Trauma, Re-traumatisation and Dropout from Psychological Treatment for Post-Traumatic Stress Disorder (PTSD)

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Thesis Portfolio Abstract

Background: Trauma-exposure in children and young people has been linked to a wide range of adverse consequences (Dorsey et al., 2017). However, dropout from treatment following trauma has been found to be high (Ormhaug & Jensen, 2018). Evidence suggests some clinicians do not implement trauma-focused treatments (Becker et al., 2004). This has been linked to concern that treatment can exacerbate symptoms, 're-traumatise' patients and increase risk of dropout (Finch et al., 2020a). **Methods**: A systematic review of the literature identified studies which have quantitatively examined variables that have a potential relationship with dropout from psychotherapeutic treatment for trauma-exposed children and young people. Findings from these 20 studies form the basis of a narrative synthesis. Data regarding participant dropout was extracted from 40 trials of treatments for PTSD in children and young people. Proportion meta-analyses estimated the prevalence of dropout. Odds Ratios compared the relative likelihood of dropout between different treatments and controls. Subgroup analysis assessed the impact of potential moderating variables. **Results**: A host of variables have been investigated regarding treatment dropout for trauma-exposed children and young people. Findings are mixed and inconsistent, but there is evidence to suggest some groups are at greater risk of dropout. However, treatment approach does not appear to be significantly linked to dropout: dropout from RCTs of trauma-focused treatments is low and is not more likely than from non-trauma focused arms. **Conclusions**: Trauma-focused treatments are well-tolerated by young people in trials however dropout from 'real-world' settings appears to be far higher. Potential reasons for this are explored, but a lack of consistency as to how dropout is defined makes this problematic. Adopting standardised reporting of dropout-relevant data in both research and clinical contexts would help address this. These findings contribute to an emergent evidence base in this area and directions for future research are identified. Particularly warranted is research that explores how retention

in RCTs can be replicated in other settings, and the broadening of methodological approach and foci.

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Acknowledgments

I would like to acknowledge that the data contained in this thesis represents thousands of children and young people from all over the world, who have faced huge challenges and have somehow found the courage to keep going and hope for change. I can't thank Peter Beazley and Richard Meiser-Stedman enough for being so generous with their time and expertise. I have been lucky enough to train alongside some absolute gems. I would especially like to thank Ali Sky, Karen Cregan, Frankie Woolgar, Kate Roberts, Briony Westgate and Isobel Wright. Very simply, without you I would not have made it this far. I am so grateful for all the support (and forbearance) from all my family and friends. In particular, I'd like to thank Hannah Craig for being my support bubble for more than 20 years. My mum, who has been alongside me every step of the way. Richard, who has been absolutely incredible throughout, and makes me laugh me every day, through everything life throws at us. And Ivor, who is so much more than we could possibly deserve. I hope that your core beliefs and reciprocal roles survive all of the 'mummy can't play, she's working'. Luckily if not, I know some amazing clinical psychologists.

Chapter 1: Introduction to Portfolio

Dropout from psychotherapy among children and young people is a significant problem. Those that end treatment prematurely have been found not to reap the benefit of psychological intervention when compared to treatment completers (Cohen & Mannarino, 2000). For service providers, unattended appointments and dropout are inefficient and impact upon resources. For researchers, high levels of dropout can impede research by skewing data, limiting the generalisability of findings and reducing statistical power (Sprang et al., 2012).

The difficulties associated with retaining children and families in psychotherapy have long been documented. Early research tended to focus on sociodemographic characteristics such as age, gender and socioeconomic status, but findings were often contradictory or inconclusive (Armbruster & Fallon, 1994) and the underlying mechanisms were largely unexplored (Kazdin et al., 1997). In 1997, Kazdin and colleagues proposed the influential barriers-to-treatment model. This model elucidated the contribution of additional variables which can militate against participation in treatment, over and above the child and family characteristics identified by prior research. Some of the most salient of the obstacles they identified were the perception among parents that treatment was demanding and not very relevant to their child's difficulties, or a poor relationship with the therapist. They found that the presence of such barriers added to the risk of dropout, even after other variables were controlled for. Further, for families at high risk of dropout based on their sociodemographic profile – low income, single parent families, young maternal age, harsh and adverse parenting practices – having fewer of these barriers was a protective factor that attenuated their risk of dropout.

Similarly, in their 2002 study, Garcia and Weisz found that problems in the therapeutic relationship - a perceived lack of therapist involvement, a belief that the therapist

was not competent, did not talk about the right things or address the right problems - explained the most variance in their factor analysis model. Alongside concern about financial aspects of treatment, these were the only variables that could distinguish between completers and non-completers. Importantly, scores for the 'Treatment Not Needed' factor (i.e. that help was no longer needed because the child's difficulties had resolved) did not differentiate between completers and dropout, suggesting that dropout saw the child's needs continuing to be unmet.

De Haan et al.'s (2013) meta-analysis of children and young people who drop out from a range of psychotherapeutic interventions highlighted the variability in dropout rates and the ways in which study design and dropout definition contribute to this. They found that dropout from efficacy studies (n = 17) was relatively low (mean: 28.4%, range 16 – 50%), while in effectiveness studies (n = 30) the rate was considerably higher (mean: 50%, range 17 – 72%). How dropout was defined was also influential. Studies that used clinician judgement as to whether therapy had ended prematurely or not, had lower average dropout than did those studies which defined dropout with reference to a preordained number of sessions or a proportion of a course of treatment (e.g. fewer than six sessions, completing less than 80% of protocol) (35.8% and 44.5% respectively).

These methodological and definitional considerations mean that clear and consistent predictors of dropout are elusive. This is even more so the case when considering trauma-exposed children and young people. Dropout rates of up to 70% have been reported in this population (Wamser-Nanney & Steinzor, 2016). Yet, there is limited research in this area, and it is unclear the degree to which findings from adult populations generalise to younger patients. Greater understanding of the factors that are influential in dropout from treatment following trauma may inform the development of strategies that can promote treatment retention. Determining if there are differential dropout rates for different therapeutic

approaches would allow clinicians to make judicious decisions about treatment approach that balance therapeutic gain and risk of dropout.

This thesis will first consider what is the evidence to date regarding factors that influence premature termination of therapy following trauma exposure in a systematic review of the literature in this area. A Bridging Chapter will help situate this within a broader debate about the potential for some treatment approaches to exacerbate symptoms and increase the likelihood of dropout. A meta-analysis of dropout rates from Randomised Controlled Trials (RCTs) for evidence-based treatments of PTSD in children and young people then follows. Finally, a discussion chapter reflects on the findings of the preceding chapters and includes some recommendations for future research in this area.

Chapter 2: Systematic Review

The following paper has been prepared in accordance with the requirements for submissions to the Journal of Affective Disorders. Author guidelines can be found in Appendix A. British spelling has been used for the purposes of the thesis portfolio.

Word count: 7994 (excluding tables and references)

A systematic review of factors associated with dropout from psychological treatment for trauma-exposed children and young people?

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Abstract

Background: There has been concern about the rates at which children and young people exposed to trauma, drop out from psychotherapeutic treatment (Steinberg et al., 2019). Identifying who is at greater risk of dropping out may support strategies to promote treatment retention. This has received greater attention in the literature recently, however it has not been the subject of a comprehensive review.

Method: Systematic searches identified 20 studies investigating potential correlates or predictors of dropout. Findings were combined into a narrative synthesis of the emergent evidence in this area.

Results: Many studies reported high dropout rates from trauma-focused services. Researched variables fell within five categories: Socio-demographics, Trauma characteristics, Symptomology, Caregiver variables and Treatment variables. There was some evidence to suggest that older age, lower income, membership of some ethnic groups, greater externalizing symptoms, exposure to multiple traumas, some comorbidities and a lack of caregiver involvement in initial appointment, are associated with greater chances of dropping out, although findings across studies with respect to these factors were variable and there were many contrary and non-significant findings.

Conclusions: Dropout is a complex phenomenon: no factor or set of factors is consistently and strongly implicated. Inconsistency in the way in which dropout is defined compounds this.

Introduction

Exposure to trauma is widespread among children and young people (Dorsey et al., 2017). It has been linked to a host of mental health difficulties with wide ranging impacts in both the short and longer term (Silverman et al., 2008). While PTSD is among the most researched consequences of trauma exposure, other sequelae include behavioural difficulties, anxiety and depressive symptoms and impaired functioning across multiple domains (Dorsey et al., 2017). Unresolved trauma reactions in childhood have been found to persist through-out the lifespan (Anda et al., 2006). The importance of delivering timely, effective interventions to ameliorate such adverse outcomes is therefore important. Unfortunately, there is evidence to suggest that premature discontinuation from treatment following trauma is pervasive (Dorsey et al., 2017). However, the reasons for this are currently poorly understood (Ormhaugh & Jensen, 2018). This Systematic Review brings together those studies to date that have explored which factors might predict dropout from treatment in this population.

Methods

Search Strategy

Three databases were systematically searched: PsycINFO, MEDLINE and PTSDpubs (formerly the Published International Literature on Traumatic Stress; PILOTS). The following search terms were used:

Dropout OR drop out OR attrition OR retention OR premature termination OR unilateral termination OR withdrawal OR complet*

AND

Trauma* OR Post-traumatic OR posttraumatic OR PTSD or “Post traumatic stress”

AND

Child* OR Young OR adolescent OR youth OR pupil OR teenage*

AND

Psychotherapy OR therapy OR therap* OR treat* OR cognitive OR CBT OR C.B.T. OR EMDR OR "Eye Movement" OR Reprocess* OR Desensit* OR "Narrative Exposure" OR "Exposure Therapy"

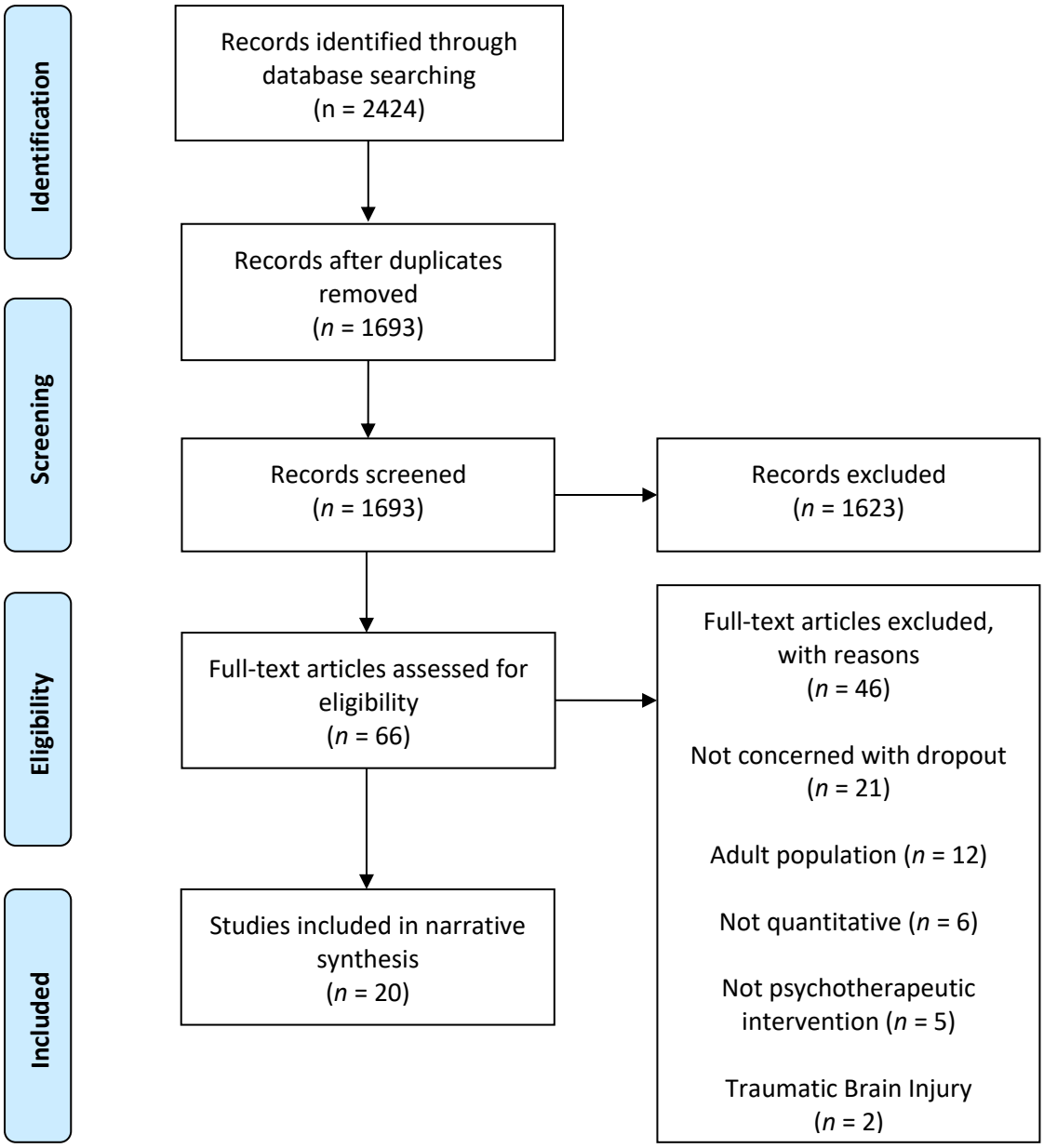
Included studies were peer-reviewed and published in the English language. The mean age of participants had to be under 19 years old. Participants had been exposed to at least one traumatic event and had some directly trauma-related mental health difficulty or distress (elevated scores on a validated clinical measure of mental health symptoms). The study must have conducted at least one quantitative analysis (correlation or regression) regarding the factors or variables that were associated with dropout from psychotherapeutic treatment for the trauma-related symptomology.

Studies were excluded if they were not peer reviewed, if there was no English language version available, if the mean age of participants was 19 or above. Studies were excluded if they were wholly qualitative in nature, or if they did not conduct a regression or correlation analysis of variables as they pertain to dropout from psychotherapeutic treatment for trauma-related mental health symptomology. There were no exclusions based on the type of psychotherapy delivered.

Study Selection

Interrogation of the databases named above produced 2424 results, of which 731 were duplicates which were removed. The first author (CS) screened the remaining 1693 studies on the basis of the title and abstract, finding 1623 to be irrelevant. Full texts for the remaining 67 studies were then obtained. Forty-seven of these did not meet eligibility criteria, leaving 20 studies to be included in the current review. The selection process is summarised in the PRISMA diagram (Moher, Liberati, Tetzlaff, & Altman, 2009) below.

Figure 1. *PRISMA Flowchart of Study Identification Process*



As the majority of included studies involved the retrospective assessment of routinely collected clinical data, did not concern an assessment of the efficacy of a particular intervention, did not recruit or randomise participants, did not involve a period of follow up, the majority of data quality assessment tools had limited applicability to the studies in question. Therefore, adaptations were made to an existing tool (the National Heart, Lung and Blood Institute Quality Assessment Tool for assessing Observational Cohort and Cross-

Sectional Studies) to tailor it to be more relevant to the nature of the studies under review, or to clarify how the questions were interpreted in this context. Seven of the questions were replaced with alternatives as is presented in Appendix B. Each study was assessed by the first author (CS). Twenty percent (n=5) of the studies were then independently assessed by the second author (PB). An inter-rater reliability measure was then calculated: Cohen's *kappa* = 0.76, indicating substantial agreement (Landis & Koch, 1977).

Data Analysis Approach

Data regarding the study design, participants, variables, measures and analyses conducted were initially extracted. There was considerable heterogeneity between the studies with respect to these factors. Bornstein et al. (2009) urge caution against converting effect sizes to a common metric in these circumstances, as the studies may differ substantively. Block and Crain (2007) argue that the product of such conversions can be misleading, pointing out that different effect sizes require different amounts of data. In light of this, a narrative synthesis approach was elected to synthesise the data arising from the reviewed studies.

Results

The 20 studies included in the review are summarised in Table 1.

Table 1. *Summary of Included Studies*

Author, Year	Country	Sample size	Age range (mean)	Trauma type	Treatment	Data source/ treatment setting	Type of dropout definition	Specific dropout definition	Dropped Out	Completed	Mean length of treatment (*SD*, range)	Variables	Analysis
Celano et al., 2018	USA	77	4 - 17 (10.87)	Child abuse	TFCBT only	Archival data from CAC within a Children's Hospital	Clinician judgement/ Treatment components completed	Worked through all components including trauma narrative, documented prospectively by supervisor, confirmed by case note review.	31.20%	68.80%	Total sample: 13.78 (0 – 29) Treatment completers: 16.85 (8 – 29)	•Demographics •Symptomology •Treatment factors	Multiple logistic regression
Chasson et al., 2008	USA	99	5 – 19 (10.88)	Child victim of violent crime	Exposure -based CBT	Subset of data from an effectiveness study	Number of sessions	For determining attrition rate = Terminating treatment before completing post-assessment. For main analysis = number of accumulated sessions.	41%	59%	Total sample: 13.61 (*10.43*) Dropouts: 5.05 (*6.02*) Treatment completers: 19.66 (*8.47*)	•Symptomology at baseline •Symptomology at termination	Multiple regression
Chasson et al., 2013	USA	134	5 - 19 (11.03)	Child victim of violent crime	Exposure -based CBT	Subset of data from effectiveness study **NB. Same sample 'with additional participants as Chasson et al., 2008**	Number of sessions	For determining attrition rate = Terminating treatment before completing post-assessment. For main analysis = number of accumulated sessions.	40%	60%	n.r.	•Demographics •Symptomology at termination •Trauma Characteristics	Multiple regression
Eslinger et al., 2014	USA	115	3 - 19 (9.67)	Mixed	TFCBT or PICT	Archival data from University-based clinic (Child and Adolescent Trauma Treatment and Training Institute)	Clinician judgement/ Treatment component completed	Full completion: mutual agreement therapist, caregiver, child that therapeutic goals met Moderate dose = either caregiver completing child-direct interaction	46% (23% moderate dose; 23% early dropout)	54%	n.r	•Demographics •Caregiver variables •Symptomology •Trauma Characteristics	Multinominal logistic regression

Author, Year	Country	Sample size	Age range (mean)	Trauma type	Treatment	Data source/ treatment setting	Type of dropout definition	Specific dropout definition	Dropped Out	Completed	Mean length of treatment (*SD*, range)	Variables	Analysis
								of PICT or child having exposure to the first cognitive processing phase of treatment in TFCBT					
Fraynt et al., 2014	USA	562[b]	2 – 18	Mixed	Trauma focused treatment.	Mental health agency participating in NCTSN	Clinician judgement	Discharge reason from clinical notes: Completed, Dropped out or Involuntarily left	39.3%[a]	37.90%	Treatment completers: 49.23 (*37.68*) Dropouts: 23.51 (*23.59*) Involuntarily left: 31.66 (*36.65*)	• Demographics • Symptom severity • Treatment factors	Multinomial logistic regression
Gharfoori et al., 2019	USA	128	Under 18 (11.53)	Crime and Violence	TFCBT or CCT	Retrospective records review of no cost community trauma recovery centre	Number of sessions	Eight sessions or more	38.2%	43%[c]	TFCBT: 10.84 (2 - 26) CCT: 9.76 (2 -23)	• Demographics • Symptomology • Trauma Characteristics • Treatment factors	Logistic regression
Lange et al., 2020	USA	1778	n.r. (11.1)	Mixed	TFCBT only	Records of children who attended community-based behavioural health outpatient clinics	Clinician judgement/ Treatment components completed	Discharge reason in clinical notes 'successfully completed Evidence Based Practice model requirements'.	39.03%	60.97%	n.r.	• Caregiver variables	T-test
Murphy et al., 2014	USA	928	7 - 19 (12.1)	Physical or sexual trauma	Trauma-oriented approach	Core Dataset from 56 NCTSN community-based sites	Clinician judgement	Clinical notes: treatment completed as planned or incomplete	56.70%	43.30%	n.r.	• Symptomology • Trauma Characteristics	Logistic regression
Ormhaugh & Jensen, 2018	Norway	156	10 - 18 (15.1)	Mixed	TFCBT or TAU	Data from 8 community child mental health centres (RCT data)	Clinician judgement	Clinical notes: treatment completed v child/parent chose to discontinue	27.40%	72.40%	Dropouts = 7.2 (*6.2*, 1 – 25) Treatment completers: 22.8 (*17.0*, 3 – 114).	• Demographics • Treatment factors	Binominal logistic regression

Author, Year	Country	Sample size	Age range (mean)	Trauma type	Treatment	Data source/ treatment setting	Type of dropout definition	Specific dropout definition	Dropped Out	Completed	Mean length of treatment (*SD*, range)	Variables	Analysis
Self-Brown et al., 2016	USA	41	3 - 18 (11.37)	Mixed	TFCBT only	Referrals to an inner-city CAC over 12-month period	Clinician judgement/ protocol led	Completed treatment plan and 'graduated from therapy services'	49%[d]	22%	Treatment completers: 24.6 (10 – 34)	• Caregiver variables	Logistic regression
Sprang et al., 2012	USA	2759	Birth to 20.9 (11.45)	Mixed	"Trauma informed evidence-based practices"	Data from NCTSN Core Dataset collected between 2004 and 2010	Clinician judgement	Recorded as having completed treatment or not.	33.20%	66.80%	n.r.	• Demographics • Symptomology • Trauma Characteristics	Hierarchical logistic regression
Steinberg et al., 2019	USA	7137	n.r. (11.0)	Mixed	TFCBT or other trauma-informed treatment	NCTSN Core Dataset collected between 2004 and 2012	Clinician Judgement	Recorded as having completed treatment as planned or not.	56%	44%	n.r.	• Demographics • Symptomology • Trauma Characteristics	Bivariate analyses of group differences
Tebbett et al., 2018	USA	104	4 - 17 (11.29)	CSA or CPA	Abuse-specific CBT or TFCBT	Clinical data from community-based clinic	Number of sessions	Failing to return for scheduled sessions after having attended at least one session.	44.20%	55.80%	n.r.	• Symptomology • Caregiver variables	Logistic regression followed by Locally Weighted Scatter-plot
Wamser-Nanney & Steinzor, 2016	USA	466	2 - 18 (9.22)	Mixed	Trauma focused treatment: TFCBT, ITCT or integrative/ eclectic approach	Referrals to Child Advocacy Centre for trauma-focused therapy – archival data and case note review	a) Clinician judgement	a) Clinician rated reason for discharge: complete or prematurely terminated	68.9%	31.1%	Total sample: 18.88 (*17.26*, 1 – 142)	• Demographics • Symptomology • Trauma Characteristics	MANOVAs Chi-Square test
							b) Number of sessions	b) "Adequate dose": 12+ sessions in 16 weeks.	41.2%	58.8%			
Wamser-Nanney & Steinzor, 2017	USA	122	3 – 18 (9.97)	Mixed	TFCBT only	Archival data from recipients of TFCBT from a Child Advocacy Centre	a) Clinician judgement	a) Clinician rated reason for discharge: complete or prematurely terminated	55.7%	44.3%	Total sample: 20.58 (*15.10*, 2 – 78)	• Demographics • Symptomology • Number of traumatic events	MANOVAs Chi-Square test
							b) Number of sessions	b) "Adequate dose": 12+ sessions in 16 weeks.	28.7%	71.3%			
Wamser-Nanney, 2020a	USA	172	6 - 18 (10.53)	Mixed	TFCBT, ITCT or integrative trauma-	Archival data from trauma-exposed children	a) Clinician judgement	a) Clinician rated reason for discharge: complete or	73.8%	26.2%	Treatment completers: 20.33 (*6.11*, 12-30)	• Demographics • Symptomology	Logistic regression

