of these outcomes. Current research questions were (1) What are the long-term outcomes of the two interventions on the children's emotional, behavioural, and trauma symptoms? (2) Are children exposed to continued or renewed exposure to violence after termination of the intervention? (3) What are the effects of moderating and mediating factors such as age of child, gender, and variations in exposure to violence on the outcomes of the intervention?

2. Method

2.1. Study Design

The current effectiveness study had a naturalistic design aimed to investigate two well-established interventions in their natural settings. Sociodemographic data were collected, and outcomes were defined as psychological symptoms, including symptoms of post-traumatic stress, in children. Maternal and children's psychological symptoms were assessed before the interventions (T1), after termination (T2), and at 6 months (T3) and 12 months (T4) follow-up. Study design, participants, procedure, interventions, and measures have been described in detail elsewhere (Pernebo et al., 2018).

2.2. Participants

In all, 50 children aged 4 to 13 years (M = 7.4 years, SD = 2.5 years), 24 girls and 26 boys, and their mothers were initially included in the study. The sample included 19 children and mothers attending a psychotherapeutic child and adolescent mental health service intervention (CAMHSI), and 31 children and mothers attending a psychoeducative community-based intervention (CBI). In all children from eleven groups were included (five CAMHSI and six CBI).

According to mothers' reports, all children included had been exposed to IPV and 62% had been exposed to child physical abuse. Ongoing physical abuse from the perpetrator (90% biological fathers, 10% stepfathers) toward one child and ongoing verbal abuse toward eight children were reported by the mothers at the onset of the interventions. The only significant differences in background variables between children in the two interventions were that children in the CBI were older [t (48) = 5.45, p ≤ .001] and had more current contact with their father [χ^2 (1) = 13.94, p ≤ .001] than the children in the CAMHSI. Children in the CAMHSI were reported by mothers as having higher symptom rates pre-treatment. This was expected due to the different contexts of the child and adolescent mental health service unit and the community based unit. Details of children's pre-treatment symptoms have been previously reported (Pernebo et al., 2018).

Included mothers were 23 to 51 years old (M = 36.9 years, SD = 6.3 years). All mothers reported exposure to physical and psychological aggression from a former partner, with a high prevalence of reported experiences of sexual coercion (87%) and partner-inflicted physical injuries (85%). Mothers in the two different intervention groups did not differ in any background characteristics or in self-reported symptoms.

2.3. Procedure

The study was carried out in one child and adolescent mental health outpatient unit and one community-based unit in Sweden,

both specialized in interventions for children suffering from the consequences of domestic violence. Cases were included consecutively, with no influence from the researchers. For criteria and procedures of inclusion see Pernebo et al. (2018). All mothers invited to take part in the interventions were informed about the study during the inclusion period and asked for written consent to participate in the pre- and post-treatment and follow-up assessments. Consent to participate in the study did not affect provision of services. The services were free of cost and available to all irrespective of consent to participate in the study or not. Inclusion and attendance at pre- and post-treatment assessments have been reported previously (Pernebo et al., 2018). At post-treatment assessment, mothers were asked how they wished to be contacted for follow-up assessments (by telephone call, text message, or e-mail). Mothers were then contacted 6 and 12 months after the intervention and asked to schedule an appointment for a follow-up assessment. All mothers included in the study consented to participate in the follow-up. The follow-up assessments were conducted at the treatment units, family home, or a neutral location according to the wish of the mother. Approximately half of the follow-up assessments were done by the first author, who was independent of the treatment agencies, and the other half by the regular staff at the treatment units.

2.4. The Intervention Programs

The intervention programs at the two agencies were both manualized and well established. The child and adolescent mental health outpatient unit offered the psychotherapeutic treatment intervention, and the community-based agency offered the psychoeducative intervention. Both interventions included parallel group sessions for children and for abused parents and entailed 12 to 15 weekly 90-minute sessions. Groups included four to eight children. At both units it was required that the intimate relationship between the participating mother and the abusive partner had been terminated before the intervention, the IPV was acknowledged by the abused parent and the child, and the exposure to IPV was the main reason for contacting the unit. No formal routine for in-depth trauma screening was applied at the agencies. Participation was voluntary and free of charge. For a more thorough description of the interventions see Pernebo et al. (2018).

2.5. Attrition and Missing Data

Missing data due to non-responses were few and were considered randomly distributed. All mothers approached and asked for consent to participate agreed to participate in the study. Seven (14%) mother–child dyads (one in the CAMHSI and six in the CBI) discontinued the intervention and did not provide post-treatment or follow-up data. At the 6-month follow-up, five mothers could not be contacted (three in the CAMHSI and two in the CBI), and at the 12-month follow-up one mother (in the CAMHSI) did not respond, resulting in a 14% dropout from post-treatment assessment to the 12-month follow-up. There were no significant differences in background variables or initial child and maternal symptoms between the completers group and the non-completers group. No formal measure of attendance was applied, but group leaders estimated high attendance for both children and mothers, with most attending all sessions and some absent from one or few sessions.

2.6. Measures

Six measures were applied:

- 1 the revised Conflict Tactics Scales (CTS2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996) to cover continuing levels of exposure to violence ($\alpha = 0.59$ to $\alpha = 0.90$);
- 2 the Strengths and Difficulties Questionnaire (SDQ-P; Goodman, Ford, Simmons, Gatward, & Meltzer, 2000) measuring child mental health ($\alpha = 0.58$ to $\alpha = 0.84$);
- 3 the Trauma Symptom Checklist for Young Children (TSCYC; Briere et al., 2001) to assess child symptoms of post-traumatic stress ($\alpha = 0.74$ to $\alpha = 0.91$);
- 4 the Emotion Questionnaire for parents (EQ-P; Rydell, Berlin, & Bohlin, 2003) for child emotionality and emotional regulation ($\alpha = 0.85$);
- 5 the Brief Symptom Inventory (BSI; Derogatis & Melisaratos, 1983) to measure maternal mental health ($\alpha = 0.93$); and
- 6 the Impact of Event Scale—Revised (IES-R; Weiss, 2004) for maternal post-traumatic stress symptoms ($\alpha = 0.79$ to $\alpha = 0.90$).

Identical instruments for assessment were used at all points of assessment. For a detailed description of measures and internal consistency see Pernebo et al. (2018). Internal consistency did not differ significantly between assessments at the various time points.

2.7. Statistical Analyses

Two-tailed paired t-test was applied to compare within-group differences between the pre-, post-, and follow-up assessments, and an independent t-test and Pearson's chi-squared test were used to compare the differences between the CAMHSI and the CBI. The interaction between type of intervention and change in symptoms from pre-treatment to follow-up assessments was explored using a general linear model (GLM) repeated measures procedure for each dependent variable, with group (CAMHSI versus CBI) as the between-subject variable and time (pre-treatment, post-treatment, and 6- and 12-month assessments) as the within-subject variable. Cohen's d was applied to calculate effect sizes, with ≥ 0.80 indicating a large effect, ≥ 0.50 a moderate effect, and ≥ 0.20 a small

Outcomes on the Parent Version of the Strengths and Difficulties Questionnaire (SDQ-P), the Emotions Questionnaire for Parents (ER-P), and the Trauma Symptom Checklist for Young Children (TSCYC) for Children in the Child and Adolescent Mental Health Service Intervention (CAMHSI) and the Community Based Intervention (CBI) Table 1