Author, Year	Country	Sample size	Age range (mean)	Trauma type	Treatment	Data source/ treatment setting	Type of dropout definition	Specific dropout definition	Dropped Out	Completed	Mean length of treatment (*SD*, range)	Variables	Analysis
					focused therapy	seeking treatment from Child Advocacy Centre		prematurely terminated			Dropouts: 10.86 (*6.11*, 1-27)		
							b) Number of sessions	b) "Adequate dose": 12+ sessions	23.8%	76.2%	Adequate dose: 19.33 (*6.25*, 12 -30) Less than adequate dose: 5.25 (*4.03*, 1 -11)		
Wamser-Nanney, 2020b	USA	189	3 – 5 (4.86)	Mixed	Trauma-focused services	Archival data from trauma-exposed children seeking treatment at Child Advocacy Centre between 2006 and 2010	a) Clinician judgement	a) Clinician rated reason for discharge: complete or prematurely terminated	70.3%	29.7%	n.r.	• Demographics • Symptomology • Number of traumatic events	Logistic regression
							b) Number of sessions	b) "Adequate dose": 12+ sessions	32.7	67.4%			
Wamser-Nanney, 2020c	USA	269	8 - 12 (9.97)	Mixed	TFCBT or ITCT	Archival data from trauma-exposed children seeking treatment from Child Advocacy Centre between 2007 and 2010	a) Clinician judgement	a) Clinician rated reason for discharge: complete or prematurely terminated	68.1%	31.9%	Total sample: 18.64 (*14.44*, 2 – 7)	• Demographics • Child and Caregiver symptom-rating concordance	Linear regression
							b) Number of sessions	b) "Adequate dose": 12+ sessions	37.4%	61.2%			
Wamser-Nanney, 2020d	USA	242	2 - 12 (7.48)	Child Sexual Abuse	TFCBT or integrative trauma-focused therapy	Archival data from trauma-exposed children seeking treatment from Child Advocacy Centre	a) Clinician judgement	a) Clinician rated reason for discharge: complete or prematurely terminated	65.6%	34.4%	Treatment completers: 25.58 (*14.55*, 7 – 73) Dropouts: 15.18 (*SD* 14.51, 1-53)	• Demographics • Symptomology (sexual behaviour problems) • Trauma Characteristics • Number of traumatic events	Logistic regression
							b) Number of sessions	b) "Adequate dose": 12+ sessions	30.6%	69.4%	Adequate dose: 26.1 (*15.8*, 12 -73)		

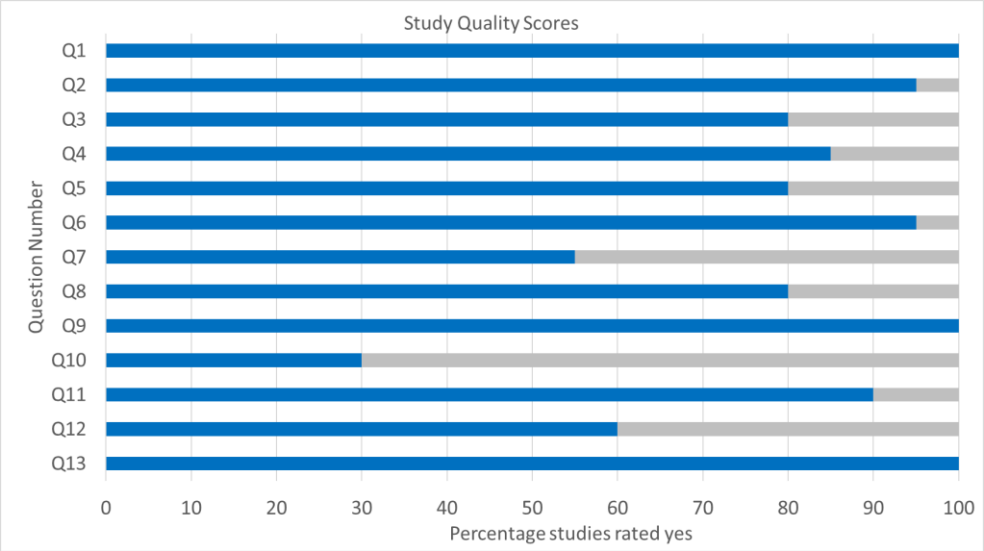
Author, Year	Country	Sample size	Age range (mean)	Trauma type	Treatment	Data source/ treatment setting	Type of dropout definition	Specific dropout definition	Dropped Out	Completed	Mean length of treatment (*SD*, range)	Variables	Analysis
											Less than adequate dose: 6.36 (*3.37*, 1 – 11)		
Yasinski et al., 2018	USA	108	7 to 17	Mixed	TFCBT	Data from treatment effectiveness trial (2006 – 2012) community mental health agencies.	Number of sessions/ Treatment components completed	Discontinuation prior to completing at least 2 sessions in trauma narrative phase (approximately 6 sessions or fewer)	26.9%	73.1%	n.r.	• Demographics • Symptomology • Caregiver factors • In-session variables	Logistic regression

Note. n.r. = not reported, CAC = Child Advocacy Centre, TFCBT = Trauma Focused Cognitive Behavioural Therapy, PICT = Parent-Child Interaction Therapy, NCTSN = National Child Traumatic Stress Network, CCT = Child-Centred Therapy, TAU = Treatment as Usual, ITCT = Integrative Treatment for Complex Trauma.

[a] 29% dropped out, 10.3% involuntarily left, 22.8% missing data. [b] All African American, Spanish speaking Latinx or English speaking Latinx. [c] 61.8% of those who attended at least one therapy session completed treatment, 43% of total sample. [d] 29% did not enrol in therapy, 49% enrolled but did not complete, 22% completed.

Study quality assessment results are summarised in the graph below (Figure 2). The mean score was 10.5 (*SD* 1.4, range 7 – 12) suggesting that the included studies were generally of high quality. The scores for each study are available in Appendix C.

Figure 2. *Quality Assessment Scores*



Q1. Was the research question or objective in this paper clearly stated?

Q2. Was the study population clearly specified and defined?

Q3. Was the relationship between independent variables and dropout assessed separately (correlational analysis) (0) or together (regression) (1)?

Q4. Were all the subjects selected or recruited from the same or similar populations (including the same time period)? Were inclusion and exclusion criteria for being in the study prespecified and applied uniformly to all participants?

Q5. Was a sample size justification, power description, or variance and effect estimates provided?

Q6. Were measures of the independent variables (e.g. symptoms, demographics, trauma history) measured prior to treatment starting?

Q7. Were the mean and range of treatment length reported clearly?

Q8. Was the treatment(s) and treatment(s) setting clearly described?

Q9. Were independent variables clearly defined, measured with valid reliable tools, consistently implemented?

Q10. Were symptoms measured more than once?

Q11. Was dropout clearly defined and applied consistently?

Q12. Was missing data appropriately handled?

Q13. Was there consideration of potential confounding variables, mediator or moderator relationships or the limitations of the study?

All but Ormhaug and Jensen's (2018) Norwegian study were from the USA. Sample size ranged from 51 to 7137. All reported data from community outpatient mental health services. Ormhaug and Jensen (2018) analysed data collected as part of a Randomised Controlled Trial (RCT), while Yasinski et al. (2018), Chasson et al. (2008) and Chasson et al. (2013) conducted secondary analysis of data from effectiveness trials. Four studies (Fraynt et al., 2014; Murphy et al., 2014; Sprang et al., 2012; Steinberg et al., 2019) used data collected as part of the National Child Traumatic Stress Network (NCTSN). The NCTSN is a major US initiative that seeks to promote the delivery of evidence-based interventions for children and young people impacted by trauma (Steinberg et al., 2014). Affiliated mental health services across the USA have contributed to a national data repository, the 'Core Data Set', which comprises standardised demographic and clinical information about the children and families that have used these services. While the studies here have derived their particular sample at different times and with different inclusion or exclusion criteria, it is likely that there is some overlap in the participants of these various studies. It is also likely that there is some overlap in participants from some of the other studies. Wamser-Nanney has authored or co-authored six of the included studies. All of these analyse data from Child Advocacy Centres (CACs). These specialist services conduct forensic interviews with children and provide trauma-focused therapy. Whilst it is not made explicit, it seems likely that the same CAC or CACs are the source of the data analysed in these studies. While the samples, analysis and focus are distinct (e.g. children aged three to five, recipients of TFCBT only, sexually abused children) it may be that some children may appear in more than one of these samples. However, such overlaps are not obvious from the text. Two studies (Chasson et al., 2008; Chasson et al., 2013) also share some participants,

although again different variables were analysed. Taken together, this necessitates caution when considering the weight of the findings detailed in this review, as the relatively large sample sizes may in truth involve a somewhat smaller number of individual children and caregivers.

Most studies involved the retrospective review of contemporaneous clinical records detailing the patient, caregiver, trauma(s), and the intervention delivered. Dropout was most often discerned from the discharge reason recorded by the therapist. This was often also done with reference to the completion of a particular protocol (e.g. Celano et al., 2018), to the delivery of key components of a protocol (Yasinski et al., 2018) or to the achievement of treatment goals (Eslinger et al., 2014). Wamser-Nanney and Steinzor (2016; 2017) and four subsequent Wamser-Nanney studies (2020a; 2020b; 2020c; 2020d) all utilised *both* a clinician-rated definition of dropout, and the concept of an 'adequate dose' (attending 12 sessions within 16 weeks). They analyse the same data twice, utilising the different definitions. In so doing, they illustrate the pertinence of how dropout is operationalised to the findings of research in this area.

Dropout rates in the included studies range from 26.9% (Yasinski et al., 2018) to 73.8% (Wamser-Nanney, 2020a). These are however, two of the smaller included studies. The largest study (Steinberg et al., 2019; $n = 7137$) reports a dropout rate of 56%. It is to be noted that the highest dropout figure of 73.8% reflects clinician-rated dropout. When 'adequate dose' is used to analyse the same dataset, the rates of dropout and completion are reversed, with 76.2% of this sample of six to eighteen-year olds receiving at least 12 sessions of trauma-focused treatment. Clearly, a proportion of those designated as dropouts by clinicians had still received significant intervention. Unfortunately, authors did not always report the range and average

length of treatment, or this is reported for the total sample, not broken down according to who did or did not complete treatment. Among those that do report this, there is significant variation. The average length of treatment for those considered to have completed treatment ranges from 9.8 sessions (Gharfoori et al., 2019) to 49.2 sessions (Fraynt et al., 2014). The longest reported completed treatment is 144 sessions (Wamser-Nanney et al., 2016). Again, it is of note that some 'dropout' cases had not inconsiderable interventions, ranging as high as 53 sessions (clinician-rated dropout, Wamser-Nanney, 2020d) a figure higher than the highest average number of sessions to complete treatment.

As well as dropout occurring after considerable intervention, there is also evidence of dropout occurring very early in treatment. Chasson et al. (2013) report that 40% of the total sample terminated treatment prematurely, and that of these 40% did so after the first session. Again the definition of dropout being utilised is significant, with some studies only counting those people who have attended at least one treatment session as having dropped out (e.g. Tebbett et al., 2018), and others also reporting the number of people who, having been referred or having completed baseline assessment, did or did not go on to enrol in treatment (e.g. Gharfoori et al., 2019; Self-Brown et al., 2016). There may be quite different factors that influence dropout after an initial contact and dropout that occurs once treatment has begun. Celano et al. (2018) found the number of pre-treatment evaluation sessions to be significant, with each additional session more than doubling the likelihood of dropout ($OR = 41$, $p = .022$).

Sociodemographic Factors

The results relating to sociodemographic variables are summarised in an effect direction plot adapted from Thomson & Thomas (2013) in Table 2.

Table 2. *Effect Direction Plot of Sociodemographic Variable Findings*

	Celano et al, 2018	Chasson et al, 2013	Eslinger et al, 2014	Fraynt et al, 2014	Gharfoori et al, 2019	Murphy et al, 2014	Ormhaug & Jensen 2018	Self-Brown et al, 2016	Sprang et al, 2012	Steinberg et al, 2019	Wamser-Nanney & Steinzor, 2016	Wamser-Nanney & Steinzor 2017	Wamser-Nanney, 2020a	Wamser-Nanney, 2020b	Wamser-Nanney, 2020c	Wamser-Nanney, 2020d	Yasinski et al, 2018
Age	● [a]	●	▲	▲	●		△ ●		●	▽	△	○	○	○	▲	●	●
Female Gender	○		○		●	▼			▽ ●	○		○	○	○	●	○	●
Minority Ethnicity			○	▲ [b]	●	▼ [c] ▲ [d]	△		▽ [c] ▲ [d]	▽ [c] ▲ [d]	△	○ (△)	○	△	△ (▲)	●	●
Insurance status	●								●								
Resides with parents			▲				○		△		○	○	○	●			△
Household income							○				▽(○)	▼ (○)		▽ (●)		▼(●)	●
Refugee status									▽								
Non-US born									▼								
English not first language									▼								
Caregiver education								●			▼(▽)	▼(○^)					
Parents married											▽ (○)	○	○	●			
Prior CPS Involvement											△ (○)	△ (○)	○	●	●	△ (●)	

Table 2 continued

	Celano et al, 2018	Chasson et al, 2013	Eslinger et al, 2014	Fraynt et al, 2014	Gharfoori et al, 2019	Murphy et al, 2014	Ormhaug & Jensen 2018	Self-Brown et al, 2016	Sprang et al, 2012	Steinberg et al, 2019	Wamser-Nanney & Steinzor, 2016	Wamser-Nanney & Steinzor 2017	Wamser-Nanney, 2020a	Wamser-Nanney, 2020b	Wamser-Nanney, 2020c	Wamser-Nanney, 2020d	Yasinski et al, 2018
Prior CPS Placement											▲ (○)	○					
Distance from Clinic											○	○		● (⮝)			
No. of children in household								●									

Note. CPS = Child Protective Services

[a] In aged 6 and over. [b]African Americans attended significantly fewer sessions and were more likely to drop out that English or Spanish speaking Latinx. [c]Hispanic ethnicity (v non-Hispanic ethnicity) was associated with completing treatment. [d]African Americans were more likely to dropout than any other group.

Effect direction: ▲= positive association with dropout, ▼ = negative association with dropout, ⮝ = predicted greater dropout, ⮟ = predicted less dropout, ○ = Not a significant correlate; ● = Not a significant predictor; ^ = approached significance.

Sample size: large △ = >500; medium △ =150-500; small ▵ <150

Statistical significance: grey arrow = $p < 0.05$; black arrow = $p < 0.01$

Where a correlate was found by bivariate analysis but when included in regression model with other variables it was no longer significant both symbols appear e.g. ▼●

Where ‘adequate dose’ (12 sessions) definition produced a different outcome than clinician rated dropout, the adequate dose finding appears in brackets e.g. ● (⮝)

Age

All but two studies conducted analysis of demographic variables and their relationship to attrition. Fourteen analysed child age, only six of which yielded significant results: all but one linking older age with increased likelihood of dropout. Ormhaug and Jensen's (2018) analysis of data from a RCT comparing TFCBT with Treatment as Usual in eight community health services in Norway found older age increased the odds of dropout (*OR* 1.28, $p = .033$), but only in one of their logistic regression models, which included variables pertaining to youth-rated therapeutic alliance. In the other models, which included treatment and caregiver variables, age was not found to be a significant predictor of dropout. Age was however related to caregiver participation, which was more likely for younger children. This suggests that age may have an indirect link with dropout, that is better explained with reference to the role of caregivers in treatment. Notably three large studies, each using NCTSN Core Data Set, arrived at differing conclusions about the role of age in attrition. Steinberg et al.(2019) found a significant difference in the mean age of completers and non-completers, with the latter being younger, although the difference was very slight (11.1 years old v 10.9 years old). Sprang et al. (2012) did not find any significant role for age. However, Fraynt et al. (2014) found that for young people in their sample (which only included African American or Hispanic children) every additional year of age increased the chances of dropout by 1.08 times.

Eslinger et al. (2014) also found that as children got older, the chances of them completing treatment diminished (Exp(*B*) =0.8, $p \leq .5$). Wamser-Nanney and Steinzor (2016) found older age correlated with clinician determined dropout, but not a with their 'adequate dose' definition of having completed 12 or more sessions

within 16 weeks. Older age was a significant predictor of dropout according to both definitions for the eight to twelve-year olds in Wamsey-Nanney (2020c) with a greater effect size for 'adequate dose' of treatment ($OR = 0.86$, $p = .01$; $OR = 7.68$, $p = .006$).

Gender

Gender was analysed in 12 studies, all but two of which found it to be non-significant. Sprang et al. (2012) found an association between male gender and dropout, however this did not continue to be significant when controlling for other variables. Only Murphy et al. (2014) found gender to predict completion status, finding that male victims of physical and sexual trauma treated within NCTSN services were less likely to complete treatment, even when controlling for symptom severity.

Ethnicity

Murphy et al. (2014) also found that ethnicity was significant to the likelihood of completion for victims of both physical and sexual trauma. Only 16.4% of Black participants completed treatment compared to 64.3% of White participants. Non-Black minority and 'multi-racial' groups were also significantly less likely to complete treatment, while Hispanic Americans were more likely to complete treatment. Fraynt et al. (2012), conscious that previous research (e.g. Ambruster & Fallon, 1994) indicated that ethnic minorities may be at increased risk of non-completion, but that differences between ethnic groups may be masked in studies that do not differentiate between them, included only African Americans, English speaking Latinx and Spanish speaking Latinx in their study. They found African Americans attended significantly fewer sessions and were more than twice as

likely to drop out than Spanish speaking Latinx (*OR*=0.45, *p*<.05). Moreover, these differences persisted once controlling for other variables such as age, level of impairment and treatment format. Sprang et al. (2012) also found that Hispanic children were more likely to complete treatment, but that this was no longer significant once they controlled for the particular clinical setting, reflecting that some sites served predominantly Hispanic communities. Sprang et al. (2012) conducted a separate regression model just including White and African American children concluding that African American children were 85.4% more likely to drop out from treatment than their White counterparts. Some minority groups showed association with relatively increased retention however: Sprang et al. (2012) found that being born outside of the USA, having refugee status, and English not being the primary language, reduced the chances of dropout from treatment, although sample sizes for these characteristics were small.

Living Circumstances

Sprang et al. (2012) also found, in accordance with Yasinski et al. (2018), that children living with their biological parents, as opposed to those placed with other relatives, foster carers or other settings, were less likely to complete treatment. However, prior Child Protective Services (CPS) involvement, and prior CPS placement, was found to be associated with clinician-rated dropout by Wamser-Nanney and Steinzor 2016, although the effect sizes were small (Cohen's *d* = .2, *d* =.25 respectively) and there was no such relationship for the chances of receiving an 'adequate dose'. Similarly, higher household income was associated with clinician-rated completion (Wamser-Nanney and Steinzor, 2016; 2017; Wamser-Nanney, 2020c; 2020d) but the definition of adequate dose did not yield significant results.

Lower levels of parental education were correlated with both definitions of dropout in Wamser-Nanney & Steinzor's 2016 study, but not found to be significant in Self-Brown et al.'s albeit smaller study of the same year. Parental marital status was also found to have a moderate sized effect (Cohen's d =.4, p<.001), with children of unmarried parents more likely to be rated by their clinician as having dropped out (Wamser-Nanney & Steinzor, 2016). This finding was not replicated by subsequent studies, however. Distance from the clinic, a potential practical barrier to treatment was largely found not to be significant, bar in a single analysis, where Wamser-Nanney (2020b) found greater distance to slightly increase the likelihood of dropout (OR =0.97, p<.05). This sample was composed of children aged between three and five, which may have made travel especially onerous.

Trauma Characteristics

The results relating to trauma variables are summarised in Table 3. Total number of traumatic events a young person had been exposed to, was the most frequently explored trauma variable, featuring in seven of the 20 studies, with mixed findings. Murphy et al. (2014) found the number of traumatic events to be non-significant, while Ormhaug and Jensen (2018) found that dropout correlated with higher number of traumas in bivariate analysis (X^2 =7.3, p=.27) but when included in logistic regression with other treatment and caregiver variables, number of traumas, it was not significant. Wamser-Nanney and Steinzor (2016; 2017) also found correlations between higher number of traumatic events and dropout as rated by clinicians, but again their analyses examined each variable individually rather than in combination. Wamser-Nanney (2020b; 2020d) did conduct logistic regression analyses, finding number of traumatic events to be a significant predictor of

clinician-rated dropout in both studies (*OR* = 0.68, *p*<.05; *OR* = 0.73, *p*=.004). As previously, the ‘adequate dose’ definition did not find this same relationship.

Table 3. *Effect Direction Plot of Trauma Variable Findings*

	Chasson et al, 2013	Eslinger et al, 2014	Gharfoori et al,2019	Lange et al, 2020	Murphy et al, 2014	Ormhaug & Jensen, 2018	Sprang et al, 2012	Steinberg et al, 2019	Wamser-Nanney & Steinzor, 2016	Wamser-Nanney & Steinzor, 2017	Wamser-Nanney, 2020b	Wamser-Nanney, 2020d
No. of traumatic events	▼ [a]				○	△ ●			▲ (○)	▲ (○)	△ (●)	▲ (●)
Direct victim (vs indirect)	●											
Threat to life or physical harm	▼											
Relationship to perpetrator	▼ [b]											●
Type of trauma	●	○	●		◊							
Community Violence							▽ ●	▲				
Psychological abuse							○	▲				
Physical abuse							○	▲				
Neglect							○	▲				
Sexual Assault							○	▲				
Physical assault							○	▲				
School violence							▽ ●	○				

Table 3 continued

	Chasson et al, 2013	Eslinger et al, 2014	Gharfoori et al, 2019	Lange et al, 2020	Murphy et al, 2014	Ormhaug & Jensen, 2018	Sprang et al, 2012	Steinberg et al, 2019	Wamser-Nanney & Steinzor, 2016	Wamser-Nanney & Steinzor, 2017	Wamser-Nanney, 2020b	Wamser-Nanney, 2020d
Illness/medical							▽ ●	o				
War/Violence outside USA							▽ ●	o				
Other							⮟	o				
Complex trauma exposure									o			

[a] Single incident trauma predicted higher dropout. [b] Dropout was more likely where perpetrator was an older child versus a parental figure.

Effect direction: ▲= positive association with dropout, ▼ = negative association with dropout, ⮝ = positive predictor of dropout, ⮟ = negative predictor of dropout, o = Not a significant correlate, ● = Not a significant predictor, ^ = approached significance, ◊ mediated relationship – sexual trauma predicted higher avoidance symptoms which was predictive of dropout.

Where an correlate was found by bivariate analysis but when included in regression model with other variables it was no longer significant both symbols appear e.g. ▼●

Where 'adequate dose' definition produced a different outcome than clinician rated dropout, the adequate dose finding appears in brackets e.g. ● (⮝).

Sample size: large △ = >500; medium △ =150-500; small △ <150.

Statistical significance: grey arrow = $p < 0.05$; black arrow = $p < 0.01$.

In contrast to the above, and against their expectations, Chasson et al. (2013) found that multiple traumatic events were predictive of lower dropout among child victims of violence. Chasson et al.'s (2013) findings are worthy of particular mention, as they found that the trauma characteristics that they investigated ran in the opposite direction to the hypothesised effect. For instance, there was a higher likelihood of dropout for young people who had experienced a single trauma, who were not at risk of death or physical injury and for whom the perpetrator was an older child rather than a parental figure. Chasson et al.'s (2013) hypotheses build upon the previous Chasson et al. (2008) study, (discussed further below) wherein avoidance symptoms immediately prior to termination – but not at baseline – were significantly related to the number of sessions completed. Thus, they reasoned, more traumatising events would give rise to greater symptoms, and precipitate dropout, particularly in the context of an exposure-based treatment. This was not borne out by their findings. Moreover, in contrast to previously (Chasson et al., 2008), they found that avoidance symptoms at the point of termination were no longer significant, once age and the additional trauma characteristic variables were included. This was noted, despite the fact that they were using much of the same sample as previously.