	CAMHSI										CBI									
	Pre (n = 19)	Post (n = 18)	(1		6 months (n = 15)	v , _		12 months (n = 14)	รา		Pre (n = 31)	Post (n = 25)	_		6 months (n = 23)	s		12 months (n = 23)	hs	
Measure	M	M	Sig.	p	M	Sig.	р	M	Sig.	p	M	M	Sig.	p	M	Sig.	p	M	Sig.	p
SDQ-P			:			:			;							:			:	
Total difficulties score	15.72	11.67	.002	0.67	8.60	.007	1.02	8.58	.003		12.65	10.65	.056	0.31	9.86	.005	0.46	9.91	.002	0.50
Emotional symptoms	5.00	3.50	.003	0.73	2.40	.008	1.17	2.00		1.57	4.26	3.30	.031	0.34	2.86	.004	0.48	3.00	.000	0.52
Conduct problems	3.56	2.67	.053	0.49	2.20	.053	89.0	2.42	.041		2.39	1.96	.162	0.21	1.91	760.	0.27	2.23	.435	0.13
Hyperactivity/inattention	5.28	3.89	.032	0.46	2.73	.000	0.74	3.00	.051		4.26	3.70	.188	0.19	3.27	.023*	0.37	3.27	200.	0.44
Peer problems	1.89	1.61	.550	0.15	1.27	.370	0.27	1.17	.499		1.74	1.70	.901	0.03	1.64	.750	0.07	1.41	.466	0.17
Prosocial behavior	7.44	8.22	060.	0.34	7.93	.200	0.35	8.00	.209		8.43	8.17	.354	0.16	8.64	.389	0.18	7.73	.019	0.37
ЕQ-Р																				
Emotionality	3.51	2.99	.027	0.57	2.96	.015	0.61	3.04	.042	0.82	2.71	2.57	.449	0.14	2.67	.711	90.0	2.55	.182	0.28
Emotion regulation	2.95	3.52	600.	0.85	3.65	.018	98.0	3.85	.007	1.41	3.31	3.41	.341	0.14	3.52	.133	0.28	3.53	.029	0.45
TSCYC																				
Anxiety	20.44	17.94	.081	0.42	16.73	.042	0.45	14.83	.010	0.85	16.70	15.65	.202	0.22	15.73	.209	0.23	14.68	.004	09.0
Depression	17.44	13.00	.004	0.99	12.67	.007	1.12	12.33	.016	1.12	14.96	14.17	.297	0.16		.,,600	0.45	13.91	.082	0.31
Anger/aggression	21.00	16.61	.001	0.65	15.07	.001	0.87	14.67	.001	1.00	15.91	14.83	.206	0.20	13.23	<.000.>	0.63	14.27	.039	0.33
Total posttraumatic stress	90.09	53.11	680.	0.47	46.27	.004	0.80	45.83	.013	0.94	48.35	44.35	.035	0.35		.024*	0.35	42.41	.001	0.70
Intrusion	19.50	18.33	.393	0.20	16.13	.074	0.43	15.75	.186	0.56	15.17	13.70	.041	0.40		.182	0.31	13.18	800.	99.0
Avoidance	19.89	18.17	.225	0.36	14.73	.003	1.03	14.83	.023	0.91	15.61	14.48	.164	0.26		.172	0.24	13.86	.053	0.49
Arousal	20.67	16.61	.027	99.0	15.40	.005	0.80	15.25	.001	1.07	17.57	16.17	.126	0.27		200.	0.36	15.36	.001	0.58
Dissociation	18.67	14.50	200.	92.0	11.87	.002	1.34	12.33	.012	1.14	13.78	13.87	626.	0.02		.747	0.05	13.41	.532	0.13
Sexual concerns	10.28	11.33	.342	0.25	10.87	.619	0.11	10.92	.791	0.07	9.17	9.22	.714	0.10		.576	0.14	00.6	.104	0.36

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

effect (Cohen, 1988). Dependent t-tests using the last observation carried forward (LOCF) method were conducted for dropouts between treatment termination and follow-up. Change in children's symptoms between pre- and post-treatment and follow-up assessments was analyzed using univariate regression with child age, gender, and frequency of IPV as covariates. Associations between a child's change in symptoms between pre- and post-intervention and the child's experience of physical abuse, ongoing maternal symptoms of traumatic stress, and child trauma symptoms at the onset of the intervention were controlled for with multiple regression analysis. Clinical cut-off scores were used for the SDQ-P (with ≥ 14 points on the total difficulties score, and ≥ 1 on the impact scale indicating problems within the clinical range) and the TSCYC (a T-score of ≥ 70 was used as the clinical cut-off) to investigate the clinical significance of reported symptoms. The statistical software SPSS, version 23.0, was used for all calculations.

2.8. Ethical Approval

The study was approved by the Regional Ethics Committee in Uppsala (Dnr 2012/246).

3. Results

No significant differences were found between completers and the intention-to-treat group on any of the analyses. Analyses presented in this section include data only from on the completers, while Table 1 includes the mean scores for all children assessed at the different time points (pre- and post treatment and at 6 and 12 months' follow-up).

3.1. Outcomes of the Interventions

Mothers reported sustained, continuing, and additional significant improvements in children's symptoms of general psychological health and trauma symptoms (SDQ-P and TSCYC) from pre-intervention to the follow-up assessments. The continuing and sustained decreases in reported symptoms from pre-intervention to the 12-month post-intervention follow-up are illustrated in Fig. 1, which shows maternal report of children's general psychological symptoms (SDQ-P, total difficulties score), and Fig. 2, which shows maternal report of children's symptoms of post-traumatic stress (TSCYC, total post-traumatic stress) at the four assessment times for both interventions.