Murphy et al. (2014) also explored the relationship between trauma type and dropout in children and young people who had experienced physical and sexual trauma. In independent logistic regressions trauma type (physical or sexual) was not related to treatment completions. However, they found that symptoms mediated the relationship between trauma type and dropout. Sexual assault was significantly associated with higher avoidance symptoms. This in turn lowered the likelihood of

treatment completion. Physical assault was associated with higher hyperarousal symptoms, but these were found to be unrelated to dropout.

Sprang et al. (2012) found community and school violence, illness and medical trauma, war or violence outside the US, were associated with higher chances of treatment completion. However, when included in their regression, trauma type predicted dropout in one instance: where the trauma was categorised as 'other' in the NCTSN clinical records, children and young people were less likely to drop out from treatment (*OR* =.55, *p* =.006). They note that this means that the trauma did not fit within any of the 19 specified potential traumatic events, leading them to wonder if these other experiences are less likely to have constituted an 'actual or threatened death or serious injury, or a threat to the physical integrity of self or others' (Criterion 1A for diagnosis of PTSD according to the Diagnostic and Statistical Manual of Mental Disorders 4th Edition: DSM-IV-TR; American Psychiatric Association, 2000), distinguishing this group from much of their sample.

Steinberg et al. (2019) also analysed NCTSN data but came to quite different findings regarding trauma type. Each of the trauma types that correlated with lower dropout in Sprang et al. (2012), were non-significant. Moreover, they found that community violence increased dropout, and so too did psychological or physical abuse, sexual or physical assault and neglect.

Wamser-Nanney and Steinzor (2016) were alone in considering exposure to 'complex trauma' as a predictor. Complex trauma is characterised by chronic and multiple trauma, often from a young age. They did not find this was associated with differential rates of dropout, unlike the absolute number of traumatic events, suggesting that an accumulation of different traumatic events is more influential for treatment attrition than the type of traumatic exposure. However, this sample is

relatively small and the ability to accurately assess the presence of complex trauma from clinical records may be imperfect.

Symptomology

The results relating to symptom variables are summarised in Table 4.

Emotional and Behavioural Symptoms

There has been consideration about the role symptoms have in attrition from treatment in multiple studies. Unfortunately, different authors have often used different measures when assessing the role of similar constructs, limiting the potential for drawing comparisons across studies with confidence. One of the more frequently used measures is the Child Behaviour Check List (CBCL; Aschenbach & Rescorla, 2001), a well validated tool with a version for different age groups (1.5 to 5, and 6 to 18) completed by parents or caregivers. This tool is composed of subscales assessing a range of emotional and behavioural difficulties, which are summed to produce scores for externalising problems (e.g. aggression, rule breaking), internalising problems (e.g. anxious/depressed, somatic complaints) and a total score. Nine studies made use of the CBCL, with six finding significant results. Eslinger et al. (2014), Gharfoori et al. (2019) and Yasinski et al. (2018) each found no relationship between dropout and CBCL scores, although it is to be noted these are all studies with relatively small sample sizes (n <150) and therefore may not have had sufficient power to detect small/moderate differences. Sprang et al.'s (2012) much larger study (n= 2759) did find that dropouts had a significantly higher mean on externalising behaviours (M =63.31, SD = 11.36) than did completers (M = *61.9,* SD= 11.57). So too did Steinberg et al. (2019) (n = 7137) who found higher scores on both externalising behaviour and total CBCL score were associated with dropout.

Table 4. *Effect Direction Plot for Symptom Variable Findings*

	Celano et al, 2018	Chasson et al, 2008	Chasson et al, 2013	Eslinger et al, 2014	Fraynt et al, 2014	Gharfoori et al, 2019	Murphy et al, 2014	Ormhaug & Jensen, 2018	Sprang et al, 2013	Steinberg et al, 2019	Tebbett et al, 2018	Wamser-Nanney & Stenizor, 2016	Wamser-Nanney & Stenizor, 2017.	Wamser-Nanney, 2020a	Wamser-Nanney, 2020b	Wamser-Nanney, 2020c	Wamser-Nanney, 2020d	Yasinski et al, 2018
Symptom (measure)																		
Parent Report Emotional and Behavioural Problems (CBCL)																		
Total Score				o						▲		o	o					
Total Internalising Symptoms						●			o^	o		o^	o		●			●
Total Externalising Symptoms						●			▲	▲		o (△[a])	o		(▲)			●
Somatic Complaints												▼ (▽[a])	o	o (▽●)				
Withdrawn/Depressed												▲[b] (o)	o	o				
Aggressive Behaviour												△[b] (o^)	o (△)	▲●^ (○)				
Attention Problems												o (△[b])	o	o				
Rule-breaking behaviour												o	o (▲)	▲● (o)				
Anxious/Depressed												o	o	o (▼●)				
Baseline PTS symptoms (UPID-RI, PTSD-RI, CPSS, IES)																		
Total Score	o[a]	o		●[c]			●^	o	o	o	●	o	o					●
Re-experiencing																		

Table 4 continued

	Celano et al, 2018	Chasson et al, 2008	Chasson et al, 2013	Eslinger et al, 2014	Fraynt et al, 2014	Gharfoori et al, 2019	Murphy et al, 2014	Ormhaug & Jensen, 2018	Sprang et al, 2013	Steinberg et al, 2019	Tebbett et al, 2018	Wamser-Nanney & Stenizor, 2016	Wamser-Nanney & Stenizor, 2017.	Wamser-Nanney, 2020a	Wamser-Nanney, 2020b	Wamser-Nanney, 2020c	Wamser-Nanney, 2020d	Yasinski et al, 2018
Avoidance							△											
Arousal							○											
PTS symptoms at termination (IES)																		
Avoidance		▲	●															
Intrusion		△																
Depression at baseline (CDI)																		
		○																
Depression at termination (CDI)																		
		○																
Self-Report Symptoms (TSCC-A)																		
Total Score									○									
PTSS										○		○	○	○				
Anxiety										○		○	○	○ (▽)				
Anger										○		○	○	○				
Depression										○		○	○	○				

Table 4 continued

	Celano et al, 2018	Chasson et al, 2008	Chasson et al, 2013	Eslinger et al, 2014	Fraynt et al, 2014	Gharfoori et al, 2019	Murphy et al, 2014	Ormhaug & Jensen, 2018	Sprang et al, 2013	Steinberg et al, 2019	Tebbett et al, 2018	Wamser-Nanney & Stenizor, 2016	Wamser-Nanney & Stenizor, 2017.	Wamser-Nanney, 2020a	Wamser-Nanney, 2020b	Wamser-Nanney, 2020c	Wamser-Nanney, 2020d	Yasinski et al, 2018
Dissociation												o	o	o				
Clinician-rated impairment																		
Functional Impairment					▲													
Internalising symptoms					▼													
Parent Report Emotional and Behavioural Symptoms (BASC-2, PRS)																		
Internalising											▪							
Externalising											□ ▲							
Parent Report PTS Symptoms (TSCYC)																		
Total score												o	o					
Anxiety												o	o	o (▼●)	●			
Anger												o	o	▲ (▼●)	▼			
Depression												o	o	o (▼●)	●			
PTSS												o	o	o (▼●)	● (▼)			
Sexual Concerns												o	o	o (▼)	● (▼)			

Table 4 continued

	Celano et al, 2018	Chasson et al, 2008	Chasson et al, 2013	Eslinger et al, 2014	Fraynt et al, 2014	Gharfoori et al, 2019	Murphy et al, 2014	Ormhaug & Jensen, 2018	Sprang et al, 2013	Steinberg et al, 2019	Tebbett et al, 2018	Wamser-Nanney & Stenizor, 2016	Wamser-Nanney & Stenizor, 2017.	Wamser-Nanney, 2020a	Wamser-Nanney, 2020b	Wamser-Nanney, 2020c	Wamser-Nanney, 2020d	Yasinski et al, 2018
Caregiver – Child reported Symptom Discordance (as rated on TSCC and TSCYC)																		
Anxiety																▼ (▼)		
PTSS																● (▲)		
Sexual Behaviour Concerns (CSBI-3)																		
Developmentally Related Sexual Behaviour																	●	
Abuse Related Sexual Behaviour																	●	
Suspected or Diagnosed																		
Major Depressive Disorder									▼									
Oppositional Defiant Disorder									▼									
Post-traumatic Stress Disorder									▼									
Generalised Anxiety Disorder									▲									
Attention Deficit Hyperactivity Disorder									●									
Conduct Disorder									●									

Note. CBCL = Child Behaviour Checklist; UPID = UCLA PTSD Reaction Index; CDI – Children's Depression Inventory; CPSS = Child PTSD

Symptom Scale; IES = Impact of Events Scale; TCSS-A = Trauma Symptom Checklist for Children; TSCYC = Trauma Symptom Checklist for Young Children; CSBI-3 = Child Sexual Behaviour Inventory - Third Edition.

[a] Aged 6 and over. [b] Aged under 6 only. [c] TSCC-A and TSCYC were combined to produce Post-traumatic Symptoms score.

Effect direction:

▲= positive association with dropout, ▼ = negative association with dropout

⮝ = predicted greater dropout, ⮟ = predicted less dropout

■ = Quadratic relationship $p<.01$, □ = Quadratic relationship $p<.05$

ⴰ = Not a significant correlate; ● = Not a significant predictor; ^ = approached significance

Sample size: large △ = >500; medium △ =150-500; small ▵ <150

Statistical significance: grey arrow = $p < 0.05$; black arrow = $p < 0.01$

Where a correlate was found by bivariate analysis but when included in regression model with other variables it was no longer significant both symbols appear e.g. ▼●

Where 'adequate dose' (12 sessions) definition produced a different outcome than clinician rated dropout, the adequate dose finding appears in brackets e.g. ● (⮝)

Wamser-Nanney and Steinzor (2016; 2017) found that total score, internalising and externalising symptoms were not significant using the clinician-rated definition of dropout, but externalising symptoms were correlated with dropout when using 'adequate dose' (Wamser-Nanney & Steinzor, 2016). Wamser-Nanney (2020b) found that more externalising symptoms predicted dropout according to both clinician-rated and 'adequate dose' definitions. None of the studies reported a significant relationship between dropout and internalising symptoms score, although Sprang et al. (2012) found it approached significance (p=.06), as did Wamser-Nanney and Steinzor (2016) (also (p=.06)), but only for the under-six age group. More fine-grained analysis of the various subscales found that levels of aggressive behaviour, attention problems, withdrawal/depression and rule-breaking behaviour were higher in dropouts (Wamser-Nanney and Steizor 2016, 2017; Wamser-Nanney 2020a) with small to medium effect sizes (Cohen's d .023 – 0.67). However, they were also found to be non-significant at least as often, with no subscale yielding consistently significant findings, and no regression model finding significance. Running in the other direction, higher somatic complaints were associated with higher completion rates (Wamser-Nanney and Steinzor, 2016; Wamser-Nanney, 2020a) but again, it was found not to be just as often. One study found scores for anxious/depressed increased completion (Wamser-Nanney, 2020) but when controlled for by other variable in a regression, it was not a significant predictor.

Fraynt et al. (2014) used clinician ratings of functional impairment and of internalising symptoms. Curiously, this study found that functional impairment predicted more sessions being attended, but also that higher degrees of functional impairment predicted dropout rather than completion. Greater internalising symptoms predicted high likelihood of treatment completion.

Trauma Symptoms

Different indices were used by researchers to assess the role of trauma-related symptoms. No study found a significant relationship between dropout and total scores at baseline of post-trauma symptoms on widely utilised measures (UCLA Posttraumatic Stress Disorder-Reaction Index (Child Version); Pynoos et al., 1998; Child Posttraumatic Stress Symptoms (CPSS); Foa, Johnson, Feeny, & Tredwell, 2001; Impact of Events Scale (Horowitz, Wilner, & Alvarez, 1979). Murphy et al.'s large 2014 study did not find total PTSD score to be significant ($p<.10$) but as noted above, they did find that higher 'Cluster C' symptom (avoidance) scores predicted greater dropout, although the relationship was slight ($\beta = -0.09$, $p<.05$). Also noted above, Chasson et al. (2008) found PTSD symptoms were not significant predictors at baseline but that higher avoidance symptoms were temporally linked to number of sessions attended, with higher avoidance scores at the point of termination. This finding no longer held when additional variables were included by Chasson et al. (2013).

The Trauma Symptom Checklist for Children (TSCC; Briere, 1996) is a self-report measure of trauma-related symptoms for children aged between eight and sixteen. In the three studies in which it was used (Wamser-Nanney and Steinzor, 2016, 2017; Wamser-Nanney 2020a) only one scale was significantly associated with dropout: higher anxiety was associated with having an adequate dose of treatment (Cohen's $d = 0.5$, $p < .05$). The Trauma Symptom Checklist for Young Children (TSCYC; Briere 2005; Briere et al., 2001) is a caregiver report of trauma-related symptoms in children aged between three and twelve. Again, there were a number of non-significant results, with those results that were significant clustering in one particular study and the use of the 'adequate dose' definition. Wamser-Nanney and

Steinzor (2017) found that higher TSCYC scores for anxiety, anger, depression, sexual concerns and total PTSD score, were all associated with increased treatment completion with medium, large and very large effect sizes (Cohen's *d* 0.52 – 1.06). Only scores for dissociation were not significant. When these variables were entered into a regression, the only one to yield a significant result was sexual concerns. Given this scale is for younger children, it is perhaps not surprising that where parent-rated sexual concerns are higher, treatment is more likely to continue at least to the point of receiving an 'adequate dose'. Higher parent-rated child anger was also associated with higher rates of clinician-rated dropout (Cohen's d=.42, p<.05).

Sprang et al. (2012) reviewed case notes for clinically evaluated symptoms or diagnoses at baseline, finding that children with a diagnosis of PTSD were 1.57 times more likely to leave treatment prematurely than those without this diagnosis. Suspected or diagnosed Oppositional Defiant Disorder or Depression, also predicted dropout, while suspected or diagnosed Generalised Anxiety Disorder predicted treatment completion (OR = .54 and OR =.73 respectively).

Tebbett and colleagues (2018) investigated both child report and caregiver report of symptoms for their sample of 104 children and adolescents receiving abuse-focused cognitive behavioural therapies. They found that self-reported symptoms via CPSS scores were not related to dropout, nor were self-reported internalising symptoms. However, there were quadratic relationships detected with regards to parent reports of their child's internalising and externalising symptoms. Both high and low internalising symptoms were predictive of dropout, meaning those with moderate internalising symptoms had the best chances of completing treatment. There was both a linear and a quadratic relationship with parent-reported

externalising, with only those children whose parents reported low levels of externalising symptoms having a greater probability of completing.

Symptom discordance between child and parent report was investigated in more depth by Wamser-Nanney (2020c). She found that across the board, there were low levels of agreement between reported child or caregiver symptoms. Where there was greater agreement in reported post-traumatic stress symptoms, the chances of the child receiving an adequate dose of treatment was increased. However, where there was a high degree of discordance between child and caregiver reported anxiety symptoms, the chances of completing or receiving an adequate dose of treatment also increased. As anxiety symptoms were the only area where child and caregiver scores correlated, disagreement with respect to this was unusual. This finding implies that where it did occur, if one party – whether child or caregiver – perceives anxiety to be high, this may be enough to promote retention.

Steinberg et al. (2019) found some symptom difference between completers and non-completers at baseline (above), but also the trajectory of symptom change differed between these groups. Completers showed steeper slopes of symptom decline, were less likely to fall within the clinical range and had fewer behavioural problems and impairment, at follow up. While both groups demonstrated therapeutic benefits, this study underscores the additional gains that come from completing a full course of treatment.

Caregiver Variables

Findings with respect to caregiver variables are summarised in Table 5. Caregivers have a pivotal role in facilitating access to treatment for children and young people, both practically and in terms of modelling or promoting positive engagement. Moreover, caregivers are frequently active participants in trauma-

Table 5. *Effect Direction Plot of Caregiver Variable Findings*

	Eslinger et al, 2014	Lange et al, 2020	Self-Brown et al, 2016	Tebbett et al, 2016	Yasinski et al, 2018
Caregiver age	⮟		●		●
Parenting Stress (PSI)	o				
Caregiver Satisfaction		▼			
Caregiver trauma exposure (PDS)			●		
Caregiver PTSD symptoms (PDS)			●		
Caregiver Clinical Symptoms (BSI-GSI)				●	

Note. PSI = Parenting Stress Index; PDS = Post-traumatic Diagnostic Scale; BSI-GSI = Brief Symptom Inventory – Global Severity Index

Effect direction: ▲= positive association with dropout, ▼ = negative association with dropout

⮝ = positive predictor of dropout, ⮟ = negative predictor of dropout

o = Not a significant correlate, ● = Not a significant predictor, ^ = approached significance

Where a correlate was found by bivariate analysis but when included in regression model with other variables it was no longer significant both symbols appear e.g. ▼●

Where 'adequate dose' definition produced a different outcome than clinician rated dropout, the adequate dose finding appears in brackets e.g. ● (⮝)

Sample size: large △ = >500; medium △ =150-500; small △ <150

Statistical significance: grey arrow = $p < 0.05$; black arrow = $p < 0.01$

focused treatments. Eslinger et al. (2014) found caregiver age to be predictive of dropout, with the children of younger caregivers less likely to complete treatment. It is to be noted that there is the possibility that trauma impacts both child and caregiver

in similar ways or that caregivers may themselves have been victim of different traumas. Tebbett et al. (2018) considered whether caregiver symptomology would itself be predictive of dropout, however they found caregiver scores on the Brief Symptom Inventory (BSI; Derogatis 1993) were not significant. Self-Brown et al.'s (2016) mixed methods study did not find any significant quantitative relationship between caregiver variables and dropout but did find that the level of trauma exposure among caregivers to be high. Seventy-eight percent of caregivers whose child completed treatment reported exposure to traumatic events, and forty-four percent met criteria for a PTSD diagnosis. Rather than this translating into equivocation about accessing treatment for their children, 63% of those whose child completed treatment cited their own experience of abuse as a reason they had sought treatment for their child. Almost all those who did not enrol their child in treatment cited concrete barriers such as scheduling difficulties with work/school, and transport, but they also had more misgivings about treatment. Over 60% expressed the view that therapy may exacerbate traumatic experiences, while less than 25% of those who enrolled their child held the same view.

Lange and colleagues (2020) found that in their study of 1778 child-caregiver dyads, caregiver satisfaction was found to correlate with TFCBT completion. They also found evidence that logistical issues such as scheduling are frequently identified as barriers to treatment by caregivers. Their participants identified Psychoeducation, Relaxation and Affect Regulation as being the most helpful elements of treatment. However, in-vivo exposure, one of the key mechanisms which underpins TFCBT (Cohen et al., 2006) was endorsed the least, with only 0.1% identifying it as the most helpful.

Treatment Variables

The findings for treatment variables are presented in Table 6. The most common specific treatment in the included studies was TFCBT. Other interventions were described as 'trauma-focused' approaches. Two studies directly addressed whether people receiving TFCBT were more likely to drop out than those receiving other treatments. Gharfoori et al. (2019) compared TFCBT with Child-Centred Therapy (CCT) in their sample of 128 young people who had experienced crime or violence and sought treatment from a community out-patient, no cost clinic. Of these, 39 (30.5%) did not attend the first session. Eighty-nine (69.5%) attended at least one session, and of these only 55 (43% of the total sample) completed treatment. While age, gender, ethnicity, type of trauma, internalising or externalising symptoms did not differentiate between those who did not start, did not complete or did complete treatment, 70.6% of TFCBT recipients completed treatment, compared to just 50% of recipients of CCT. The same study also considered what influenced the type of treatment that was offered. Again, type of trauma, age, gender, internalising symptoms were not found to influence treatment selection. However, Black young people were significantly more likely to be offered TFCBT than White young people. In addition, young people with higher externalising symptoms were less likely to be offered TFCBT. This is surprising as there is evidence to suggest that TFCBT is effective at treating externalising behaviour (Dorsey et al., 2014).

Ormhaug and Jensen (2018) found that TFCBT did not significantly differ in terms of dropout from Treatment as Usual. They did however find other treatment variables explaining some of the variance in dropout. They found that caregiver attendance at the first session was predictive of lower attrition. They also examined how therapeutic alliance at the start of treatment influenced attrition, arguing that, as

Table 6. *Effect Direction Plot of Treatment Variable Findings*

	Celano et al, 2018	Fraynt et al, 2014	Gharfoori et al, 2019	Ormhaug & Jensen, 2018	Wamser-Nanney, 2020a	Yasinski et al, 2018
Type of Treatment = TFCBT			▼	●		
Licenced Clinician					○	
No. of diagnostic sessions	▲					
Caregiver attendance in first session				▼		
Non-primary caregiver attendance	▼					
Group Sessions (%)		•				
Family Sessions (%)		○				
'Field Services' (%)		•				
Therapeutic Alliance (TASC-R)						
Youth/Therapist (Youth perceived)				●		
Therapist/Youth (Therapist perceived)				▼		
Caregiver/Therapist (Caregiver perceived)				●		
Caregiver/Therapist relationship (observer rated)						•
Child/Therapist relationship (observer rated)						
Support						•
Difficulties						▲
Youth-perceived parental approval of treatment (CAPPATS)				▼		
In-session child variables (observer rated)						
Avoidance						▲
Hope						•
In-session caregiver variables (observer rated)						
Avoidance						▲
Blame						•
Support						•

Note. TFCBT = Trauma-Focused Cognitive Behavioural Therapy; TASC-R = Therapeutic Alliance Scale for Children – Revised; CAPPATS = Child and Adolescent-Perceived Parental Approval of Treatment Scale

Effect direction: ▲= positive association with dropout, ▼ = negative association with dropout.
➤ = positive predictor of dropout, ➤ = negative predictor of dropout.
o = Not a significant correlate, ● = Not a significant predictor, ^ = approached significance.
Where an correlate was found by bivariate analysis but when included in regression model with other variables it was no longer significant both symbols appear e.g. ▼●
Where 'adequate dose' definition produced a different outcome than clinician rated dropout, the adequate dose finding appears in brackets e.g. ● (▲)
Sample size: large △ = >500; medium △ =150-500; small △ <150
Statistical significance: grey arrow = $p < 0.05$; black arrow = $p < 0.01$.

a lot of dropout occurs early in treatment, these initial impressions of the therapeutic relationship are critical. They found therapeutic alliance unrelated to dropout, regardless of whether it was rated by the caregiver or young person. However, the young person's perceptions of their caregiver's approval of therapy did predict dropout, with children who perceive their parent to view treatment more favourably more likely to remain in treatment. This suggests that young people are particularly sensitive to how their parent views treatment and preference this over their own perception of alliance with their therapist. It is also not clear whether perceptions of alliance might change over subsequent sessions, given dropout may well occur at a significantly later point to when these measures were taken.

Therapeutic alliance and other in-session variables were also explored by Yasinski and colleagues (2018). They used audio-recordings of sessions in the first

phase of treatment. These were coded by researchers to identify evidence of avoidance, hope, caregiver blame of child, therapist support and therapeutic relationship difficulties. In-session child and caregiver avoidance were associated with a higher likelihood of dropout. Relationship difficulties between therapist and child increased the chances of dropout. Therapeutic relationship difficulties were themselves correlated with child avoidance.