3.2. Changes in Children's Symptoms from Pre-intervention to the 6- and 12-month Follow-up Assessments

Mothers in the CAMHSI reported significant treatment gains in most of the areas assessed at the 6-month follow-up. Of the five scales on the SDQ, scores on the total difficulties scale, the emotional symptoms scale, the hyperactivity scale, and the impact score were statistically improved from pre to 6-months follow up. On the TSCYC, maternal report of the scales measuring anxiety, depression, anger, avoidance, arousal, total posttraumatic stress, and dissociation were statistically improved from pre-assessment to 6-months follow-up. Additionally scores on the ERP measuring emotionality and emotion regulation was statistically improved as reported by mothers. At the 12-month follow-up all these improvements were reported as sustained, and additionally scores on the SDQ sub-scale measuring conduct problems were reduced. Effect sizes were mainly large (see Table 1).

At the 6-month follow-up assessment, mothers in the CBI reported statistically significant improvements on the scores on the SDQ

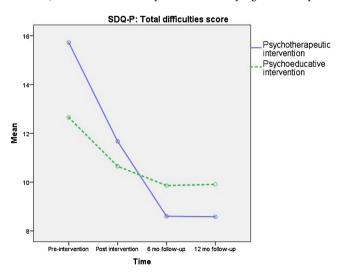


Fig. 1. Child symptoms on the Parent Version of the Strengths and Difficulties Questionnaire (SDQ-P) subscale Total difficulties score pre-intervention, post intervention, and at 6 and 12 months after termination of the Child and Adolescent Mental Health Service Intervention (CAMHSI) and in the Community Based Intervention (CBI).

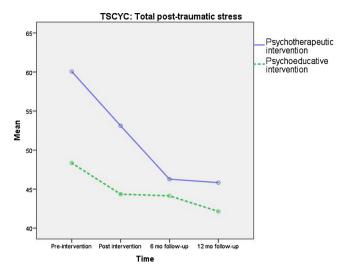


Fig. 2. Child symptoms on Trauma Symptom Checklist for Young Children (TSCYC) subscale Total posttraumatic stress pre-intervention, post intervention, and at 6 and 12 months after termination of the Child and Adolescent Mental Health Service Intervention (CAMHSI) and in the Community Based Intervention (CBI).

scales on total difficulties, emotional symptoms, and hyperactivity. On the TSCYC maternal report of the scales measuring depression, anger, and arousal were statistically improved. At the 12-month follow-up all these changes were sustained except for the scores on the TSCYC scale of depression where the decrease was no longer statistically significant. Additional significant improvements were found on maternal report of the TSCYC scales on anxiety, total post-traumatic stress, and intrusion, as well as on the SDQ scale on prosocial behaviour and on the EQ-P score on emotion regulation. All significant effect sizes were small to medium (see Table 1).

3.3. Changes in Children's Symptoms from Post-intervention to 6-month and 12-month Follow-up Assessments

Significant improvements between post-assessment and 6-month follow-up in children's scores on the TSCYC on total post-traumatic stress (p=0.031, d=0.33), intrusion (p=.033, d=0.29), avoidance (p=.005, d=0.64), and dissociation (p=.020, d=0.64) were reported by the mothers in the CAMHSI. No significant changes were reported between the 6- and 12-month follow-ups. Between the post-treatment assessment and the 12-month follow-up there were significant decreases in maternal report of child scores on the SDQ scale on emotional symptoms (p=.004, d=0.67), the TSCYC scale on total post-traumatic stress (p=0.015, d=0.44), and avoidance (p=0.014, d=0.55) for children in the CAMHSI.

Between the post-treatment assessment and the 6-month follow-up there was a significant decrease in children's scores on the SDQ scale on anger (p = .038, d = 0.42) as reported by mothers in the CBI. Between the 6- and 12-month follow-ups there was a significant improvement in the CBI in maternal report of scores on the TSCYC scale on anxiety (p = .023, d = 0.29) and on the SDQ scale on prosocial behaviour (p = .044, d = 0.49). Between the post-treatment assessment and the 12-month follow-up there were no significant changes in reported child symptoms in the CBI.

No significant increase in symptoms was reported by mothers in either of the groups on any measure at any time.