In addition to type of treatment, format of delivery has been considered. Fraynt et al. (2014) found that the greater the number of family sessions, the fewer sessions were attended. Children who received no family treatment attended 1.52 times more sessions than children who received only family treatment. In contrast, group treatment predicted greater attendance, with those who received all group treatment attending 1.72 times more sessions than children who received no group treatment. However, neither group treatment nor family sessions were found to be predictors of dropout.

Discussion

There has been increasing interest in the factors that influence dropout from psychological treatment among children and young people who have been exposed to trauma. This interest is warranted given the high rates of dropout found in the studies reviewed here, eleven of which reported more people dropping out of treatment than completing it. However, research to date does not allow for making clear conclusions about what factors are most important in predicting dropout, with several authors producing apparently conflicting findings, and an over-representation of samples from the USA. Perhaps unsurprisingly, no one factor, or group of factors, has emerged as a consistent and strong determinant. The ability of research to address this question is complicated further since it is likely that the decision to stop

treatment reflects an accumulation of different risk factors for dropout, as described in the barriers-to-treatment model (Kadzin et al., 1997).

Those findings which were most generalisable are presently summarised. Sociodemographic factors were often analysed but frequently found to be non-significant. Where significant effects have been found, the general direction tended to agree across studies. Where age was significant, most often older age was associated with greater dropout, although Steinberg et al. (2019) found the reverse to be true. However, the difference in the mean age of dropouts and completers was very slight (a couple of months), perhaps reflecting a statistically significant but not clinically meaningful result consequent to the large sample size of the study. Ormhaug and Jensen (2018) found age was no longer significant when controlling for caregiver participation, which was most common for younger children, suggesting it was that rather than age itself that was promoting treatment retention. Wamser-Nanney (2020c) found age to be significant for her sample of eight to 12-year olds, in contrast to the samples with a broader age range. One might hypothesise that the age range spans the period over which age becomes particularly salient; as young people move into adolescence, parents may have less authority to insist they continue with a disliked treatment, or other competing activities such as school may become more demanding. Eslinger et al. (2014) found caregiver age to be predictive of dropout, with the children of younger caregivers less likely to complete treatment. This may reflect a relative paucity of resources among younger-aged parents, be they financial or logistical (lower paid and less flexible jobs for instance).

Sprang et al. (2012) and Yasinski et al. (2018) found that children not living with their biological parents were more likely to complete treatment. This may

reflect greater levels of monitoring by external bodies or professionals, or it may be that children who are not in the care of their parents, are more likely to have had experience of multiple or chronic traumas either associated with child physical or sexual abuse or neglect, or with the loss of a parental figure.

Some minority identities, such as refugee status, were associated with increased completion rates. It may be that these children have particularly acute needs, perhaps in the context of little social support, which might motivate engagement with mental health services. Where there are language barriers, it may be that some children are allocated a therapist who speaks the same minority language, and where there is also a cultural match, this facilitates engagement. Latinx ethnicity was also found to increase the likelihood of retention while African American children and young people were consistently found to be at higher risk of dropping out from treatment. This underscores the fact there are important differences between minority groups with distinct socio-cultural needs and whose experience of the interaction between ethnic identity and broader social adversities is not uniform.

African American children were consistently found to be more likely to dropout from treatment. The relationship between African American identity and dropout is particularly disquieting, when viewed alongside other research about racial disparities as they relate to trauma (for example, Andrews et al., 2015; Trickey et al.2012). This paints a picture of multiple, overlapping adversities which play into cumulative vulnerability for Black children, who are more likely to be exposed to multiple traumas, more likely for this to result in post-trauma symptoms, and when they do access treatment, more likely for treatment to end prematurely.

Sociodemographic variables such as income, transport, and health insurance were considered in some studies, but the data needs to be understood in the context of practical constraints (e.g. public transport, financial support) as well as service-led initiatives to attempt to ameliorate these factors (e.g. travel vouchers, childcare for other children, evening clinics). However, the presence of these ameliorating factors does still seem to leave evidence of differential retention for people facing multiple adversities, suggesting the practical barriers are not the only issue at hand here.

The number of traumatic events was most often found to increase dropout. The one exception to this trend was found by Chasson et al. (2013) whose findings linked dropout with trauma characteristics associated with less distress (e.g. single incident trauma, not being at risk of death or physical harm). One reading of this is that lower levels of distress are insufficiently motivating to sustain treatment engagement. Alternatively, it may be that some of those that dropped out had responded positively to a smaller dose of treatment and no longer felt treatment was necessary. There are no ready explanations for the apparent differences found by Sprang et al. (2012) and Steinberg et al. (2019) as they relate to trauma type, with several instances of contradictory effects between certain types of trauma, despite the fact they both drawing on the NCTSN Core Data Set. These inconsistencies suggest that there is scope for additional research in this area to help clarify whether the specific nature of the trauma is influential in treatment attrition, particularly given the potentially large clinical benefit for those impacted by multiple traumas.

Like the number of traumas experienced, the symptom profile of participants may also speak to treatment need and potentially to a differential risk for dropout. A particular focus on the studies considered was in regards to the presence of internalizing vs. externalizing symptoms. Broadly, the literature suggests that

externalizing symptoms make dropout more likely (Sprang et al., 2012; Steinberg et al., 2019; Tebbett, et al., 2018; Wamser-Nanney & Steinzor, 2016; Wamser-Nanney 2020b) whereas internalizing symptoms may work in the opposite direction (Fraynt et al.2014). Greater externalizing symptoms may mean parents find it more difficult to insist their children attend treatment or may prompt providers to withdraw services if there are high levels of aggression or rule-breaking. In contrast, internalising symptoms may be most impactful on the child or young person themselves, arguably providing a motivation for treatment completion. However, this may be a complex relationship; Tebbett et al. (2018) also found that both high and low parent-rated internalising scores were associated with dropout. This may suggest that where symptoms are low, there is less incentive to persist with treatment, and when internalising symptoms are high, these interfere with a family's capacity to engage. Fraynt et al. (2014) found functional impairment was associated with attending more sessions but ultimately increased the chances of dropout. It could be that this is because treatment has failed to cause symptoms to remit, leaving patients or parents disillusioned, or it may be that people attend until their symptoms improve, but drop out before the full treatment has been delivered.

In terms of trauma symptoms, it is striking that almost no study found self-reported post-traumatic symptoms at baseline to have a significant relationship with dropout. The single instance was Murphy et al. (2014), on a single subscale: the avoidance subscale of the PTSD-RI, though even here the difference was very small (completers had a mean score of 10.0 and non-completers a mean score of 10.6; total PTSD score did not reach significance). However, arguably a limitation of the research is that most symptom measures were taken at baseline. If treatment can exacerbate symptoms, it is possible this not captured by baseline measures. Chasson

et al. (2008) found avoidance scores at the point of dropout to be significant, but this was nulled by the later analysis conducted by Chasson et al. (2013) when other trauma-related variables were controlled for. Post-trauma symptomology as rated by parents of younger children was associated with children receiving an 'adequate dose' of treatment (Wamser-Nanney (2020a; 2020b) This may reflect the greater ability of parents of children in the younger age range to decide that treatment continue where they perceive there to be a need.

The relationship between post-trauma symptoms and dropout in the studies reviewed here appears to be quite slight. However, Sprang et al. (2012) found that children and young people with diagnosed PTSD were 1.57 time more likely to dropout. This seems to run contrary to the above and again, seen in isolation, carries with it the troubling implication that those who are most in need of trauma-focused treatment (with a strong evidence-base for resolving PTSD) are not receiving (enough) of it.

Perceptions about the nature of PTSD treatment may be relevant here. As Kadzin et al. (1997) contend, how parents view the relevance and demands (costs) of treatment is likely to play a large role in the success of treatment. Indeed, as Ormhaug and Jensen (2018) demonstrate, young people are highly sensitive to whether they feel their parents approve of therapy in the first session. Lange et al.'s (2020) study showed that one aspect of treatment, in-vivo exposure, a critical aspect of how TFCBT is theorised to address core psychopathology (Cohen et al., 2006), was only seen as the most helpful element of treatment by one of the 1778 caregivers. This raises questions as to how well subscribed caregivers are to the underlying rationale of treatment. Self-Brown et al. (2016) found concerns that treatment could exacerbate symptoms were prevalent among parents who did not go

on to enrol their child in treatment, despite a need for treatment having been identified. Alongside more tangible costs like transport, missed work or school, some caregivers may be weighing a perceived risk of symptom exacerbation. This may be particularly operative in the parents of trauma-exposed children who carry feelings of guilt or shame in respect of the trauma itself.

It is striking that some clinicians consider patients to have dropped out even after lengthy interventions which far outstrip the length of interventions found in the RCTs from which the evidence base for trauma-focused treatment arises (Silverman et al., 2007; Dorsey et al., 2017). Trials for the treatments most well-established in terms of their efficacy are individual or group TFCBT which are typically between 10 and 14 sessions (Dorsey et al., 2017). There is growing interest in even briefer treatments. Deblinger et al. (2011) found that a 16-session TFCBT intervention was no more effective than an eight-session intervention. It is difficult to know what is driving longer interventions – whether it reflects a greater level of clinical complexity or other competing needs (e.g. frequent changes in living circumstances, financial difficulties, substance use or other needs that take priority and prevent progress with treatment), or is associated with therapists having other reasons for electing not to deliver trauma-based interventions in accordance with their original protocols. Here therapist perception of PTSD and its treatment is relevant. Gharfoori et al. (2019) found that Black children were significantly more likely to be offered TFCBT than White young people while young people with higher externalising symptoms were less likely to be offered TFCBT. It is not clear what perceptions of the treatment or of the young people are at play when clinicians are selecting treatment modality, but this is something that would benefit from further research.

Strengths and Limitations of the Evidence Base

There has been an increase in interest in the factors that influence dropout from trauma-focus psychological treatment in children and young people. This review serves to draw together the findings to date, and in doing so reveals some of the strengths and limitations of the existing research. One area of strength is the availability of large sets of archival data. This affords impressive statistical power capable of detecting even small potential effects of a range of variables. However, these rely on innumerable individuals inputting data, making them vulnerable to inconsistency and beset with issues of missing data. This is coupled with a reliance on individual clinicians deciding whether a child or family has dropped out, and the context for this decision is often unclear. Services have different parameters in terms of the number of sessions they offer, tolerance or follow up for unattended appointments, assertive outreach or engagement strategies, threshold for entry into the service and threshold for continuing to provide a service once symptom relief has been achieved. Some clinicians may be encouraged to close cases and for others, there may be negative associations with determining that treatment has ended prematurely, which could be seen as reflecting negatively on a therapist's skills in engagement.

Relatedly, another key difficulty within the literature is the different ways in which dropout is classified by clinicians and researchers. These differences limit our ability to draw comparisons across studies and arrive at firm conclusions. The field would benefit from operationalising dropout in a consistent manner to enable study findings to be compared with greater accuracy and reduce confounding variables. Any such definition is likely to be imperfect. Using clinician judgement is fraught with issues of inconsistency or subjectivity outlined above. However, so too are

definitions that rest on a preordained number of sessions; these being poorly suited to capture the clinical reality of many of the interventions described here, many of which far exceed the length of most treatment protocols. Understanding what is driving the stark difference in the length of duration of treatment delivered in RCTs and 'real-world' clinical settings, is likely to be critical to our ability to discern what constitutes treatment completion in the eyes of clinicians, researchers, and service users alike.

Another limitation is the dominance of research from the USA, making it difficult to know how sociodemographic variables in particular influence treatment dropout in other cultural and economic contexts around the world, raising questions about the generalisability of these findings. There is a therefore a pressing care for greater diversity in the field to bolster external validity. Additionally, treatment and therapist variables have received comparatively little attention and would benefit from further research. Importantly, unlike sociodemographic, symptom and caregiver variables, treatment factors fall within the scope of things that clinicians and service providers have the potential to change.

Strengths and Limitations of the Current Review

This review has sought to map out the potentially relevant variables which have been investigated to date. The strength of the approach utilised here, is that in grouping and visually representing the direction of those effects found to be significant, it allows for an overview of an emerging field, bringing together a diverse range of heterogenous studies, analyses and findings. These summaries highlight where studies have found areas of agreement and divergence, as well as indicating the areas which have attracted a lot of attention and others which thus far remain somewhat neglected. The limitations of this approach are that it does not

provide information about the comparative weight of these different variables, as the data has not been pooled into a common metric and the size of the effects is not addressed. Sociodemographic variables feature heavily, having received a higher degree of attention in the literature, in comparison to other areas. However, this may owe less to a theoretically driven model of understanding of what drives treatment dropout, and may have rather more to do with the ready availability of this kind of data in archival repositories.

Another limitation of this review is that it tells us relatively little about the underlying mechanisms by which these variables are brought to bear on decisions about treatment termination. Therapist variables are notable by their almost complete absence in the literature, meaning that a potentially highly influential component of the therapeutic process is virtually un(der)explored in both the included studies and this review. It is difficult to imagine that therapist skill, style, experience and supervision, do not have some impact on engaging and retaining young people in treatment. Future research that considers how these factors may mediate the relationship between other variables and dropout, may advance our understanding of what underlies the relationships between variables described above. This review also reflects some of the limitations of the field already noted, in that the included studies are dominated by findings from the USA and were most often related to trauma-focused cognitive behavioural therapies rather than other releavent therapeutic approaches such as EMDR.

Researchers may have a role in feeding back into clinical processes to prospectively shape the data which is recorded and reported rather than rely on retrospectively sifting through existing data. For example, calling for a consistent definition of dropout and its clear reporting, encouraging clinicians to record a reason

for dropout from a predetermined list of options, as well as routine collection of symptom severity as treatment progresses and treatment components completed, would support greater contextual understanding about the proximal factors operative at the point at which treatment ends. Doing so may help identify not only who is at particular risk of dropping out of treatment, but *at what stage and for what reason*, as well as supporting the evaluation of strategies to promote their retention.

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Chapter 3: Bridging Chapter

As is demonstrated in the Systematic Review, the factors that impact upon retention of children and young people in treatment following exposure to trauma are complex and manifold. Encouragingly, there has been a recent increase in focus as to who might be at greater risk of dropping out of treatment. However, within the studies reviewed above, treatment variables received relatively little attention. This is surprising, as unlike socio-demographics or symptomology, treatment type, its delivery and format, fall within the purview of service providers and clinicians. It is important that decisions about what treatment to offer, are informed by research as to how this may impact on the likelihood of children and young people completing treatment. As such, the remainder of this thesis will be concerned with the question as to whether there are differential dropout rates associated across interventions for children and young people with PTSD. Before proceeding with this, it may be helpful to situate this against the background of the wider literature as it pertains to the issue of differential dropout and why trauma-focused treatments may have particular relevance to this topic.

Trauma-focused treatments and dropout

Concern that trauma-focus treatments for PTSD have the potential to exacerbate symptoms and promote dropout has been a feature of the literature for decades. Kilpatrick and Best, writing in 1984, remark that exposure techniques may produce an aversion to therapy, increase distress and lead to patients discontinuing treatment, invoking the maxim that practitioners should “first, do no harm” when treating vulnerable patients. In an oft cited article in 1991, Pitman and colleagues reflect on their experience treating a small sample (n = 20) of veterans of the

Vietnam war, and suggest that imaginal exposure exacerbated feelings of guilt and anger in a minority of patients (n= 6) (Pitman et al., 1991; 1996a). Tarrier et al. (1999) found that while cognitive therapy and imaginal exposure were comparable in terms of effectiveness, a larger proportion of participants undergoing imaginal exposure experienced symptom exacerbation. Cloitre and colleagues (2002) urged caution in use of exposure techniques with survivors of childhood abuse, and suggested that treatment be augmented with a preceding treatment phase of stabilisation and skill-building to militate against the potential negative effects of trauma-focused treatment. A piece in the *New York Times* (Slater, 2003, cited in Olatunji, 2009) referred to exposure as "the cruellest cure" and quoted a clinician as describing its techniques as "torture, plain and simple". Olatunji (2009) observes such coverage has contributed to something of a "public relations issue" for trauma-focused treatments.

Certainly, is apparent that reservations about these treatment approaches have been demonstrated to persist in the perceptions and practices of some clinicians. Feeny and colleagues (2003) suggest that the belief that treatment can cause symptom exacerbation and lead to dropout is one of the core 'myths' that serve to prevent the implementation of demonstrably effective treatment for PTSD (a second, related myth Feeny posits, is the belief that efficacy in clinical research does not generalise well to 'real world settings', discussed below). Indeed, Becker et al. (2004) surveyed 852 doctoral level psychologists, and a further 50 members of a trauma special interest group, finding that 83% did not use imaginal exposure to treat PTSD, many endorsing the belief that it would worsen symptoms, increase suicidality and increase a desire to dropout of treatment, noting that comorbidities or other clinical complexities were seen as additionally problematic. Borntrager et al.

(2013) examined the archival records related to 814 trauma-exposed young people, and found that exposure was the 'most under-utilised' practice element in their care, despite being in 100% of evidence-based protocols for treating trauma. Problem-solving, relationship-building and supportive listening were the most commonly utilised practice elements. Strikingly, a diagnosis of PTSD anywhere in the diagnostic profile was found to predict significantly *lower* evidence-based practice scores.

Similarly, van Minnen et al. (2010) surveyed 255 'trauma experts' at a Dutch-Flemish trauma-related conference, finding that only a minority use imaginal exposure with their PTSD patients. In the experimental part of their study, they found that clinicians' fears about symptom exacerbation and dropout negatively affected their preference for imaginal exposure in the context of multiple childhood trauma, but not for single-incident trauma in adulthood. Clark et al. (2010) conducted focus groups with behavioural health professionals in urban and rural communities in the USA. They found that there were significant misgivings about the applicability and safety of trauma-focused approaches, a sentiment summed up in the following quote from one of the participants: "There are some treatments for trauma that are dangerous, particularly if you have a naïve therapist that is going into full disclosure, full catharsis… frequently you will see folks who will regress and become worse with the treatment" (page 356). Finch et al. (2020b) surveyed 716 practitioners working in Child and Adolescent services in the UK and found 65.1% perceived a risk of increasing distress as a barrier to implementing evidence-based trauma interventions. This was echoed in separate study by Finch et al. (2020a): a systematic review of literature relating to all barriers and facilitators to the delivery of evidence-based interventions, finding that fear of 're-traumatising' patients or

exacerbating trauma symptoms was widely reported, alongside concerns about the inflexibility of such interventions and a perceived reduced applicability in the context of comorbidities.

Do trauma-focused approaches exacerbate symptoms?

While there is evidence to suggest clinician concern about the potential negative effects of trauma focused approaches, there is also a body of research which repudiates this contention. Jayawickreme et al. (2014) pooled data from four RCTs, and found that a larger proportion of waitlisted participants experienced worsening symptoms than those in active treatment, and in an inverted echo of Best and Kilpatrick (1985), implored clinicians to include harm by omission – the withholding of effective treatment – when applying the imperative to "first, do no harm". A study by Foa et al. (2002) examined the treatment of 76 female survivors of assault, and found (what they contend was) reassuring evidence that only a minority (around 16%) of participants experienced an increase in symptoms following the introduction of imaginal exposure in treatment, and that this was not linked to overall prognosis. It is worthy of note that Wampold et al. (2017) dispute the interpretation of these findings, suggesting that they do offer some support to the thesis that the introduction of imaginal exposure was temporally linked to increased symptoms. Larsen et al. (2016) sought to expand on this research with their analysis of two large RCTs of female victims of interpersonal violence treated with approaches that utilise a differing degree of formal exposure (Prolonged Exposure (PE), Cognitive Processing Therapy (CPT) (involving a written/read narrative of the trauma) and CPT-C (no written account, but a discussion about the context of the trauma and related beliefs). They found that 14.6% of the sample did not complete treatment. A minority experienced symptom exacerbation at some point during treatment and this was more

common in PE and CPT conditions but did not reach statistical significance (28.6% in CPT, 20.0% in PE, and 14.7% in CPT-C). Sixty-four percent of those who experienced an increase in symptoms had a corresponding decrease by the following assessment (every second session) and those who experienced an increase in symptoms were not more likely to dropout. However, in contrast, Alpert et al. (2020) found that significantly more participants dropped out from CPT than did from the Written Exposure condition (39.7% vs. 6.4%). Of those that did dropout, 82% (*n* = 11) cited the fact that CPT was too distressing as the reason.

There have been six meta-analyses to date which have included exploration of dropout rates from PTSD treatment. However, all of these have restricted their focus to the treatment of adults. Bradley et al. (2005) analysed 26 studies (44 treatment conditions) published between 1980 and 2003, finding a non-completion rate of 21.1%. Moreover, completion-rate was negatively related to pre- and post-treatment effect size, suggesting that patients who did not get better, tended to dropout – a finding that underscores the importance of intent-to-treat (ITT) data analysis. Of those that did complete treatment, 67% no longer met diagnostic criteria. Of those that entered treatment, *whether or not they completed it*, 56% no longer met diagnostic criteria. There was some data to suggest that dropout varied by treatment type - for example, exposure plus cognitive therapy is reported to have greater dropout than CBT without exposure (33% versus 17%) however this was not statistically analysed. Hembree et al. (2003) considered 25 controlled trials with the aim of addressing the concerns that imaginal exposure exacerbates symptoms. They found the average rate of dropout among exposure treatments was 20.5%, and there no significant difference between active treatments, suggesting that they were equally tolerable. There was a lower rate of dropout for control conditions – waiting

list, supportive counselling or relaxation – with dropout of 11.4%. Bisson et al. (2007) found limited evidence to suggest that TFCBT had greater dropout than waiting list or usual care (while also producing greater reduction in symptoms) but there was no statistically significant difference in direct comparisons between active treatments. When considering only higher quality TFCBT studies, the difference in withdrawal rate when compared to waiting list or usual care was no longer evident. Goetter et al. (2015) looked specifically at dropout among veterans receiving care in the USA, a population noted to have higher rates of attrition than the general population (Litz et al., 2013). Accordingly, Goetter and colleagues found a pooled dropout rate of 36% (42% in routine care settings and 28% in clinical trials). The rate of dropout did not vary between treatments that involved exposure and those that did not. The most consistent correlate with dropout was younger age.

Imel et al. (2013) found slightly more nuanced results from their meta-analysis of 42 studies. They coded the 54 active treatment arms as either trauma-specific (involving explicit re-tellings of the trauma memory), trauma neutral (in which discussion of the traumatic event and related meaning may occur but were not specified e.g. psychodynamic approaches) and trauma-avoidant (where there was no focus on the trauma memory or its meaning e.g. supportive counselling). These categories accounted for 76%, 19% and six percent of the treatment conditions, respectively. The average dropout rate was 18%. Their analysis found that increase in trauma focus did not predict an increase in dropout rate, while number of sessions did. More sessions were associated with greater dropout: for each additional session, there was a corresponding increase of 1% to the predicted dropout rate. Further, group treatments were found to have twice the dropout of individual treatments. In direct comparisons between active treatments, more trauma-focused treatment did

not increase the odds of dropout, including when considering what they term the 'most prototypical' trauma-specific treatment, Prolonged Exposure. However, when trauma-specific treatments were compared with Present Centred Therapy (PCT) (a therapy originally designed as a non-specific control treatment but which is now considered an empirically supported treatment, a recent Cochrane review concluding it may be offered to treat PTSD where TFCBT is not available (Belsher et al., 2019), categorised as 'trauma-avoidant' by Imel and colleagues) the difference in dropout was significant: 36% of patients dropped out from trauma-specific treatment, compared with 22% patients from PCT.