3.4. Comparison of Changes during the Follow-up Period Between the Two Interventions

Group \times time interactions indicated little significant difference in the treatment effects during the follow-up period between the two interventions. The mothers of children in the CAMHSI reported larger improvement than the mothers of children in the CBI between the post-intervention and the 6-month follow-up assessments on avoidance (TSCYC) [F(1, 33) = 7.36; p = .010; d = 0.70]. No other significant difference between the two interventions was found in the amount of change reported by mothers during the follow-up period.

3.5. Clinical Significance

The proportion of children with symptoms reported within the clinical range decreased during the follow-up period. In the CAMHSI, the number of children with symptoms at a clinical level as reported by mothers was reduced by half or more on several measures at the 6-month follow-up and this result was sustained at the 12-month follow-up (Table 2).

3.6. Continued or Renewed Exposure to Violence

Mothers reported decreasing frequencies of their own and their children's exposure to physical and psychological violence.

Table 2
Percentage of Children in the Child and Adolescent Mental Health Service Intervention (CAMHSI) and the Community Based Intervention (CBI) with Psychiatric Symptoms within Clinical Range Pre and Post Intervention, as well as 6 and 12 months after termination of intervention on the Parent Version of the Strengths and Difficulties Questionnaire (SDQ-P) and on the Trauma Symptom Checklist for Young Children (TSCYC) Ånxiety should be Anxiety. Is it possible to get "6 months" om one line?

	CAME	ISI			CBI				All	All			
Measure	Pre-	Post	6 months	12 months	Pre-	Post	6 months	12 months	Pre-	Post	6 months	12 months	
SDQ-P													
Total difficulties score	58	39	13	14	43	36	30	26	49	37	24	22	
Impact score	79	67	33	36	61	36	48	39	68	49	42	38	
TSCYC													
Ånxiety	74	53	37	26	48	23	23	19	62	34	28	26	
Depression	74	47	21	10	39	23	7	22	52	32	12	18	
Aggression	74	32	32	26	45	23	26	23	56	26	28	24	
Total post-traumatic stress	95	84	37	42	71	45	36	36	76	60	36	38	
Intrusion	90	68	42	47	55	36	36	29	68	48	38	36	
Avoidance	100	90	42	42	58	52	42	36	74	66	42	38	
Arousal	79	42	26	21	48	36	29	26	60	38	28	24	
Dissociation	68	37	10	5	32	26	26	26	46	30	20	20	
Sexual concerns	42	26	16	10	6	0	6	0	20	10	8	6	

Note. Cut off scores on SDQ-P: Total difficulties subscale ≥ 14 and Impact subscale ≥ 1 . On the TSC Young Children (TSCYC), cut off on all subscales ≥ 70 .

Physical violence was reported by mothers to decrease more rapidly than psychological abuse in both cases (see Tables 3 and 4).

3.7. The Influence of Moderating and Mediating Factors on Long-term Outcomes

No interactions were found between subgroups within the sample based on background characteristics and outcome. No significant association was found between the children's gender, the children's age, or visitations with the violent parent and the children's outcomes on any measure as reported by mothers. Children reported by mothers as subjected to physical maltreatment prior to entering treatment improved more than non-abused children from pre-treatment to the 12-month follow-up on the TSCYC depression subscale [B = 3.939 (SE = 1.528); $\beta = .409$; p = .015, adjusted $R^2 = .142$]. High levels of post-traumatic stress (TSCYC) in children pre-treatment were associated with larger improvements from pre-treatment to the 12-month follow-up assessment on the subscales of the TSCYC measuring post-traumatic stress: total post-traumatic stress symptoms [B = .480 (SE = .138); $\beta = .518$; p < .001, adjusted $R^2 = .247$], intrusion [B = .163 (SE = .068); $\beta = .385$; p = < .023, adjusted $R^2 = .122$], avoidance [B = .178 (SE = .072); $\beta = .396$; p = < .018, adjusted $R^2 = .132$], and arousal [B = .139 (SE = .046); $\beta = .466$; p = .005, adjusted $R^2 = .193$] as reported by mothers. A high level of ongoing maternal mental health problems as measured by the BSI Global index at the 12-month follow-up was associated with a smaller decrease in maternal report of child symptoms on the SDQ-P emotional symptoms subscale [B = -1.345 (SE = -.631); $\beta = -.348$; p = .040, adjusted $R^2 = .095$], and on the TSCYC total post-traumatic stress subscale [B = -6.286 (SE = 2.838); $\beta = -.312$; p = .034]. A model including maternal report of children's pre-treatment post-traumatic stress as well as maternal ongoing mental health problems (BSI Global) at the 12-month follow-up explained 33% of the variance in the changes in the children's symptoms of post-traumatic stress during the interventions (adjusted $R^2 = .326$).

4. Discussion

The aim of this study was to investigate the long-term outcomes of two well-established group interventions for children exposed to IPV. The effectiveness of the interventions was sustained over a 12-month period after treatment termination. The findings indicate considerably reduced symptoms for children in both interventions from pre-intervention to the 12-month follow-up. Specifically, children taking part in the CAMHSI showed significant decreases with large effect sizes in symptoms in most areas assessed, while children in the CBI were reported to have significant, though small to medium sized, decreases in most major areas at the 12-month follow-up.

After both interventions during the follow-up period effect sizes and statistical significance on most measures increased and fewer

Table 3Percentage of children subjected to physical and psychological violence ever, during the 6 months before the intervention, post intervention, and at 6 and 12 months after termination (as reported by mothers)

	Ever	Pre	Post	6 months	12 months
Physical violence	62	16	6	0	0
Psychological violence	16	16	16	4	6

Table 4

Percentage of mothers reporting exposure to physical and psychological violence ever, during the 6 months before the intervention, post intervention, and at 6 and 12 months after termination

	Ever	Pre	Post	6 months	12 months
Physical violence	100	16	10	0	2
Psychological violence	100	38	40	16	14

children scored within the clinical range for symptoms as reported by mothers. This suggests that the outcomes of the interventions at follow-up included larger treatment gains, improvements less likely to be due to chance, and changes more meaningful in making a real difference in children's lives than at the post-intervention assessment. This is in accord with earlier research (Graham-Bermann et al., 2007; Jouriles et al., 2009; Lieberman et al., 2006).

The results, however, also indicate a difference between the two interventions in the path of sustainability and continuous change in symptoms during the follow-up period. For children in the CAMHSI, the results indicate a trajectory of continued symptom reduction after treatment, with the main reduction during the first six months after termination and sustained treatment gains at the 12-month follow-up. The path seems a little different for the children in the CBI, where the effects of the treatment seemed mainly to be consolidated and sustained, with little continuing improvement after termination of intervention.

The different paths may reflect differences between the two interventions. It may be that the psychoeducational intervention focuses more on the stabilizing elements of treatment, whereas the psychotherapeutic intervention includes more of the processing elements, whose gains tend to evolve after termination of treatment. Due to the sparsity of follow-up studies, however, caution is necessary in drawing conclusions about the diverse long-term trajectories of the outcomes of the different interventions.

Consistent with previous research, children in this study with initially reported high trauma symptoms seemed to benefit the most from interventions and maternal mental health seems to be a key factor that may hinder or detain child recovery (Ghosh Ippen et al., 2011; Grip et al., 2012; Pernebo et al., 2018). This indicates that children suffering the most may be those who benefit the most from interventions, even if they at times remain symptomatic. It may also be that the parental intervention component fosters enhanced safety and continuous symptom reduction over time.

It is noteworthy that in neither of the interventions maternal reports showed increased symptoms in any child or increased exposure to violence toward the caregiver or the children, indicating that the interventions may be regarded as safe. The findings must be interpreted with caution due to the small sample size, but nevertheless this result contrasts with earlier studies that showed that some patients develop new or increased symptoms over the course of treatment (Lambert, 2004; Lilienfeld, 2007). Children with experiences of IPV have been found to be at risk for future exposure to violence (Broberg et al., 2011). Therefore, diminishing the risk of future exposure to direct and indirect violence is one of the primary objectives for interventions designed for children exposed to IPV. The findings in this study that no child was reported to be subjected to physical violence at either follow-up, and that exposure to psychological violence and witnessing violence toward the caregiver were both reported at low and decreasing levels are essential. It is possible that the interventions contributed to protecting against continued or renewed exposure to violence toward the mother or child. In the present study it is not possible to disentangle to what extent the reduction of exposure to violence contributed to the reported decrease in child symptoms. It should have demanded a more complex design from the very start of the study.

As reported earlier, mothers still reported many children to exhibit symptoms at clinical levels at the post-treatment assessment (Pernebo et al., 2018). The current study showed that even though some children were reported to remain highly symptomatic, their symptoms were lower 6 months after treatment ended than at the post-treatment assessment, but not lower at 12 months post intervention than at 6 months. Considering the trajectory of symptom change in the current study, a follow-up assessment 6 months after treatment termination may detect children in probable need of additional interventions.