Finally, Lewis et al. (2020) included 115 studies in their meta-analysis, distinguishing between interventions that are 'trauma-focused' and those that are not. They found a pooled dropout rate from treatment of 16%. There was no evidence of dropout being greater from group formats. Their findings did suggest that dropout was associated with therapies with a greater trauma-focus. The authors speculate that this may result from adverse events such the exacerbation of existing symptoms, or the occurrence of new symptoms, stemming from exposure-based therapies, however they highlight a dearth of research that would allow this to be concluded more firmly (Lewis et al., 2020).

One reason that it is difficult to definitively conclude that dropout rates belie a difficulty tolerating particular treatment approaches, is the possibility that some dropout may be attributed to an improvement in symptoms rather that the reverse. Szafranski et al. (2017) posit dropout rates from PTSD treatment as a potential 'red herring', suggesting that some patients who leave treatment early are in fact early responders who have already achieved positive outcomes. They analysed data from 53 participants who dropped out from treatment in two large RCTs of CPT and CP,

finding that between 35 – 55% showed positive clinically significant change and/or met good end state criteria prior to dropping out (although the more sessions attended, the greater the likelihood of favourable outcomes). They suggest that closer monitoring of symptom change through treatment would support more accurate interpretation of dropout as a heterogenous phenomenon. The timing of dropout may also be pertinent to understanding what precipitated it. Gutner et al. (2016) found that the greatest risk for dropout from the two CPT and PE RCTs they analysed occurred prior to attending the first treatment session (16%). The vast majority (83%) of dropout happened within the first half of treatment. Holmes et al. (2019) analysed temporal pattern of dropout from CPT treatment in routine care. They found that 42% of participants did not complete the 12-session protocol, with dropout most concentrated between sessions two and five, coinciding with the stage in treatment at which detailed written accounts of the traumatic event were assigned as homework tasks. A minority of participants did achieve positive change without completing the whole course of treatment, but for most even late stage dropout compromised outcomes, with the number of people who achieved good symptom reduction doubling between late dropout (sessions eight) and sessions 12.

A strength of the Holmes et al. (2019) study is that it included treatment in a range of clinical settings with a diverse range of participants. Conversely, it is a notable limitation of the literature on dropout that it tends to draw upon RCTs with relatively homogenous populations and significant exclusion criteria. Dropout from RCTs has consistently been found to be lower than in 'real world' settings. Indeed, Najavits (2015) argues that term 'gold standard treatments' for PTSD be reserved for those treatments that not only demonstrate their efficacy in RCTs, but also their feasibility and retention in 'real world' conditions. The perception of manualised

treatments developed in research settings as having limited applicability to clinical realities is identified as a barrier to the implementation of trauma-focused interventions (Clark et al., 2010; Eslinger et al., 2020; Gnaulati, 2019; Feeny et al., 2003). Particularly pertinent is a clinical circumspection regarding the utilisation of trauma-focused treatments in the context of comorbidity or other clinical complexities such repeated and multiple trauma (Becker et al., 2004; van Minnen et al., 2010). While a recognition that the promotion of internal validity within RCTs (e.g. through effort to recruit a relatively homogenous sample), can come at the expense of external validity i.e. generalisability to other settings, is widely acknowledged, there is some evidence to suggest that misgivings about the circumscribed applicability of trauma-focused treatments is unfounded. For example, van den Berg et al. (2016) found that PE or EMDR for people with chronic PTSD and a comorbid lifetime psychotic disorder, produced significantly less adverse events (self-harm, suicide attempt, hospitalisation, problematic substance abuse and so on) than did the waiting list condition, which also had double the rate of symptom exacerbation. In the treatment arms, symptoms of either psychosis or PTSD were rarely found to be exacerbated and the minority who did experience temporary exacerbation were not more likely to dropout.

In sum, research to date confirms that concerns that some treatments may exacerbate symptoms and precipitate drop out have been consistently found to feature in the perceptions of some clinicians. This appears to result in lower utilisation of trauma-focused approaches. What is less clear is whether these concerns are well-founded. Evidence from studies in adult populations on this point is decidedly mixed, while consideration as to how this issue relates to the treatment of children and young people with PTSD is wanting.

Chapter 4: Empirical Research Paper

The following paper has been prepared in accordance the requirements for submission to the Journal of Child and Adolescent Mental Health, author guidelines can be found in Appendix C. Tables have been included in position and British English spelling has been used for the purpose of the thesis portfolio.

Word count: 9953

A meta-analysis of drop-out from evidence-based psychological treatment for Post-Traumatic Stress Disorder (PTSD) in children and young people

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Abstract

Background: National Institute for Health and Care Excellence (NICE) Guidelines (2018) recommend children and young people with Post-traumatic Stress Disorder (PTSD) are treated with Trauma-Focused Cognitive Behavioural Therapies or Eye Movement Desensitisation and Reprocessing (EMDR). Despite their established evidence base, clinician concern that these trauma-focused treatments may 'retraumatise' patients or exacerbate symptoms and cause dropout, has been identified as a barrier to their implementation (Finch et al., 2020a). Drop out from treatment is indicative of its relative acceptability in this population.

Methods: A systematic search of the literature was conducted to identify Randomised Controlled Trials (RCTs) of evidence-based treatment of PTSD in children and young people. Proportion meta-analyses estimated the prevalence of dropout. Odds Ratios compared the relative likelihood of dropout between different treatments and controls. Subgroup analysis assessed the impact of potential moderating variables.

Results: Forty RCTs were identified. Dropout from all treatment or active control arms was estimated to be 11.6%, 95% CI [9.0, 14.6]. Dropout from evidence-based treatment (TFCBTs and EMDR) was 11.2%, 95% CI [8.2, 14.5]. Dropout from non-trauma focused treatments or controls was 12.8%, 95% CI [7.6, 19.2]. There was no significant difference in the odds of dropout when comparing different modalities. Group rather than individual delivery, and lay versus expert delivery, were associated with less dropout.

Conclusions: NICE recommended treatments for children and young people with PTSD do not result in higher prevalence of dropout than non-trauma focused

treatment or waiting list conditions. Trauma-focused therapies appear to be well tolerated in children and young people.

What is known? Trauma-focused treatments have a well-established evidence base for their efficacy. What is less clear is the degree to which they are acceptable to children and young people, as dropout has been found to be high.

What is new? Dropout from RCTs regarding trauma-focused treatments for children and young with PTSD is not more likely than from non-trauma-focused arms or control conditions.

What is significant for clinical practice? Clinicians treating children and young people with PTSD can be reassured that implementing evidence-based trauma-focused treatments does not increase the risk of patients ending treatment prematurely.

Introduction

As noted above, a great many children and adolescents are exposed to traumatic events through-out the world. It is estimated that around 15% of those exposed go on to develop Post Traumatic Stress Disorder (PTSD) (Alisic et al., 2014). PTSD is characterised by the re-experiencing of traumatic events, avoidance of reminders of the trauma, hypervigilance to threat and increased physiological arousal (Diagnostic and Statistical Manual of Mental Disorders 5th Edition, (DSM 5), American Psychiatric Association, 2013). Untreated, PTSD can result in severely impaired social, academic and occupational functioning, which can persist into adulthood (Yule & Bolton, 2000). It is fortunate therefore, that a number of psychological treatments have demonstrated efficacy in this area. In particular, a range of trauma-focused cognitive behavioural interventions, and to a slightly lesser extent, Eye Movement Desensitisation and Reprocessing Therapy (EMDR) have well established empirical support confirmed by a number of meta-analyses (Gillies et al., 2012; Gutermann et al., 2016; Mavranezouli et al., 2020; Morina et al., 2016; Silverman et al., 2008). As such they are the recommended treatment in a number of national treatment guidelines: International Society for Traumatic Stress Studies (ISTSS), the American Psychiatric Association (APA) and the National Institute for Health and Care Excellence (NICE) (American Academy of Child and Adolescent Psychiatry (AACAP), 2010; Foa, Keane, Friedman, & Cohen, 2000; NICE, 2018).

It has been widely noted however, that despite this strong evidence base, there continues to be an under-utilisation of these approaches in clinical settings (Bortrager et al., 2013; Clark et al., 2010; Eslinger et al., 2020; Finch et al., 2020a; Finch et al., 2020b). Ratesof young people dropping out from treatment for PTSD are significant (Dorsey et al., 2017). “A number of authors have linked these two

phenomena, suggesting that concerns among clinicians that some treatments may precipitate dropout, may lead them to decide not to implement trauma-focused interventions (Borntrager et al., 2013; Feeny et al., 2003; Foa et al., 2002; van Minnen et al., 2010)."

NICE define trauma-focused cognitive behavioural interventions as being those that involve elaboration and processing of trauma-related memories and emotions, restructuring of trauma-related meanings for the child or young person, and provide help to overcome avoidance (NICE Guideline NG116; 2018). This includes a range of treatments including Trauma-Focused Cognitive Behaviour Therapy (TFCBT), Cognitive Processing Therapy (CPT), Narrative Exposure Therapy (NET) and Prolonged Exposure Therapy (PE). The same guidelines recommend that clinicians consider EMDR for children and young people, if they do not respond to, or engage with, trauma-focused CBT (NICE Guideline NG116; 2018). Both approaches involve explicit exposure to the trauma memory, be it through 'trauma narration' a detailed re-telling of event and accompanying thoughts and feelings, *in vivo* exposure to trauma-relevant objects or places, or imaginal exposure, bringing to mind and focusing on the details of the event. It is exposure techniques in particular, that have been most frequently implicated in the suggestion that some treatments can exacerbate symptoms and are particularly poorly tolerated in people with PTSD (e.g. Tarrier et al., 1999).

To date have been six meta-analyses that have considered dropout from PTSD treatments in adults, with mixed results. Bradley et al. (2005) reported some data that implied there was a difference in dropout rate between treatments that included exposure techniques and those that did not, however they did not analyse this statistically. Hembree et al. (2003) found no evidence of differential dropout

rates from different treatments. Bisson et al. (2007) did find that there was more dropout from TFCBT than from usual care, but this difference no longer held once lower quality studies were removed. Goetter et al. (2015) meta-analysed studies related to US veterans in particular, finding that there was no difference in dropout between those treatments that involved exposure and those that did not. Imel et al. (2013) found that most direct comparisons between active treatments did not demonstrate significantly different dropout rates, except where trauma-focused treatment was compared with Present Centred Therapy (PCT), with PCT having a reduced likelihood of dropout. Finally, Lewis et al. (2020) found that there was a statistically significant relationship between dropout and treatments with a greater trauma focus than those without, although the difference was small and dropout rates were still comparatively low (18% and 14% respectively). Taken together, it remains far from clear whether there is definitive evidence to conclude that some treatments carry a greater risk of dropout. To the authors' knowledge, there has not yet been a meta-analysis which has considered this in relation to children and young people. This is important if clinicians are to make informed decisions about which treatment approach to select to promote the retention of children and young people in treatment, giving them the best chance of benefitting from the intervention.

The purpose of the current review is therefore to obtain an estimate of dropout rates for PTSD treatments in children and young people. Furthermore, to ascertain whether dropout rates differ across different modalities, and in particular whether trauma-focused treatments (NICE recommended cognitive behavioural therapies or EMDR, which explicitly use exposure as part of treatment) are associated with increased rates of dropout among children and young people.

Methods

An overview of the proposed review was registered *a priori* with PROSPERO (CRD42019154257).

Search Strategy

Three databases were systematically searched: PsycINFO, MEDLINE and Published International Literature on Traumatic Stress (PILOTS; now PTSDpubs). The following search terms were used:

Post-traumatic Stress OR "Posttraumatic Stress" OR Trauma* OR PTSD OR "Post Traumatic Stress" OR P.T.S.D.

AND

child* OR young OR adolescen* OR youth OR pupil OR student OR teenage*

AND

psychotherapy OR therapy OR treat* OR therap* OR cognitive OR CBT OR C.B.T. OR EMDR OR "Eye Movement" OR E.M.D.R. OR Reprocess* OR Desensiti* OR "Narrative Exposure" OR "Exposure Therapy"

AND

control* OR clinical trial OR randomised OR randomized or Randomized Controlled

Eligibility Criteria

Results were limited to those in the English language and those published since 1980. This reflects the inclusion of PTSD in the third edition of the Diagnostic and Statistical Manual of Mental Disorders (APA, 1980).

Included studies were randomised controlled trials (RCTs) of evidence-based therapeutic interventions recommended by NICE i.e. trauma focused cognitive/behavioural or cognitive behavioural therapies or EMDR. Participants

were diagnosed PTSD (according to the DSM, the World Health Organization (WHO) International Classification of Diseases (ICD)) or had clinically significant PTSD symptoms (baseline PTSD symptom scores above threshold on a validated scale). The mean age of participants had to be under 19 years old. The event the symptoms relate to should be a least one month prior to the start of treatment. To be included studies had to report sufficient data to compute dropout rates.

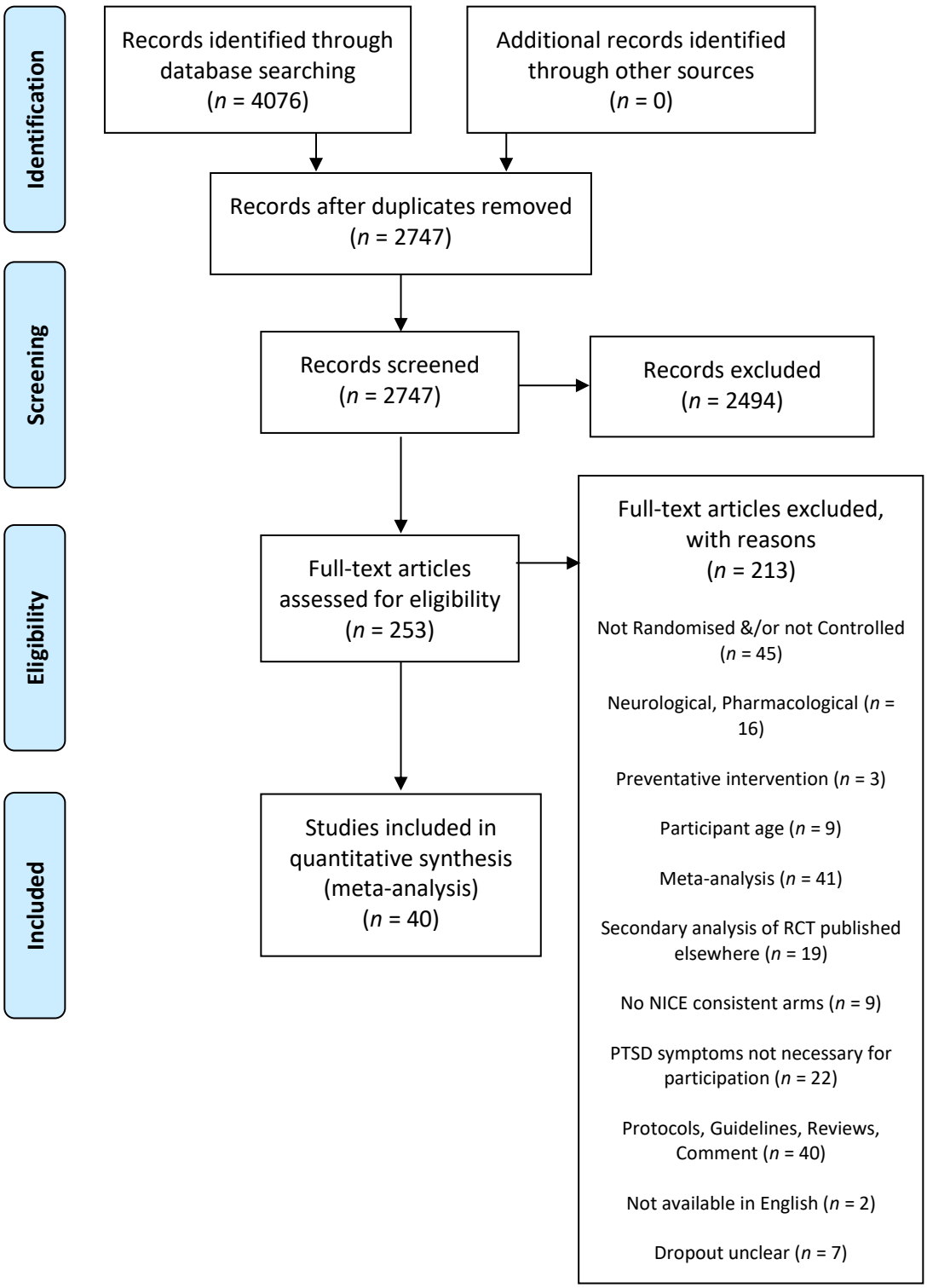
Studies were excluded if the mean age of participants was 19 years old or above. Further, if participants were not diagnosed with PTSD or not above clinical threshold on validated measure of PTSD symptoms. Studies were also excluded if none of the treatment arms constituted a NICE recommended intervention e.g. play therapy, family therapy, child-parent psychotherapy, parent training (alone), supportive counselling. Studies were excluded if the interventions under consideration were not primarily treating trauma symptoms or were preventative interventions. So too, studies of treatment delivered to a group who have not been individually clinically assessed as having PTSD symptoms e.g. to a whole class. Pilot studies, feasibility studies, non-randomised or controlled trials, pharmacological studies and studies reporting findings from RCTs published elsewhere were also excluded.

Study Selection

Searches produced a total of 4076 results. Once duplicates had been removed, there were 2747 records. Excluding those studies not in the English language further reduced the number of results by 147, leaving 2600. These were then screened by title and abstract with reference to the eligibility criteria. This process removed 2339 records. The full text for the remaining 261 were then retrieved for detailed screening. Where there was ambiguity about the eligibility of

any particular study, the first author (CS) consulted the second author (PB) and established consensus as to the study's rightful designation. This process produced a selection of 40 studies. All 40 included studies were then separately assessed for eligibility by the second author (PB). A PRISMA flowchart (Moher, Liberati, Tetzlaff, & Altman, 2009) detailing the screening and selection process is presented in Figure 1.

Figure 1. *PRISMA Flowchart of Study Identification Process*



Study Quality

Study quality was assessed with reference to a ten-point scale adapted from that which was used by Hoppen and Morina (2020) - itself an adaptation of that used by Cuijpers et al. (2010) – for their meta-analysis investigating study quality in the field of paediatric PTSD. One point was given for each of the following:

i) participants' PTSD symptomology assessed personally via a clinical interview,

ii) the use of a treatment manual either published or specifically designed for the study,

iii) treatment delivered by therapists trained in the specific intervention either as part of the study or having had substantial prior experience,

iv) treatment integrity checked by e.g. regular supervision, adherence checklists or recordings of treatment sessions being subjected to review,

v) intent-to-treat analysis,

vi) independent randomisation process when allocating participants to different arms,

vii) post-treatment assessment carried out by blind assessors.

Three further criteria were added to reflect the focus on dropout in the current study:

viii) presentation of a CONSORT diagram (Schulz, Altman and Moher, 2010),

ix) defined and explicit criteria for distinguishing dropout and treatment completion i.e. the minimum number of sessions required to be considered to have received the treatment, and

x) inclusion of details of the stage and/or reasons for dropout or where there was no dropout, that this was clearly stated.

Where there was insufficient information to determine whether the criterion was met, no point was awarded. All included studies were assessed for their quality by the first author (CS). A randomly generated subset of 50% of the studies was then assessed by third author (HB). Cohen's kappa was calculated to determine the degree of inter-rater reliability of the quality assessment: 0.72, suggesting substantial agreement (Landis & Koch, 1977). Differing scores were then resolved through discussion.

Data Extraction

The following data was extracted from all included studies: authors, date and the country where study took place, whether the study concerned a specific event or category of trauma (e.g. an earthquake, or mass conflict); whether participants had experienced a single event trauma, or multiple trauma, or a mixture of the two; the age range and mean age of participants and the percentage of male participants, the treatment arms, including the number and length of sessions involved in each, the format (individual or group treatment), who delivered treatment, the proportion of participants who met diagnostic threshold for PTSD and the percentage of people who had dropped out from all arms in the study from the point of randomisation.

Data Analysis

The statistical analysis package Jamovi (Version 1.2) was used to carry out the analyses (The Jamovi Project, 2020. Retrieved from https://www.jamovi.org). Proportion meta-analyses were used to estimate the prevalence of dropout for all intervention arms and for subgroups of interventions. A random effects model was

used in reflection of the anticipated heterogeneity between studies (Borenstein et al., 2009). Heterogeneity of effect sizes was assessed using Cochrane's Q and Higgins' I^2. The first of these examines whether the variability of effect sizes is greater than would be expected by chance. The latter represents the proportion of the overall variability that is beyond sampling error (Borenstein et al., 2009).

Odds ratios were used to determine whether there was a greater likelihood of dropout for different classes of intervention (e.g. trauma-focused cognitive behavioural therapies) and different types of control (i.e. active or inactive). Subgroup analyses (meta-regressions) were conducted to explore potential moderator variables: number of sessions, group or individual format, whether participants had experienced single incident or multiple traumas or a mixture of the two. Further meta-regressions were used to group interventions by modality (e.g. all CBT arms) and then compare them to all other intervention arms.

The above analyses were repeated using only those studies that provided an explicit definition of what constituted dropout. In light of the finding by Bisson et al. (2007) that an apparent relationship between treatment and dropout disappeared once lower quality studies were removed, sensitivity analyses repeated the above analyses having removed the studies that scored six or fewer in the quality assessment (9 studies removed).

Results

Forty studies met the inclusion criteria. A summary of the included studies is presented in Table 1.