4.1. Clinical Implications

The results of the study show that children benefit from the two group interventions. The positive effects of the interventions seem sustainable in terms of reduced symptoms and protection from further exposure to violence. This indicates that the studied group interventions can be recommended as safe and effective for children after exposure to IPV. It also illuminates the applicability of providing group interventions for children who have been exposed to IPV in both clinical and community settings. The results further clarify the need to identify children with additional needs. The interventions are not sufficient for some children, and for these children other and/or complimentary interventions should be considered. The late improvements for some children suggest the clinical usefulness of assessing children post-intervention and at a 6 months post-termination follow-up. The results further strengthen the importance of maternal psychological health in the recovery of children, suggesting that child-oriented agencies also provide appropriate support and treatment for the mothers of children attending interventions.

4.2. Strengths and Limitations

The study design and results support the usefulness of conducting naturalistic effectiveness studies including follow-up data. The naturalistic setting of the study strengthens its external validity and makes the results generalizable to similar clinical and community-based interventions. The 6-month follow-up identified additional improvements in children's symptoms, and the 12-month

assessment affirmed the sustainability of treatment gains. This would not have been detected without the follow-up assessments. A specific strength of this study is the low rate of attrition from both the interventions and the study, substantially strengthening the reliability of the results. The participants' high compliance was likely fostered by the stability of the agencies and the parents' trust in the staff. A highly structured research protocol, concrete and accessible support from the first author to the staff, and flexibility in when and where to conduct the follow-up assessments further strengthened the continuous participation of the mothers.

The children in this study were to a considerable extent exposed to physical abuse in addition to witnessing violence toward a caregiver. This overlap is in accord with studies of prevalence (Herrenkohl et al., 2008; Jernbro & Jansson, 2017) and strengthens external validity, but may limit the possibility to draw conclusions on treatment effects for children solely exposed to witnessing IPV.

The small sample size and lack of control group, however, limit the generalizability and the conclusions that can be drawn from the results. The sample size also limits opportunities for in-depth analysis of the heterogeneity of the two populations and associations between subgroups and outcomes. On the other hand it may have been an important factor contributing to high attendance and complete datasets. Furthermore the limited sample may have made differences in background variables or initial symptoms between the completers group and the non-completers group difficult to detect. There was no ethical and practical way to construct a control group; the included children's immediate need for treatment called for provision of a fast and safe intervention. The limitations of the study further include necessitated reliance on maternal reports only, a lack of formal screening for adverse life events, and a lack of measures of session attendance or treatment fidelity. The fact that some of the data was collected by the regular staff at the treatment agencies may have affected some mothers to over- or under-report on improvements. Alliance and an inequality in power may lead to a feeling of obligation to over-report improvement to please the service provider or a wish to under-report improvement as a way to obtain further support or treatment. Finally it should be taken into account that the increase in familywise error rate across the reported statistical analyses was not controlled for. Overall, we consider this research relatively preliminary and encourage replication

4.3. Future Research and Development

The development of accessible and effective interventions for children exposed to IPV would benefit from further studies including follow-up data to follow the trajectories of children's symptoms and well-being during and after interventions. It would also be useful if future research explored a wider range of outcomes and collected data from a greater variety of sources. Children's symptoms, maternal symptoms, and exposure to violence could be complemented by measures of children's relational and social development (relations at home, in school, and with peers), cognitive development, and physical and biological functioning. Future research would also benefit from investigating to what extent the reduction or removal of violence in the home explains the reported decrease in child symptoms.

5. Conclusion

The results of the study indicate that the two interventions studied are safe and their outcomes of reduced child symptoms and protection from exposure to violence are sustainable. The maternal report of late decrease in symptoms from termination to 6-month follow-up and sustained treatment gains over 12 months suggest a late effect in the psychotherapeutic intervention. Children with severe trauma symptoms benefit the most, though maternal psychological problems may hinder children's recovery. Some children remain highly symptomatic as reported by mothers, and in probable need of further and/or different interventions.

We recommend the two group interventions studied for children exposed to IPV, especially children who are highly symptomatic. We would like to emphasize the benefit of including a focus on maternal psychological functioning and suggest routine follow-up assessments of both children's and mothers' symptoms and needs.

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