Table 1. *Characteristics of Included Studies*

Authors, Year	Country	Trauma Type	Single Incident, Multiple or Mixed	Interventions	Number of Participants	Format	Maximum Duration Weeks, Sessions, (Minutes)	Delivered By	Age Range (mean)	Met PTSD Diagnostic Threshold at Pre-treatment (%)	Male (%)	Dropout (%)[a]
Ahmad et al., 2007	Sweden	Various	Mixed/ Multiple	EMDR v WL	33	Individual	8, 8 (45)	Therapists (authors)	6 – 16 (10)	100	41.2	9.1
Ahrens & Rexford, 2002	USA	Violence	Mixed/ Multiple	CPT v WL	38	Group	8, 8 (60)	Experienced doctoral candidate and qualified psychologist	15 - 18 (16.4)	100	100	0
Baron et al., 2016	Palestine	Mass Conflict	Mixed/ Multiple	TRT v WL	154	Group	n.r., 5 (60)	School Counsellors	11 – 18 (13.5)	100	36.4	16.9
Catani et al., 2009	Sri Lanka	Civil unrest, Tsunami	Mixed/ Multiple	KidNET v MED-RELAX	31	Individual	2, 6 (60-90)	Teachers trained as 'master counsellors'	8 - 14 (11.9)	n.r.	54.8	0
Cohen et al., 2004	USA	Sexual abuse	Mixed/ Multiple	TFCBT v CCT	229	Individual (with parent involvement)	12,12 (45)	Experienced therapist (social workers and psychologists)	8 - 14 (10.7)	89	21.2	11.4
Cohen et al., 2011	USA	Intimate Partner Violence	Mixed/ Multiple	TFCBT v CCT	124	Individual (with parent involvement)	8, 8 (45)	Social workers	7 – 14 (9.6)	25	49.2	39.5

Table 1 continued

Authors, Year	Country	Trauma Type	Single Incident, Multiple or Mixed	Interventions	Number of Participants	Format	Maximum Duration Weeks, Sessions, (Minutes)	Delivered By	Age Range (mean)	Met PTSD Diagnostic Threshold at Pre-treatment (%)	Male (%)	Dropout (%)[a]
Dawson et al., 2018	Indonesia	Civil conflict	Mixed/ Multiple	TFCBT v PS	64	Individual (with care-giver involvement)	6, 6 (60)	Lay counsellors	7 – 14 (10.4)	75	51.5	0
de Roos et al., 2011	Netherlands	Firework Factory explosion	Single incident	TFCBT v EMDR	52	Individual (with parent involvement)	8, 4 individual plus 4 parent (60)	Licenced therapists	4 - 18 (10.1)	17.3	55.8	25.9
de Roos et al., 2017	Netherlands	Various	Single incident	CBWT v EMDR v WL	103	Individual	Up to 6, 6 (45)	Clinical Psychologists	8 – 18 (13.1)	61.2	42.7	3.9
Deblinger et al., 2011	USA	Child sexual abuse	Mixed/ Multiple	TFCBT (with TN) v TFCBT (without TN)	210	Individual (with caregiver involvement)	Either 8 or 16, 8 or 16, (90)	Graduates with 3+ years of clinical experience	4 – 11 (7.7)	n.r.	39	24.8
Diehle et al., 2015	Netherlands	Various	Mixed/ Multiple	TFCBT v EMDR	48	Individual (with parent involvement)	8, 8 (60)	Experienced therapists	8 – 18 (13)	33	38	25
Ertl et al., 2011	Uganda	Former child soldiers	Multiple	KidNET v Academic catchup with SC	85	Individual	3, 8 (90 – 120)	Lay Counsellors	12 – 25 (18)	100	44.7	7.6

Table 1 continued

Authors, Year	Country	Trauma Type	Single Incident, Multiple or Mixed	Interventions	Number of Participants	Format	Maximum Duration Weeks, Sessions, (Minutes)	Delivered By	Age Range (mean)	Met PTSD Diagnostic Threshold at Pre-treatment (%)	Male (%)	Dropout (%)[a]
Foa et al., 2013	USA	Child sexual abuse	Mixed/ Multiple	PE v SC	61	Individual	14,14 (60 - 90)	Masters level counsellors	13 -18 (15.3)	100	0	13.1
Ford et al., 2012	USA	Various	Mixed/ Multiple	TARGET v ETAU	59	Individual	n.r., 12 (50)	Experienced therapists with professional qualifications	13 – 17 (14.7)	62.8	0	27.1
Gilboa-Schechtman et al., 2010	Israel	Various	Single Incident	PE-A v TLDP	38	Individual	PE-A: 15,15 (90) TLDP: n.r., 18 (50)	'MA level clinicians'	12 – 18 (14.1)	100	37	21.1
Goldbeck et al., 2016	Germany	Various	Mixed	TFCBT v WL	159	Individual (with parent involvement)	12, 12 (90)	Therapist with advanced clinical training	7 – 17 (13.0)	75.5	28.3	1.9
Jaberghadri et al., 2004	Iran	Sexual abuse	Mixed	TFCBT v EMDR	18	Individual (with parent involvement)	12, 12 (45)	Clinical Psychologist	12 – 13 (n.r.)	n.r.	0	21.1
Jaberghadri et al., 2019	Iran	Domestic Violence	Multiple	TFCBT v EMDR	40	Individual (with parent involvement)	12, 12 (60)	Experienced therapists (including author)	8 – 12 (n.r.)	100	50.4	23.8

Table 1 continued

Authors, Year	Country	Trauma Type	Single Incident, Multiple or Mixed	Interventions	Number of Participants	Format	Maximum Duration Weeks, Sessions, (Minutes)	Delivered By	Age Range (mean)	Met PTSD Diagnostic Threshold at Pre-treatment (%)	Male (%)	Dropout (%)[a]
Jensen et al., 2014	Norway	Various	Mixed	TFCBT v TAU	156	Individual (with parent involvement)	n.r., 15 (45)	Experienced therapist from mix of professions	(15.1)	66.7	20.5	25
Kemp et al., 2009	Australia	Motor vehicle accidents	Single incident	EMDR v WL	27	Individual	6, 4 (60)	Doctoral level psychologist with advance training	6 – 12 (8.9)	n.r.	55.6	11.1
King et al., 2000	Australia	Child sexual abuse	Multiple	Child CBT v Family CBT v WL	36	Individual (child only)/ Individual parent & child)	20, 20 (50)	Registered Psychologist	5 – 17 (11.5)	69.4	31	22.2
McMullen et al., 2013	DR Congo	War	Mixed/ Multiple	TFCBT v WL	50	Group	n.r., 15 (45)	Authors and experienced Congolese counsellors	13 – 17 (15.8)	n.r.	100	4
Meiser-Stedman et al., 2017	UK	Various	Single incident	CT-PTSD v WL	29	Individual	10, 10 (90)	Clinical Psychologists (including authors)	8 - 17 (13.3)	100	27.8	10.3
Murray et al., 2014	Zambia	Various	Mixed/ Multiple	TFCBT v TAU	257	Individual	16, 16 (90)	Lay counsellors	5 – 18 (13.7)	n.r.	50.2	9.7

Table 1 continued

Authors, Year	Country	Trauma Type	Single Incident, Multiple or Mixed	Interventions	Number of Participants	Format	Maximum Duration Weeks, Sessions, (Minutes)	Delivered By	Age Range (mean)	Met PTSD Diagnostic Threshold at Pre-treatment (%)	Male (%)	Dropout (%)[a]
Nixon et al., 2011	Australia	Various	Single incident	TFCBT v Cognitive Therapy (no exposure)	34	Individual (with parent involvement)	9, 9 (90)	Trainee Clinical Psychologists	7 – 17 (10.8)	100	63.3	38.2
O'Callaghan et al., 2013	DR Congo	War	Mixed/ Multiple	TFCBT v WL	52	Group (plus x3 individual sessions & x3 caregiver sessions)	5, 15, (120)	Social workers	12 – 17 (16.1)	60	0	11.5
O'Callaghan et al., 2015	DR Congo	War	Mixed/ Multiple	TFCBT v CFS	50	Group	3, 9 (90)	Lay facilitators	8 – 17 (14.8)	92	58	0
Peltonen & Kangaslampi, 2019	Finland	Various	Mixed/ Multiple	NET v TAU	50	Individual	10, 10 (9)	Experienced MH professionals	9 – 17 (13.2)	n.r.	58	14
Pityaratstian et al., 2014	Thailand	Tsunami	Mixed	TRT (adapted) v WL	36	Group	0.4, 3 (120)[b]	Certified Child Psychiatrists (incl. author)	10 – 15 (12.3)	100	27.8	0
Robjant et al., 2019	DR Congo	Former Child Soldiers	Multiple	FORNET v TAU	92	Individual (plus x1 group session per week)	6, 12 (120)	Lay people	16 – 25 (18)	100	0	0

Table 1 continued

Authors, Year	Country	Trauma Type	Single Incident, Multiple or Mixed	Interventions	Number of Participants	Format	Maximum Duration Weeks, Sessions, (Minutes)	Delivered By	Age Range (mean)	Met PTSD Diagnostic Threshold at Pre-treatment (%)	Male (%)	Dropout (%)[a]
Rosner et al., 2019	Germany	Various	Mixed	D-CPT v WL/TA	88	Group	20, 30 (50)	Masters level or postdoctoral therapists	14 – 21 (18.1)	100	15	21.6
Ruf et al., 2010	Germany	Refugees	Multiple	KidNET v WL	26	Group	8, 8 (120)	Clinical Psychologists	7 – 16 (11.5)	100	54	3.9
Salloum & Overstreet, 2012	USA	Various	Mixed	GTI-CN v GTI-C	72	Group (plus x1 individual & x1 parent session)	10, 12 (60)	Social workers, social work interns, psychology doctoral student	6 – 12 (9.6)	n.r.	55.7	5.6
Santiago et al., 2014	USA	Community Violence	Mixed	CBITS v CBITS + Family	64	Group (plus 1 - 3 individual & 1 – 2 group sessions for parents)	n.r., 12 (50)	Social workers	10 – 14 (11.7)	100	41	0
Scheeringa et al., 2011	USA	Various	Mixed	TFCBT v WL	64	Individual (with parent involvement)	12, 12 (50)	Social workers	3 – 6 (5.3)	24	66.2	29.7
Schottelkorb et al., 2012	USA	Refugees	Mixed	TFCBT v CCPT	31	Individual (with parent involvement)	TFCBT: 12, 20 (30) C0+: 12, 24 (30)	Masters level student counsellors	6 – 13 (9.1)	58	54.8	16.1

Table 1 continued

Authors, Year	Country	Trauma Type	Single Incident, Multiple or Mixed	Interventions	Number of Participants	Format	Maximum Duration Weeks, Sessions, (Minutes)	Delivered By	Age Range (mean)	Met PTSD Diagnostic Threshold at Pre-treatment (%)	Male (%)	Dropout (%)[a]
Shein-Szydlo et al., 2016	Mexico	Various	Mixed	TFCBT v WL	100	Individual	12, 12 (60)	Psychologists (Authors)	12 – 19 (14.9)	100	44	1
Smith et al., 2007	UK	Various	Single incident	TFCBT v WL	24	Individual (with parent involvement)	10, 12 (n.r.)	Clinical Psychologists	8 – 18 (13.8)	100	50	0
Stein et al., 2003	USA	Violence	Mixed/ Multiple	CBITS v WL	126	Group	10, 10 (60)	School clinicians	n.r. (11)	n.r.	43.7	9.5
Tol et al., 2008	Indonesia	Civil conflict	Mixed	CBT-CBI v WL	403	Group	5, 15 (n.r.)	Local lay people	(9.9)	n.r.	51.4	2.5

Note. EMDR = Eye Movement Desensitisation and Reprocessing; WL = Waiting List; CPT = Cognitive Processing Therapy; TRT = Teaching Recovery Techniques; KidNET = Narrative Exposure Therapy for Children; MED-RELAX = Meditation and Relaxation intervention; TFCBT = Trauma-Focused Cognitive Behaviour Therapy; CCT = Child Centred Therapy; PS = Problem Solving intervention; CBWT = Cognitive Behavioural Writing Therapy; TN = Trauma Narrative; SC = Supportive Counselling; PE = Prolonged Exposure; TARGET = Trauma Affect Regulation: Guide for Education and Therapy; ETAU = Enhanced Treatment as Usual (relationship supportive therapy); PE-A = Prolonged Exposure for Adolescents; TLDP = Time Limited Psychodynamic Therapy; TAU= Treatment as Usual; CBT = Cognitive Behavioural Therapy; CT-PTSD = Cognitive Therapy for Post-Traumatic Stress

Disorder; CFS = Child Friendly Spaces; NET = Narrative Exposure Therapy; FORNET = Narrative Exposure Therapy adapted for Offenders; WL/TA = Waiting List with Treatment Advice; GTI-CN = Grief and Trauma Intervention with coping skills and trauma narrative processing; GTI-C = Grief and Trauma Intervention – coping skills only; CCPT = Child Centred Play Therapy; CBITS = Cognitive Behavioural Intervention for Trauma is Schools; CBT-CBI = Cognitive Behavioural Therapy Classroom-based Intervention; n.r. = not reported.

[a]dropout from all arms including waiting list. [b]intervention delivered over three consecutive days followed by homework over the following month.

A total of 3413 children and young people were included in the identified studies, with sample sizes varying from 24 to 403. The approximate mean age of participants was 12.5 years old, with the youngest age of eligibility being three years old and the oldest being 25. An average 41.5% of participants were male although seven studies included a single gender exclusively (two had only male participants and five had only female participants). Studies came from 18 different countries including the State of Palestine. The country represented the most was the USA with 11 studies. Eight Low- and Middle- Income Countries (LMIC; World Bank) and the State of Palestine, were represented accounting for 15 studies (37.5% of included studies). Twelve (30%) studies were primarily a group format, although three of these studies also included adjunctive individual child and/or parent sessions. Seven studies (17.5%) looked at single incident trauma, while the majority included participants who had experienced multiple traumas, or a mixture of multiple and single incident traumas. Most interventions were delivered by professional therapists, social workers or trainees. Six studies (15%) involved interventions delivered by lay members of the community. The shortest intervention (Pityaratstian et al., 2014) took place over three consecutive days; however this was then followed by daily homework to complete over the subsequent month. The longest interventions took place over 20 weeks (Rosner et al., 2019; King et al., 2000). The mean number of sessions was 11.8 (*SD,* 5.2). The intervention with the fewest number of sessions was three (again Pityaratstian et al., 2014 as noted above) the highest maximum number of sessions was 30 (Rosner et al., 2019). Considering all arms of each study, including waiting list, the mean dropout was 12.7%. The highest reported dropout was 39%. Eight studies reported no dropout at all.

The most frequently studied intervention was TFCBT, featuring in 21 RCTs. NET was included in five studies, PE, three and CPT two. EMDR featured in seven trials, four of which were a direct comparison between EMDR and TFCBT. Fourteen trials compared a trauma-focused treatment with an inactive, waiting list control arm alone. Fourteen trials compared a trauma-focused treatment with a non-trauma focused active control such as Child Centred Therapy, Supportive Counselling or Treatment as Usual. A further three studies compared two conditions, one of which contained explicit exposure or trauma narrative and one of which was the same but without this component (Deblinger et al., 2011; Nixon et al., 2011; and Salloum & Overstreet, 2012). For the purposes of this analysis, these non-exposure or non-trauma narrative arms were treated as active control conditions. Although they would involve implicit exposure through the provision of, for example, psychoeducation about trauma reactions, they would not meet the criteria set out in the NICE Guidelines set about above (NICE Guideline NG116; 2018)

Study Quality

The quality of all studies was assessed with reference to the ten criteria outlined above. A total quality score was calculated by summing the scores for each indicator. The average score was 7.8 (*SD* =1.6). The scores for each criterion are presented in Figure 2. The scores for each study are included in Appendix F.

Figure 2. *Quality Assessment Scores*

Q1. Participants PTSD symptomology assessed with a personal assessment interview

Q2. Use of a treatment manual – published or designed for the study

Q3. Therapists specifically trained for the given therapy, or only included trained therapists with substantial prior experience

Q4. Treatment integrity was checked (i.e. regular supervision and/or independent, systematic, quantitative analysis of protocol adherence measures)

Q5. Intent-to-treat analysis

Q6. Independent and random allocation

Q7. Blind outcome assessments

Q8. Presentation of CONSORT

Q9. Dropout clearly defined

Q10. Details about the stage or reasons for dropout

Sixteen studies (40%) included a clear definition of dropout and/or the minimum number of attended sessions that would constitute treatment completion. Those that specified a number of sessions were as follows: Ahmed et al. (2007) fewer than three EMDR sessions of a possible eight; Cohen et al. (2004) fewer than three sessions of Child Centred Therapy or TFCBT of a possible 12; Deblinger et al. (2011) fewer than three sessions of a possible eight or 16 sessions of TFCBT; Foa et al. (2013) fewer than eight sessions of a possible 14 sessions of Prolonged Exposure for Adolescents or Supportive Counselling; Ford et al. (2012) fewer than five sessions of a possible 12 sessions of TARGET (Trauma Affect Regulation: Guide for Education and Therapy) or Enhanced Treatment as Usual; Jaberghaderi et al. (2019) fewer than five sessions of a possible 12 of CBT or EMDR.

Proportion Meta-Analyses

The results from the proportion meta-analyses are presented in Table 2. Heterogeneity was large ($I^2 > 59\%$) and significant in all instances. The estimated dropout across all treatment arms (any treatment or active control, excluding only waiting list conditions) of 11.6% (k = 66, 95% CI 9.0, 14.6). The forest plot (Figure 3) shows dropout rates with 95% confidence intervals. The I^2 statistic indicates that 79% of the total variance is attributable to variability between studies. A second proportion meta-analysis considered treatment or control arms from only those studies that had defined dropout (k = 32). This yielded a pooled estimate of dropout of 14.3% (95% CI 10.3, 18.7).

A series of further proportion meta-analyses examined dropout for particular modalities of treatment. For all arms of trauma-focused cognitive behavioural therapies (k = 41), there was an estimated dropout of 10.6% (95% CI 7.5, 14.2). For

TFCBT arms from studies that defined dropout (k = 17), the equivalent figures were 14.3% (95% CI 9.4, 20.0).

For EMDR arms (k =7) there was an estimated dropout of 15.3% (95% CI 7.9, 25.3). When including only those studies that defined dropout, the estimate was 16.8% (95% CI 8.2, 17.8).

Considered together, all NICE consistent treatment arms (all trauma-focused cognitive behavioural therapies and EMDR) (k = 48) produced a pooled estimated dropout of 11.2% (95% CI 8.2, 14.5). Studies that defined dropout yielded a higher dropout estimate: 15.5% (95% CI 10.6, 20.4). Analysis of all active control arms (all those that were not consistent with NICE guidelines, including treatment as usual, other active psychotherapies, and those arms of component studies that removed narrative or exposure elements) (k = 18) yielded an estimated dropout of 12.8 (95% CI 7.6, 19.2). When only considering those studies that defined dropout (k = 10), estimated dropout rose to 17.4% (95% CI 10.1, 25.6). Analyses were repeated after removing the studies that were found to be of lower quality. The results were very similar.

Figure 3. *Forest Plot of Proportion Meta-Analysis: All Active Arms*

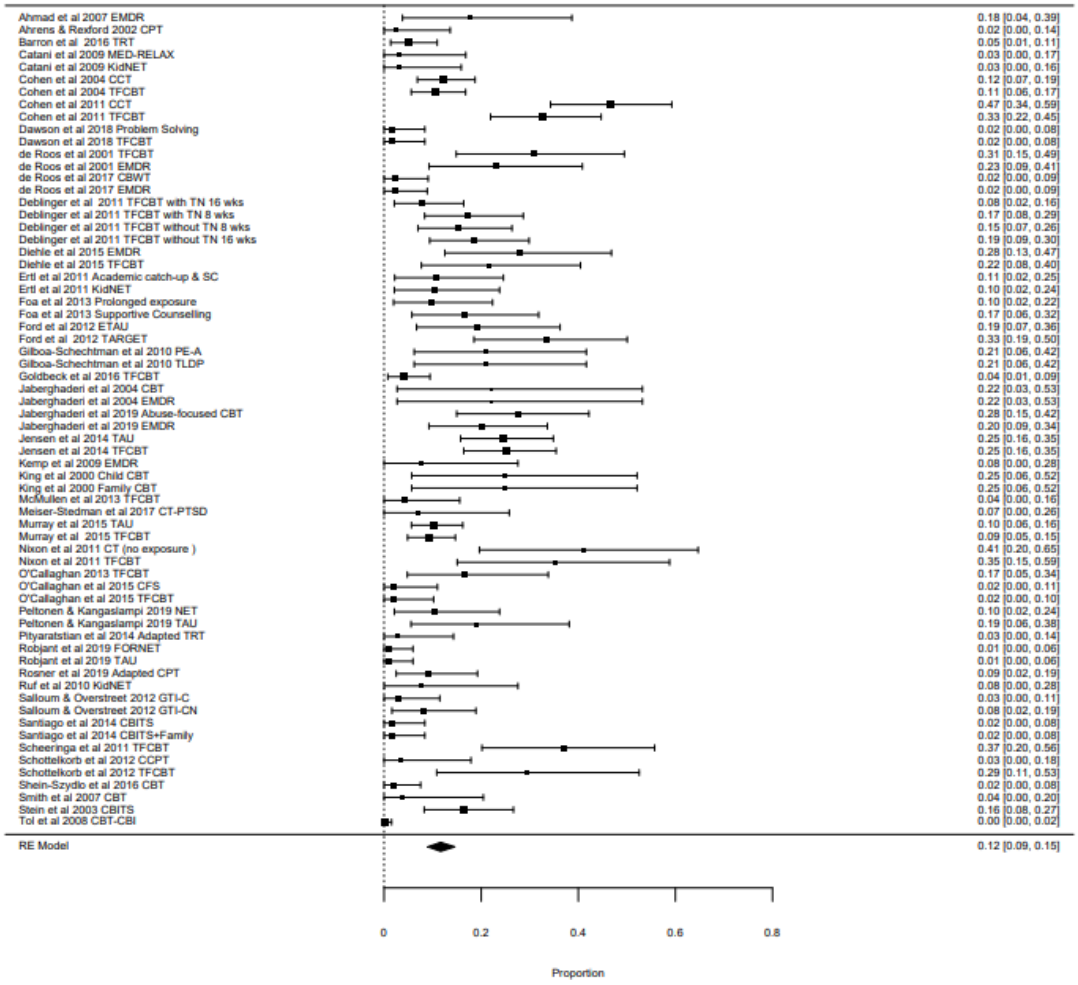


Table 2. *Results of Proportion Meta-Analyses*

Analysis	k	*N*	Prevalence (%)	95% CI		Heterogeneity statistics			
				LI	UL	Q	df	*p*	I^2 (%)
Dropout from all treatment arms excluding WL	66	2658	11.63	9.02	14.60	326.5	65	<0.001	79.0
Lower quality removed	*53*	*2383*	*11.63*	*8.88*	*14.80*	*286.7*	*52*	*<0.001*	*80.7*
Defined dropout	*32*	*1460*	*14.24*	*10.32*	*18.69*	*163.8*	*31*	*<0.001*	*81.0*
Dropout from all CBT arms	41	1696	10.56	7.45	14.17	206.1	40	<0.001	79.3
Lower quality removed	*31*	*1457*	*10.08*	*6.76*	*13.97*	*166.8*	*30*	*<0.001*	*80.1*
Defined dropout	*17*	*778*	*14.31*	*9.42*	*20.03*	*71.7*	*16*	*<0.001*	*77.7*
Dropout from all CBT and EMDR arms	48	1869	11.18	8.23	14.52	223.5	47	<0.001	77.6
Lower quality removed	*38*	*1626*	*11.11*	*7.90*	*14.81*	*189.2*	*37*	*<0.001*	*78.2*
Defined dropout	*22*	*891*	*15.16*	*10.62*	*20.35*	*85.3*	*21*	*<0.001*	*74.9*
Dropout from all EMDR arms	7	173	15.53	7.85	25.30	15.7	6	0.015	59.0
Lower quality removed	*5*	*151*	*16.18*	*6.86*	*28.49*	*14.3*	*4*	*0.005*	*70.1*
Defined dropout	*6*	*160*	*16.78*	*8.68*	*17.77*	*15.1*	*5*	*0.010*	*63.6*
Dropout from all non-trauma focussed arms[a]	18	789	12.81	7.64	19.16	90.1	17	<0.001	82.4
Lower quality removed	*17*	*775*	*13.42*	*7.96*	*20.03*	*87.8*	*16*	*<0.001*	*83.1*
Defined dropout	*10*	*495*	*17.38*	*10.50*	*25.56*	*43.4*	*9*	*<0.001*	*79.2*

Note. WL = Waiting List; CBT = Cognitive Behavioural Therapies; EMDR = Eye Movement Desensitisation and Reprocessing

[a] All active control arms, non-NICE recommended psychotherapies and the arms from component studies with exposure or trauma narrative elements removed

Odds Ratios

Odds ratios were calculated to determine the relative likelihood of dropout between different classes of intervention and control arms. The results are presented in Table 3. There were no instances of statistically significant difference.

Table 3. *Odds Ratios of Dropout From Different Types of Intervention*

				95% CI			Heterogeneity statistics			
Analysis	**k**	***N***	**Odds Ratio**	**LL**	**UL**	***p***	**Q**	**df**	***p***	**I^2 (%)**
CBT vs any active control	22	1848	0.89	0.68	1.17	0.398	12.2	21	0.935	0
Lower quality removed	*20*	*1799*	*0.87*	*0.66*	*1.14*	*0.398*	*9.1*	*19*	*0.972*	*0*
Defined dropout	*15*	*1337*	*0.85*	*6.23*	*1.15*	*0.398*	*8.0*	*14*	*0.889*	*0*
EMDR vs any active control	5	283	1.03	0.54	1.93	0.938	1.3	4	0.870	0
Lower quality removed	*4*	*265*	*1.03*	*0.53*	*1.99*	*0.938*	*1.3*	*3*	*0.741*	*0*
Defined dropout [a]	-	-	-	-	-	-	-	-	-	-
CBT or EMDR vs waiting list	17	1417	1.01	0.50	2.04	0.975	25.9	16	0.055	42.3
Lower quality removed	*12*	*1153*	*1.22*	*0.33*	*2.03*	*0.975*	*17.7*	*11*	*0.088*	*42.2*
Defined dropout [b]	-	-	-	-	-	-	-	-	-	-
CBT or EMDR vs Active control[c]	14	1299	0.88	0.63	1.21	0.424	7.7	13	0.863	0
Lower quality removed	*13*	*1268*	*0.85*	*0.61*	*1.18*	*0.424*	*4.6*	*12*	*0.971*	*0*
Defined dropout	*8*	*800*	*0.83*	*0.57*	*1.21*	*0.424*	*4.5*	*7*	*0.720*	*0*
Component studies[d]	4	314	0.81	0.42	1.55	0.518	2.0	3	0.581	0
Lower dropout removed [a]	-	-	-	-	-	-	-	-	-	-
Defined dropout [b]	-	-	-	-	-	-	-	-	-	-

Note. LL = Lower limit; UL = Upper limit; CBT = Cognitive Behavioural Therapies; EMDR = Eye Movement Desensitisation and Reprocessing; WL = Waiting List

[a]analysis not conducted because there were too few eligible arms (k = 2). [b]same as the analysis above. [c]excludes component studies and EMDR v TFCBT studies. [d] Arms with exposure/trauma narrative component v arms with those elements removed.

Sub-group and moderator analyses

Proportion meta-analyses examined potential predictor variables separately and then meta-regressions were conducted in order to explore whether any predictor of dropout could be identified. Results are presented in Table 4 and Table 5. Two moderators produced statistically significant results. The first was individual versus group format: group interventions were associated with fewer dropouts. This continued to be the case once lower quality studies were removed. It was not possible to examine if this held true when considering only those studies that had defined dropout because doing this removed all of the group arms. The second statistically significant association related to whether the intervention was delivered by lay people from local communities or by expert therapists.

Interventions delivered by lay people were associated with significantly fewer participants dropping out. This continued to be the case when lower quality studies were removed, and when considering only those studies that defined dropout.

Table 4. *Proportion Dropout Meta-Analyses for Each Active Arm by Subgroup*

				95% CI		Heterogeneity statistics			
Analysis	**k**	***N***	**Dropout Prevalence (%)**	**LL**	**UL**	**Q**	**df**	***p***	**I^2 (%)**
Individual vs group									
All individually delivered arms[a]	53	2067	14.17	11.06	17.61	218.3	52	<0.001	76.9
All group arms[a]	13	591	3.99	1.80	7.11	34.9	12	<0.001	59.7
Multiple vs single trauma									
All multiple or mixed trauma arms	55	2410	11.12	8.23	14.17	286.0	54	<0.001	79.9
All single incident trauma arms	11	248	15.09	7.53	2.47	38.9	11	<0.001	72.3
Lay vs expert therapist									
All lay delivered arms	13	628	4.10	1.76	7.43	40.0	23	<0.001	64.3
All expert delivered arms	54	2030	14.03	10.10	14.5	212.1	52	<0.001	76.2

[a] Experimental or control arms

Table 5. *Results of Moderator Analysis*

			95% CI			Heterogeneity statistics			
Moderator	**k**	**Coefficient**	**LCI**	**UCI**	***p***	**Q**	**df**	***p***	***I*²** **(%)**
Individual vs Group[a]	66	-0.18	-0.28	-0.08	**<0.001**	253.2	65	<0.001	74.7
Defined dropout[b]	-	-	-	-	-	-	-	-	-
Lower quality removed	*53*	*-0.18*	*-0.30*	*-0.05*	***0.005***	*220.4*	*52*	*<0.001*	*77.4*
Single incident vs multiple/mixed trauma	66	-0.06	-0.18	-0.06	0.345	324.9	65	<0.001	79.2
Defined dropout	*32*	*0.085*	*-0.08*	*0.25*	*0.322*	*125.3*	*31*	*<0.001*	*76.0*
Lower quality removed	*53*	*-0.07*	*-0.20*	*0.06*	*0.269*	*284.6*	*52*	*<0.001*	*80.8*
Number of sessions	63	<0.00	-0.01	0.01	0.461	313.6	62	<0.001	79.1
Defined dropout	*30*	*0.01*	*-0.01*	*<0.00*	*0.434*	*126.7*	*29*	*<0.001*	*77.2*
Lower quality removed	*50*	*<0.00*	*-0.01*	*0.01*	*0.914*	*272.0*	*49*	*<0.001*	*81.0*
CBT vs other[c]	66	-0.05	-0.14	0.04	0.317	312.1	65	<0.001	78.8
Defined dropout	*32*	*-0.04*	*-0.15*	*0.08*	*0.548*	*129.4*	*31*	*<0.001*	*76.4*
Lower quality removed	*53*	*-0.06*	*-0.16*	*0.04*	*0.214*	*269.4*	*52*	*<0.001*	*80.2*
CBT or EMDR vs other[d]	66	-0.03	-0.12	0.07	0.612	316.7	65	<0.001	79.0
Dropout defined	*32*	*-0.03*	*-0.15*	*0.09*	*0.624*	*128.7*	*31*	*<0.001*	*76.3*
Lower quality removed	*53*	*-0.04*	*-0.14*	*0.06*	*0.446*	*274.5*	*52*	*<0.001*	*80.6*
Expert vs lay delivered	66	0.09	0.03	0.14	**0.003**	261.3	65	<0.001	87.1
Defined dropout	*32*	*0.10*	*0.01*	*0.20*	***0.027***	*143.5*	*31*	*<0.001*	*80.6*
Lower quality removed	*53*	*0.20*	*0.04*	*0.15*	***0.001***	*213.6*	*52*	*<0.001*	*87.4*

[a]Robjant et al. (2019) included individual and group sessions but is considered here to be a primarily individual intervention. [b]No eligible arms. [c]CBT v Other (1 v 0).

[d]CBT or EMDR v Other (1 v 0).

Publication Bias

Visual inspection of the funnel plot related to the above analyses did not show evidence of publication bias (Page, Higgins, & Sterne, 2020) (Appendix G).

Discussion

There has been well-documented under-utilisation of trauma-focused treatments and exposure techniques to treat PTSD despite their significant evidence-base. This has been linked to perceptions among clinician about the potential adverse effects of these approaches, their potentially worsening symptoms and increased risk of dropout from treatment (e.g. Finch et al., 2020a). This study pooled data from 40 RCTs regarding PTSD treatment in this population. Results found that dropout from RCTs has tended to be relatively low. All estimates for dropout were below 15.5%. Dropout rates of this order compare favourably with the mean dropout rate (28.4%) found by de Haan et al. (2013) in their meta-analysis of children and young people dropping out from treatment in psychotherapy efficacy studies. They are also lower than that found in recent adult population meta-analyses that related specifically to PTSD: 16% (Lewis et al., 2020) and 18% (Imel et al., 2003). However, heterogeneity was large in all cases, suggesting that there was high degree of variability in dropout rates across studies.

Odds ratios were used to examine whether there were differences in the likelihood of dropout from different conditions when directly compared. In these analyses there was no evidence of significant heterogeneity across studies. This is reflective of RCT study design wherein many of the variables are kept constant between the two (or more) arms being compared (e.g. length of treatment). This means that odd ratios built on these direct comparisons between arms, produce less

variability in the dropout rate across studies. No type of intervention or control condition was associated with significantly greater or lesser odds of dropout. This includes dropout from inactive control (waiting list) conditions.

Different potential moderators of dropout were considered. Of these, group or individual format, and who delivered the intervention were significant. In contrast to adult population studies which have found group treatments to be either associated with higher dropout (Goetter et al., 2015; Imel et al., 2013) or not to be significant (Lewis et al., 2020), this review found that children and young people were *less* likely to dropout from group treatment. Children and young people may be more used to, and comfortable in, group settings. They often accessed group treatment by virtue of their participation in other systems and apparatus such as their school or Non-Governmental Organisations established in local communities. LMIC were over-represented in the group interventions, making up 50% of group interventions but only 37.5% of the total sample. There may be additional factors in these contexts that promote attendance, such as access to other services and assistance or a paucity of alternative sources of support in situations of mass displacement, conflict or disaster. It is also possible that attendance at group interventions was not rigorously monitored and/or reported.

Interventions delivered by lay members of the community who had been trained to deliver the treatment was also associated with lower dropout. Lay-delivered interventions all took place in LMIC contexts. Lay people may bring cultural knowledge and credibility that enhances participation. This finding is promising in that it supports the vision espoused by the World Health Organisation (WHO) of nonspecialised healthcare workers being critical in meeting the demand for mental health interventions around the world (mhGap Intervention Guide for

mental, neurological and substance use disorders in non-specialized health settings; WHO, 2010). It is encouraging to note that while professionals have identified the need for additional training as a potential barrier to implementing trauma-focused treatments (Finch et al., 2020b), these needs may be met with relatively modest input given the success of these studies in utilising lay facilitators. Further research that explores the potential confounding effect of variables such as the wider economic and cultural context, type of traumatic event, to be considered alongside format of delivery and level of therapist expertise, may be indicated.

Study quality did not appear to affect the results; however, using only those studies which had explicitly defined dropout consistently yielded a higher dropout rate. One might expect that defining dropout could reduce the number of participants considered to have dropped out, as compared to inferring dropout rate from the difference between the number randomised and the number who participated in post-treatment assessment. In the first instance, someone could be considered to have completed treatment after only having taken part in a relatively fewer sessions (e.g. a minimum of three from a possible 16 sessions, Deblinger et al., 2012) and in the latter, someone could have attended all or almost all planned session but be absent only from post-assessment and still designated as having dropped out. Instead, the reverse was found. If a lot of dropout occurs at the beginning of treatment, one might expect that there would be little difference between studies that defined dropout and those that did not, as early leavers from treatment would be captured in either instance. Therefore, these findings may imply that dropout tended to occur later in treatment, but this would require further research to explore. It may be that the fact dropout was considered *a priori* indicated a greater level of consideration

was given to the issue of dropout and therefore a more stringent approach to identifying dropouts was adopted.

Strengths and Limitations

There are a number of limitations to this study. In particular, it has been consistently found that dropout from RCTs is less than in naturalistic settings (de Haan et al., 2013). This has been linked to the exclusion criteria for participation in RCTs which is frequently seen to skew the sample away from comorbidity or complexity (Schottenbauer et al., 2008). This may limit the applicability of these findings to other settings. However, it is important to recognise that the range of contexts and populations covered by the trials reviewed here, does include diverse, complex and challenging contexts, including people who have encountered multiple and profound trauma on a mass scale or over long periods.

This diversity may also be a further limitation, in that the statistical heterogeneity between studies was high. This reflects the wide-ranging locations, treatments, format, duration and facilitators, and necessitates caution when pooling data in this way. The advantage of this pooling is that it allows for well-powered analysis in a context where there are often low numbers from individual studies. There is further heterogeneity to be found within the samples of participants, particularly with respect to age. Discussing children and young people as a homogenous group is questionable when this covers an enormous range in terms of physical, cognitive and social development. It is not just possible, but likely that young children and older adolescents relate to treatment in considerably different ways, and that these differences are masked when not distinguishing between different age groups.

This analysis did distinguish between studies that defined dropout versus those in which the dropout was inferred from the number of people at post-treatment assessment. Studies were not further grouped according to the type of definition that was utilised. As noted above, inferring dropout from the numbers of participants that were randomised and at post-treatment assessment is imperfect. There may be people who were present at post-treatment assessment who had not attended all or most of the treatment sessions. Conversely there may be people missing from post-treatment assessment who did attend the treatment sessions and were missing from post-assessment for some other reason. Dropout at an early stage might be associated with quite different factors to that which accompany dropout at a later stage in therapy, including that some later dropout might represent some 'early responders' (Szafranski et al., 2017). Using the number that was randomised itself could be misleading because dropout has been found to be significant prior to the first session (Gharfoori et al., 2019). Research in this area would benefit from a consistent definition being adopted which would allow for greater confidence in drawing comparisons across studies. If trials reported as standard, what comprises treatment completion (whether expressed as a number of sessions or as the core components of the protocol that are required to have been delivered), and the known reasons for any dropout and the stage at which it occurred, the robustness of future analyses of this kind will much bolstered. Information about symptom severity at the point of dropout (or across the full protocol in the case of treatment completers) would further advance our ability to draw links between specific therapeutic techniques and dropout, and the impact(s) of a partial 'dose' of treatment.

This study designated interventions as either being trauma-focused and NICE consistent (i.e. involving explicit exposure) or not. It is likely that rather than

dichotomous categories, the degree of exposure utilised by different trauma-focused approaches varies along a spectrum in a way that is not captured here. Reporting greater detail about the degree of explicit exposure contained within treatment conditions would also support further research in this area. Similarly, 'catch-all' categories for control conditions are also imperfect. 'Treatment as usual' controls often vary considerably, and these were then grouped with other active psychotherapeutic approaches. Categorising studies in this way is likely to obscure real differences in the type and intensity of the interventions provided and therefore risks missing important information about the treatment experiences of these young people.

Indeed, the treatment experience of young people is only peripherally and indirectly addressed by this study. Meta-analysis as a methodological approach is perhaps poorly suited to do so. Other approaches that seek to qualitiatively explore the perspectives of key actors and their own narratives about the costs, challenges, risks and benefits of persisting in treatment following trauma, could contribute to a fuller understanding of these issues. What meta-analysis has allowed for is the statistical estimates about the prevalence of dropout in different contexts. Meta-analytic procedures are especially helpful when considering a phenomenon with low numbers of instances in individual trial arms. However, the accuracy of these estimates is only as good the studies that produced them. While study quality was assessed and sentivity analyses concerning only higher quality trials was conducted, undetected sources of bias within the included trials may still be felt in these findings. The high degree of heterogeneity in the prevalence estimates suggests that there are large differences in dropout rates across studies, but what factors influence these differences, and their relative weight and possible differential impact, remains

unclear. In addition, from this analysis we are limited in what we can glean about the reasons for dropout where it does occur, and the reasons for higher rates in some contexts or for some subgroups, than in/for others. Future research is likely to need to concern itself with these questions and may involve further, more fine-grained moderator and mediator analyses to discover for whom, and in what circumstances, does dropout occur.

In conclusion however, while it is difficult to be confident about the reasons for dropout, the picture found here is one of high levels of retention, and thus one that suggests that these treatments are broadly well tolerated by children and young people

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Chapter 5: Discussion and Critical Evaluation

The above chapters bring together several strands of research regarding the treatment of children and young people who have been exposed to trauma, in a unique way. Dropout from psychotherapeutic treatment is a vexed and pressing issue with direct clinical relevance for therapists, young people and families alike. High rates of trauma exposure around the world and the resultant debilitating and chronic sequelae in the lives of young people, mean there is high demand for effective interventions that can reduce these adverse consequences. However, such interventions are limited in their impact if they are not acceptable to a significant proportion of the young people they are designed to help. It is incumbent on clinicians and researchers alike to develop our understanding about what contributes to dropout from treatment and how this might best be addressed. The preceding chapters represent an attempt to view this issue from different perspectives and afford new light on this subject based on the evidence available to date. Here, the main findings are reflected upon and some recommendations for future research are offered.

Most strikingly, the Systematic Review and Meta-Analysis are thought-provoking in their contrasts. The Systematic Review saw evidence of high rates of dropout from trauma-focused treatment, an outcome that was as frequently found to be just as likely as the possibility of completing treatment. The Meta-Analysis in contrast saw high levels of retention with many young people continuing on to feature in post-treatment assessment. One standard explanation for these differences would be that the samples enrolled into clinical trials are more homogenous than those who utilize standard community services. Exclusion criteria that are drawn for studies such as these often screen out those with multiple mental health diagnoses,

co-occurring learning disabilities or substance use issues, and young people with higher levels of risk associated with them. There are methodological, practical and ethical reasons for this. Importantly, the more homogenous the sample, the easier it is to draw conclusions about treatment efficacy, which is rightfully the business of RCTs to address (see Schnurr, 2007 for a more detailed discussion of this).

However, it would be wrong to characterize the studies in the Meta-Analysis as having samples that are not complex or challenging. Many of the young people enrolled in these studies represent some of world's most vulnerable young people – former Child Soldiers, refugees, victims of physical and sexual abuse and survivors of devastating natural disasters. Given what we understand about the impact of these experiences (Dorsey et al., 2017), one might suspect that comorbidity was high in some of these samples, whether or not there was a mental health infrastructure to identify it, or cultural schema to construe it, as such.

This does not mean that there are not important questions about the external validity of the findings of RCTs and their ability to generalize these to other contexts. Though it is interesting to note, that in terms of diversity of setting, the studies in the Meta-Analysis were much more geographically varied than the studies that were included in the Systematic Review. They also involved a greater range of different treatment approaches (modality and format).

Nevertheless, when it comes to retention, RCTs may have a number of advantages as compared to usual care settings. There may be incentives to families to remain in the study, there may be greater resources available to follow up absences or prompt attendance. Knowledge that one is involved in a trial may engender greater hope for change, motivating engagement. Knowledge that one is in a

'Waiting List Arm' - and not just a waiting list – might make the waiting more tolerable.

Another key (potential) difference is that treatments may be delivered more faithfully to the way they were conceptualized. Integrity checks, therapists trained for the purpose of the trial, authors who are involved in the devising of manuals and then their delivery, all are likely to contribute to higher levels of fidelity to treatment protocols. Research suggests that this is significantly less the case in other settings (Becker et al., 2004). What is more difficult to discern is the relationship that this has with clinician perception of both their clients and the treatments. Most crucially, whether these perceptions are informed by clinical realities that are obscured in RCTs, or by misapprehensions about particular treatment approaches, that are not shared by trial therapists.

As was discussed in the Bridging Chapter, there is evidence to suggest that even among quite specialist trauma practitioners, there may be reticence about applying some treatment approaches or techniques regardless of their evidence base (Borntrager et al., 2013; van Minnen et al., 2010). If there is concern that treatment can exacerbate symptoms and therefore can only occur safely in a context of broad stability, it is easy to imagine that for some young people this hypothesized state of readiness simply fails to materialize. This could be something that lies behind the considerable difference in the length of treatment in RCT protocols (generally in the order of eight to sixteen sessions) and in the settings covered by the Systematic Review (which ranged as high as 114 sessions). While there are likely to be differences in the length of treatment reflecting an idiosyncratic pace of therapist and patient moving through its different components, the length of treatments so divergent it implies that there is significant departure from evidence-based protocols

of the sort tested in RCTs. There is even the possibility that some dropout is not a response to receiving trauma-focused treatments, it is a response to *not* receiving it.

However, it is also the case that some RCTs used quite minimal attendance when defining treatment completion. In some instances, participants who attended any more than two sessions were considered alongside people who had attended four times this many, as having completed treatment (e.g. Cohen et al., 2004). From an efficacy point of view, this may be seen as an attempt to capture the effects of even quite brief contact with a particular intervention, but from the perspective of assessing the acceptability of a treatment it is more problematic. This does not however, undermine the broader finding of the Meta-Analysis. In most cases dropout data represented the difference between the number of participants randomized to an arm, and the number present at post-assessment. This produced estimates for dropout were consistently low as compared to other findings of dropout in this population (e.g. de Haan et al., 2013) and they did not significantly differ according to whether the treatment was trauma-focused or not. This suggests that there is nothing inherent to trauma-focused treatments that increases the likelihood of dropout, and that all other things being equal, these treatments are well tolerated.

Of course, all other things are not equal, and this fact emerged clearly from the Systematic Review where socio-demographic differences were found to consistently predict differential dropout rates for some groups. Black children and young people in the USA emerged as particularly at risk of not receiving a full intervention. Children of younger, unmarried, less educated parents, on low incomes, were also shown to be poorly served by community trauma-focused services. This is likely to be reflective of complex and intersecting practical and cultural, perceptual or attitudinal factors. It is imperative that this treatment gap for

vulnerable groups facing multiple disadvantages, is addressed both by researchers and service providers. Fortunately, there are reasons to be hopeful about the potential for adaptations that can be made to evidence-based interventions that address some of the barriers that may stand between some young people and treatment completion.

For example, Dorsey et al. (2014) augmented TFCBT for children placed in foster homes, with an initial phone-call to foster carers which directly discussed potential barriers and asked about what the caregiver's most significant concern was about the child. This included some problem-solving around concrete barriers and was revisited with the family at the initial face to face appointment. This engagement strategy was not found to make a difference to the likelihood of attendance of the first appointment or to the number of cancelled sessions. However, those families who received the additional engagement strategy phone call were more likely to receive four or more sessions than those who did not (96.0% vs. 72.7% respectively) and a startling 80% of completed treatment, compared to 40.9% those in the standard condition.

Another small exploratory study by Stewart et al. (2019) conducted with three African American young people with multiple barriers to accessing treatment including distance to clinic, lack of transport, caregiver schedules and inability to miss school due to academic concerns. They received culturally tailored TFCBT delivered via telehealth technology (video-call) within a school setting. There was an emphasis on 'racial socialisation' messages including racial pride, racial barriers, racial equality, racial achievement and appreciation of spirituality, which were incorporated into treatment in order to tailor to the particular cultural context. While it is not possible to know whether approaches such as these could make a difference

to dropout for larger samples, it is an encouraging example of addressing both practical and cultural barriers in order to promote engagement in an under-served population.

Where Does This Leave Questions About the Relationships Between Trauma-Focused Treatment, Symptoms and Dropout?

As was noted in the Systematic Review, post-traumatic stress symptomology – albeit frequently only taken at baseline – has not been strongly implicated as a factor influencing dropout in the evidence base to date. However, while the picture that emerges here is broadly reassuring about the risks of trauma-focused treatments in producing differential dropout rates, this does not negate the possibility that some people may find their symptoms increase during treatment, especially with the introduction of imaginal or *in vivo* exposure techniques. Avoidance is a core clinical feature of post-traumatic stress, and recognising, eliciting and tackling this is therefore a fundamental aspect of trauma-focused treatments. That this can be discomforting or even distressing at times is not surprising. Importantly, this discomfort applies to both therapist and patient - as does the potential allure of avoidance. The communities represented in the chapters above are often children, young people and families in positions of acute vulnerability, facing a host of other challenges and demands, including the fact they may not currently be safe from further trauma exposure. In this context, therapist worries about 'making it worse' are perhaps readily understood. Moreover, many traumas are interpersonal in nature and can produce overgeneralised fears about danger and threat (Meiser-Stedman et al., 2009). It is perhaps unsurprising then, that therapy of all stripes - profoundly interpersonal and often *exposing*, quite apart from any formal 'exposure'- can be experienced as challenging on multiple levels. However, the therapist has a key role

in modelling that thinking and talking about traumatic events is not dangerous, and to do otherwise is to risk inadvertently reinforcing avoidance. Being transparent about the potential challenges of treatment including the possibility of symptoms temporarily increasing at points is both ethical and pragmatic. Stressing the importance of persevering with treatment in the face fluctuating symptoms, may help therapists anticipate increased risk of dropout as treatment proceeds. Therapists are fortunate to have a body of research from which they can draw to assist with this. For example, both Foa et al. (2002) and Larsen et al. (2016) found symptom exacerbation did occur for a minority of people, but importantly it receded again quickly, with scores returning to their lower level at the point of the next measurement two sessions later. There is also good reason to believe that those who persist with treatment achieve better end state functioning and are more likely to fall below the clinical threshold for symptoms at follow up (Steinberg et al., 2019).

The gulf between RCTs and what has been found in other settings, asks important questions of people in both spheres. Reducing the discrepancies between these two is likely to be important to advance our understanding in this field. A key part of this is likely to be the adoption of a consistent way in which dropout is defined and applied. Without this, it is difficult to distinguish what are clinically significant differences and what is a function of starkly different ways of operationalising treatment completion. That said, dropout is an undoubted problem in some settings. It is the elision between this and symptom exacerbation that is more suspect. Tracking symptom fluctuations across the course of treatment may support further research in this area by temporally linking changes in symptom to treatment discontinuation.

It is also important not to lose sight of the many concrete ways in which people can be excluded from accessing high quality healthcare (e.g. insurance status, financial issues, transport, scheduling, childcare, over-subscribed services, long waiting times) as well stigma, discrimination and cultural assumptions about the seeking and receiving of therapeutic support. These social, cultural and economic factors are likely to provide important context to the decision to (dis)continue treatment. While sociodemographics have been considered by many studies, the subjective experience of young people accessing treatment, and facing multiple and overlapping adversities, is still marginal in the literature. Qualitative research approaches may enhance our understanding of what service users consider important to engagement and retention, and importantly, foreground the voice of young people themselves. This subjective experience is likely to be influenced by the skills, experience and other attritbutes, of the therapist. This is another neglected area in a literature that has tended to concern itself with who is at elevated risk of dropping out, rather than what they are dropping out from.

In summary, the above chapters point to trauma-focused treatments being well tolerated in controlled trial settings, and much less so in 'real world' clinical settings. Type of treatment, including whether there was explicit use of exposure techniques, did not appear to affect the likelihood of dropout. Treatment in trials also tended to be much shorter than in everyday community settings, but treatment completion in trials was sometimes defined as comprising quite minimal attendance. The implications of these findings are that there are number of areas in which future research is warranted, but perhaps most pressing are those research questions that ask what is different in RCTs that enables them to retain patients and how can this be replicated in other contexts. Possibilities include greater fidelity to protocols and

access to focused, timely supervision that supports this; differences in the skill, experience or confidence of those delivering interventions; differences in time and resources available or presence and promotion of explicit strategies to retain people in treatment; or differences in the profile of the people being treated (for example, symptom severity, co-morbidity, economic and social resources, attitudes and cultural identity). Another key implication is that there is a need for broadening the scope of the current evidence base, through the expansion of research to incorporate more diverse locations, communities, different models and format of interventions, and different facilitators. This is especially important to inform strategies to meet the needs of children and young people in Low and Middle Income Countries exposed to trauma. In order that the research exploring these possibilities is robust, it requires the adoption of a consistent definition of dropout across research and clinical practice. This needs to reflect not just the number of sessions, nor the therapist's evaluation alone, but the aspects of intended treatment that have or have not been delivered, if we are to discern what dropout represents. Finally, there is a need for the voice of young people themselves, their perceptions and experiences, to be explored and amplified, in order for decisions about accessing, continuing and completing psychological treatment following trauma in this population, be more fully understood.

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Appendix

Appendix A. Systematic Review Journal Formatting Guidelines

DESCRIPTION

The Journal of Affective Disorders publishes papers concerned with AFFECTIVE DISORDERS in the widest sense: DEPRESSION, MANIA, ANXIETY AND PANIC. It is interdisciplinary and aims to bring together different approaches for a diverse readership. High quality papers will be accepted dealing with any aspect of affective disorders, including biochemistry, pharmacology, endocrinology, genetics, statistics, epidemiology, psychodynamics, classification, clinical studies and studies of all types of treatment.

USE OF INCLUSIVE LANGUAGE

Inclusive language acknowledges diversity, conveys respect to all people, is sensitive to differences, and promotes equal opportunities. Content should make no assumptions about the beliefs or commitments of any reader; contain nothing which might imply that one individual is superior to another on the grounds of age, gender, race, ethnicity, culture, sexual orientation, disability or health condition; and use inclusive language throughout. Authors should ensure that writing is free from bias, stereotypes, slang, reference to dominant culture and/or cultural assumptions. We advise to seek gender neutrality by using plural nouns ("clinicians, patients/clients") as default/wherever possible to avoid using "he, she," or "he/she." We recommend avoiding the use of descriptors that refer to personal attributes such as age, gender, race, ethnicity, culture, sexual orientation, disability or health condition unless they are relevant and valid. These guidelines are meant as a point of reference to help identify appropriate language but are by no means exhaustive or definitive.

CONTRIBUTORS

Each author is required to declare his or her individual contribution to the article: all authors must have materially participated in the research and/or article preparation, so roles for all authors should be described. The statement that all authors have approved the final article should be true and included in the disclosure.

Types of Papers

The Journal primarily publishes:

Full-Length Research Papers (up to 5000 words, excluding references and up to 6 tables/figures)

Review Articles and Meta-analyses (up to 8000 words, excluding references and up to 10 tables/figures)

Short Communications (up to 2000 words, 20 references, 2 tables/figures)

Correspondence (up to 1000 words, 10 references, 1 table/figure).

At the discretion of the accepting Editor-in-Chief, and/or based on reviewer feedback, authors may be allowed fewer or more than these guidelines.

PREPARATION OF MANUSCRIPTS

Articles should be in English. The title page should appear as a separate sheet bearing title (without article type), author names and affiliations, and a footnote with the corresponding author's full contact information, including address, telephone and fax numbers, and e-mail address (failure to include an e-mail address can delay processing of the manuscript).

Papers should be divided into sections headed by a caption (e.g., Introduction, Methods, Results, Discussion). A structured abstract of no more than 250 words

should appear on a separate page with the following headings and order: Background, Methods, Results, Limitations, Conclusions (which should contain a statement about the clinical relevance of the research). A list of three to six key words should appear under the abstract. AUTHORS SHOULD NOTE THAT THE 'LIMITATIONS' SECTION BOTH IN THE DISCUSSION OF THE PAPER AND IN A STRUCTURED ABSTRACT ARE ESSENTIAL. FAILURE TO INCLUDE IT MAY DELAY IN PROCESSING THE PAPER, DECISION MAKING AND FINAL PUBLICATION.

FIGURES AND PHOTOGRAPHS

Figures and Photographs of good quality should be submitted online as a separate file. Please use a lettering that remains clearly readable even after reduction to about 66%. For every figure or photograph, a legend should be provided. All authors wishing to use illustrations already published must first obtain the permission of the author and publisher and/or copyright holders and give precise reference to the original work. This permission must include the right to publish in electronic media.

TABLES

Tables should be numbered consecutively with Arabic numerals and must be cited in the text in sequence. Each table, with an appropriate brief legend, comprehensible without reference to the text, should be typed on a separate page and uploaded online. Tables should be kept as simple as possible and wherever possible a graphical representation used instead. Table titles should be complete but brief. Information other than that defining the data should be presented as footnotes.

Please refer to the generic Elsevier artwork instructions: http://authors.elsevier.com/artwork/jad.

PREPARATION OF SUPPLEMENTARY DATA

Elsevier accepts electronic supplementary material to support and enhance your scientific research. Supplementary files offer the author additional possibilities to publish supporting applications, movies, animation sequences, high-resolution images, background datasets, sound clips and more.
Supplementary files supplied will be published online alongside the electronic version of your article in Elsevier web products, including ScienceDirect: http://www.sciencedirect.com. In order to ensure that your submitted material is directly usable, please ensure that data is provided in one of our recommended file formats. Authors should submit the material in electronic format together with the article and supply a concise and descriptive caption for each file. For more detailed instructions please visit our Author Gateway at: https://www.elsevier.com/authors.

ABSTRACT

A concise and factual abstract is required. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separately from the article, so it must be able to stand alone. For this reason, References should be avoided, but if essential, then cite the author(s) and year(s). Also, non-standard or uncommon abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself.

KEYWORDS

Immediately after the abstract, provide a maximum of 6 keywords, using American spelling and avoiding general and plural terms and multiple concepts (avoid, for example, 'and', 'of'). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes.

Abbreviations

Define abbreviations that are not standard in this field in a footnote to be placed on the first page of the article. Such abbreviations that are unavoidable in the abstract must be defined at their first mention there, as well as in the footnote. Ensure consistency of abbreviations throughout the article.

Acknowledgements

Collate acknowledgements in a separate section at the end of the article before the references and do not, therefore, include them on the title page, as a footnote to the title or otherwise. List here those individuals who provided help during the research (e.g., providing language help, writing assistance or proof reading the article, etc.).

Nomenclature and units

Follow internationally accepted rules and conventions: use the international system of units (SI). If other quantities are mentioned, give their equivalent in SI. You are urged to consult IUPAC: Nomenclature of Organic Chemistry for further information.

REFERENCES

Citation in text

Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Any references cited in the abstract must be given in full. Unpublished results and personal communications are not recommended in the reference list, but may be mentioned in the text. If these references are included in the reference list they should follow the standard reference style of the journal and should include a substitution of the publication date with either 'Unpublished results' or 'Personal communication'. Citation of a reference as 'in press' implies that the item has been accepted for publication.

Data references

This journal encourages you to cite underlying or relevant datasets in your manuscript by citing them in your text and including a data reference in your Reference List. Data references should include the following elements: author name(s), dataset title, data repository, version (where available), year, and global persistent identifier. Add [dataset] immediately before the reference so we can properly identify it as a data reference. The [dataset] identifier will not appear in your published article.

Reference style

Text: All citations in the text should refer to:

1. *Single author:* the author's name (without initials, unless there is ambiguity) and the year of publication;

2. *Two authors:* both authors' names and the year of publication;

3. *Three or more authors:* first author's name followed by 'et al.' and the year of publication.

Citations may be made directly (or parenthetically). Groups of references can be

listed either first alphabetically, then chronologically, or vice versa.

Examples: 'as demonstrated (Allan, 2000a, 2000b, 1999; Allan and Jones, 1999)…. Or, as demonstrated (Jones, 1999; Allan, 2000)… Kramer et al. (2010) have recently shown …'

List: References should be arranged first alphabetically and then further sorted chronologically if necessary. More than one reference from the same author(s) in the same year must be identified by the letters 'a', 'b', 'c', etc., placed after the year of publication.

Examples:

Reference to a journal publication:

Van der Geer, J., Hanraads, J.A.J., Lupton, R.A., 2010. The art of writing a scientific article. J. Sci. Commun. 163, 51–59. https://doi.org/10.1016/j.Sc.2010.00372.

Reference to a journal publication with an article number:

Van der Geer, J., Hanraads, J.A.J., Lupton, R.A., 2018. The art of writing a scientific article. Heliyon. 19, e00205. https://doi.org/10.1016/j.heliyon.2018.e00205.

Reference to a book:

Strunk Jr., W., White, E.B., 2000. The Elements of Style, fourth ed. Longman, New York.

Reference to a chapter in an edited book:

Mettam, G.R., Adams, L.B., 2009. How to prepare an electronic version of your article, in: Jones, B.S., Smith , R.Z. (Eds.), Introduction to the Electronic Age. E-Publishing Inc., New York, pp. 281–304.

Reference to a website:

Cancer Research UK, 1975. Cancer statistics reports for the UK. http://www.cancerresearchuk.org/aboutcancer/statistics/cancerstatsreport/ (accessed

13 March 2003).

Reference to a dataset:

[dataset] Oguro, M., Imahiro, S., Saito, S., Nakashizuka, T., 2015. Mortality data for Japanese oak wilt disease and surrounding forest compositions. Mendeley Data, v1. https://doi.org/10.17632/xwj98nb39r.1.

VIDEO

SUPPLEMENTARY MATERIAL

Supplementary material such as applications, images and sound clips, can be published with your article to enhance it. Submitted supplementary items are published exactly as they are received (Excel or PowerPoint files will appear as such online). Please submit your material together with the article and supply a concise, descriptive caption for each supplementary file. If you wish to make changes to supplementary material during any stage of the process, please make sure to provide an updated file. Do not annotate any corrections on a previous version. Please switch off the 'Track Changes' option in Microsoft Office files as these will appear in the published version.

Appendix B. Adapted National Heart, Lung and Blood Institute Study Quality Tools for the assessment of Observational Cohort and Cross-Sectional Studies

(retrieved from https://www.nhlbi.nih.gov/health-topics/study-quality-assessment-tools).

Q1. Was the research question or objective in this paper clearly stated?

Q2. Was the study population clearly specified and defined?

Q3. Was the relationship between independent variables and dropout assessed separately (correlational analysis) (0) or together (regression) (1)?

Q4. Were all the subjects selected or recruited from the same or similar populations (including the same time period)? Were inclusion and exclusion criteria for being in the study prespecified and applied uniformly to all participants?

Q5. Was a sample size justification, power description, or variance and effect estimates provided?

Q6. Were measures of the independent variables (e.g. symptoms, demographics, trauma history) measured prior to treatment starting?

Q7. Were the mean and range of treatment length reported clearly?

Q8. Was the treatment(s) and treatment(s) setting clearly described?

Q9. Were independent variables clearly defined, measured with valid reliable tools, consistently implemented?

Q10. Were symptoms measured more than once?

Q11. Was dropout clearly defined and applied consistently?

Q12. Was missing data appropriately handled?

Q13. Was there consideration of potential confounding variables, mediator or moderator relationships or the limitations of the study?

Original Question	Replacement
3. Was the participation rate of eligible persons at least 50%	Was the relationship between independent variables and dropout assessed separately (correlational analysis) (0) or together (regression) (1)?
6. For the analyses in this paper, were the exposure(s) of interest measured prior to the outcome(s) being measured?	Were measures of the independent variables (e.g. symptoms, demographics, trauma history) measured prior to treatment starting?
7. Was the timeframe sufficient so that one could reasonably expect to see an association between exposure and outcome if it existed?	Was mean length and range of treatment length reported clearly?
8. For exposures that can vary in amount or level, did the study examine different levels of the exposure as related to the outcome (e.g., categories of exposure, or exposure measured as continuous variable)?	Was the treatment and the treatment setting clearly described?
9. Were the exposure measures (independent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?)	Were independent variables clearly defined, measured with valid reliable tools, consistently implemented?
10. Was the exposure(s) assessed more than once over time?	Were symptoms or other relevant independent variables measured more than once?
11. Were the outcome measures (dependent variables) clearly defined, valid, reliable, and implemented consistently across all study participants?)	Was dropout clearly defined and consistently applied?
12. Was loss to follow-up after baseline 20% or less?	Was missing data handled appropriately?
13. Were key potential confounding variables measured and adjusted statistically for their impact on the relationship between exposure(s) and outcome(s)?)	Was there consideration of potential confounding variables, mediator or moderator relationships or the limitations of the study?

Appendix C. Systematic Review Study Quality Assessment Scores

Study	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Total score
Celano et al., 2018	1	1	1	1	1	1	1	1	1	0	1	1	1	12
Chasson et al., 2008	1	1	1	CD	1	1	1	0	1	1	0	1	1	10
Chasson et al., 2013	1	0	1	CD	1	1	0	0	1	1	0	1	1	8
Eslinger et al., 2014	1	1	1	1	0	1	0	1	1	0	1	CD	1	9
Fraynt et al., 2014	1	1	1	1	1	1	1	1	1	CD	1	1	1	12
Gharfoori et al., 2019	1	1	1	1	0	1	1	1	1	CD	1	0	1	10
Lange et al., 2020	1	1	0	1	0	NA	0	1	1	NA	1	CD	1	7
Murphy et al., 2014	1	1	1	1	1	1	0	1	1	1	1	1	1	12
Ormhaug & Jensen, et al., 2018	1	1	1	1	1	1	1	1	1	0	1	1	1	12
Self-Brown et al., 2016	1	1	1	1	1	1	1	1	1	0	1	1	1	12
Sprang et al., 2012	1	1	1	1	1	1	0	0	1	1	1	1	1	11
Steinberg et al., 2019	1	1	1	0	0	1	0	1	1	1	1	1	1	10
Tebbett et al., 2018	1	1	1	1	1	1	0	0	1	0	1	1	1	10
Wamser-Nanney & Steinzor, 2016	1	1	0	1	1	1	1	1	1	0	1	CD	1	10
Wamser-Nanney & Steinzor, 2016	1	1	0	1	1	1	1	1	1	0	1	CD	1	10
Wamsey-Nanney, 2020a	1	1	1	1	1	1	1	1	1	0	1	CD	1	11

Wamser-Nanney, 2020b	1	1	1	1	1	1	0	1	1	0	1	CD	1	10
Wamser-Nanney, 2020c	1	1	0	1	1	1	1	1	1	1	1	1	1	12
Wamser-Nanney, 2020d	1	1	1	1	1	1	1	1	1	0	1	1	1	12
Yasinski et al., 2018	1	1	1	1	1	1	0	1	1	0	1	CD	1	10

Appendix D. Empirical Paper Journal Formatting Guidelines

Author Guidelines

1. Contributions from any discipline that further clinical knowledge of the mental life and behaviour of children are welcomed. Papers need to clearly draw out the clinical implications for mental health practitioners. Papers are published in English. As an international journal, submissions are welcomed from any country. Contributions should be of a standard that merits presentation before an international readership. Papers may assume any of the following forms: Original Articles; Review Articles; Innovations in Practice; Narrative Matters; Debate Articles.

Original Articles: Original Articles make an original contribution to empirical knowledge, to the theoretical understanding of the subject, or to the development of clinical research and practice.

Review Articles: These papers offer a critical perspective on a key body of current research relevant to child and adolescent mental health. The journal requires the pre-registration of review protocols on publicly accessible platforms (e.g. The International Prospective Register of Systematic Reviews, or PROSPERO).

2. Submission of a paper to Child and Adolescent Mental Health will be held to imply that it represents an original submission, not previously published; that it is not being considered for publication elsewhere; and that if accepted for publication it will not be published elsewhere without the consent of the Editors.

3. Manuscripts should be submitted online. For detailed instructions please go to: http://mc.manuscriptcentral.com/camh_journal and check for existing account if you have submitted to or reviewed for the journal before, or have forgotten your details. If you are new to the journal create a new account. Help with submitting online can be obtained from the Editorial Office at ACAMH (email: publications@acamh.org)

4. Authors' professional and ethical responsibilities

Disclosure of interest form

All authors will be asked to download and sign a full Disclosure of Interests form and acknowledge this and sources of funding in the manuscript.

5. Manuscripts should be double spaced and conform to the house style of CAMH. The title page of the manuscript should include the title, name(s) and address(es) of author(s), an abbreviated title (running head) of up to 80 characters, a correspondence address for the paper, and any ethical information relevant to the study (name of the authority, data and reference number for approval) or a statement explaining why their study did not require ethical approval.

Summary: Authors should include a structured Abstract not exceeding 250 words under the sub-headings: Background; Method; Results; Conclusions.

Key Practitioner Message: Below the Abstract, please provide 1-2 bullet points answering each of the following questions:

- What is known? - What is the relevant background knowledge base to your study? This may also include areas of uncertainty or ignorance.
- What is new? - What does your study tell us that we didn't already know or is novel regarding its design?
- What is significant for clinical practice? - Based on your findings, what should practitioners do differently or, if your study is of a preliminary nature, why should more research be devoted to this particular study?

Keywords: Please provide 4-6 keywords use MeSH Browser for suggestions

6. Papers submitted should be concise and written in English in a readily understandable style, avoiding sexist and racist language. Articles should adhere to journal guidelines and include a word count of their paper; occasionally, longer article may be accepted after negotiation with the Editors.

7. Authors who do not have English as a first language may choose to have their manuscript professionally edited prior to submission; a list of independent suppliers of editing services can be found at http://authorservices.wiley.com/bauthor/english_language.asp. All services are paid for and arranged by the author, and use of one of these services does not guarantee acceptance or preference for publication.

8. Headings: Original articles should be set out in the conventional format: Methods, Results, Discussion and Conclusion. Descriptions of techniques and

methods should only be given in detail when they are unfamiliar. There should be no more than three (clearly marked) levels of subheadings used in the text.

9. All manuscripts should have an Acknowledgement section at the end of the main text, before the References. This should include statements on the following:

Study funding: Please provide information on any external or grant funding of the work (or for any of the authors); where there is no external funding, please state this explicitly.

Contributorships: Please state any elements of authorship for which particular authors are responsible, where contributorships differ between author group. (All authors must share responsibility for the final version of the work submitted and published; if the study include original data, at least one author must confirm that he or she had full access to all the data in the study and takes responsibility for the integrity of the data in the study and the accuracy of the data analysis). Contributions from others outside the author group should also be acknowledged (e.g. study assistance or statistical advice) and collaborators and study participants may also be thanked.

Conflicts of interest: Please disclose any conflicts of interest of potential relevance to the work reported for each of the authors. If no conflicts of interest exist, please include an explicit declaration of the form: "The author(s) have declared that they have no competing or potential conflicts of interest".

10. For referencing, CAMH follows a slightly adapted version of APA Style http:www.apastyle.org/. References in running text should be quoted showing author(s) and date. For up to three authors, all surnames should be given on first citation; for subsequent citations or where there are more than three authors, 'et al.' should be used. A full reference list should be given at the end of the article, in alphabetical order.

References to journal articles should include the authors' surnames and initials, the year of publication, the full title of the paper, the full name of the journal, the volume number, and inclusive page numbers. Titles of journals must not be abbreviated. References to chapters in books should include authors' surnames and initials, year of publication, full chapter title, editors' initials and surnames, full book title, page numbers, place of publication and publisher.

11. Tables: These should be kept to a minimum and not duplicate what is in the text; they should be clearly set out and numbered and should appear at the end of the main text, with their intended position clearly indicated in the manuscript.

12. Figures: Any figures, charts or diagrams should be originated in a drawing package and saved within the Word file or as an EPS or TIFF file. See http://authorservices.wiley.com/bauthor/illustration.asp for further guidelines on preparing and submitting artwork. Titles or captions should be clear and easy to read. These should appear at the end of the main text.

13. Footnotes should be avoided, but end notes may be used on a limited basis.

Original Articles

Original Articles make an original contribution to empirical knowledge, to the theoretical understanding of the subject, or to the development of clinical research and practice. Adult data is not usually accepted for publication unless it bears directly on developmental issues in childhood and adolescence.

Your Original Article should be no more than 5,500 words including tables, figures and references.

Review Articles

Research Articles offer our readers a critical perspective on a key body of current research relevant to child and adolescent mental health and maintain high standards of scientific practice by conforming to systematic guidelines as set out in the PRISMA statement. These articles should aim to inform readers of any important or controversial issues/findings, as well as the relevant conceptual and theoretical models, and provide them with sufficient information to evaluate the principal arguments involved. All review articles should also make clear the relevancy of the research covered, and any findings, for clinical practice.

Your Review Article should be no more than 8,000 words excluding tables, figures and references and no more than 10,000 including tables, figures and references.

Appendix E. Empirical Paper Quality Assessment

Adapted from Hoppen & Morina (2020) and Cuijpers et al. (2010)

Q1. Participants PTSD symptomology assessed with a personal assessment interview

Q2. Use of a treatment manual – published or designed for the study

Q3. Therapists specifically trained for the given therapy, or only included trained therapists with substantial prior experience

Q4. Treatment integrity was checked (i.e. regular supervision and/or independent, systematic, quantitative analysis of protocol adherence measures)

Q5. Intent-to-treat analysis

Q6. Independent and random allocation

Q7. Blind outcome assessments

Q8. Presentation of CONSORT

Q9. Dropout clearly defined

Q10. Details about the stage or reasons for dropout

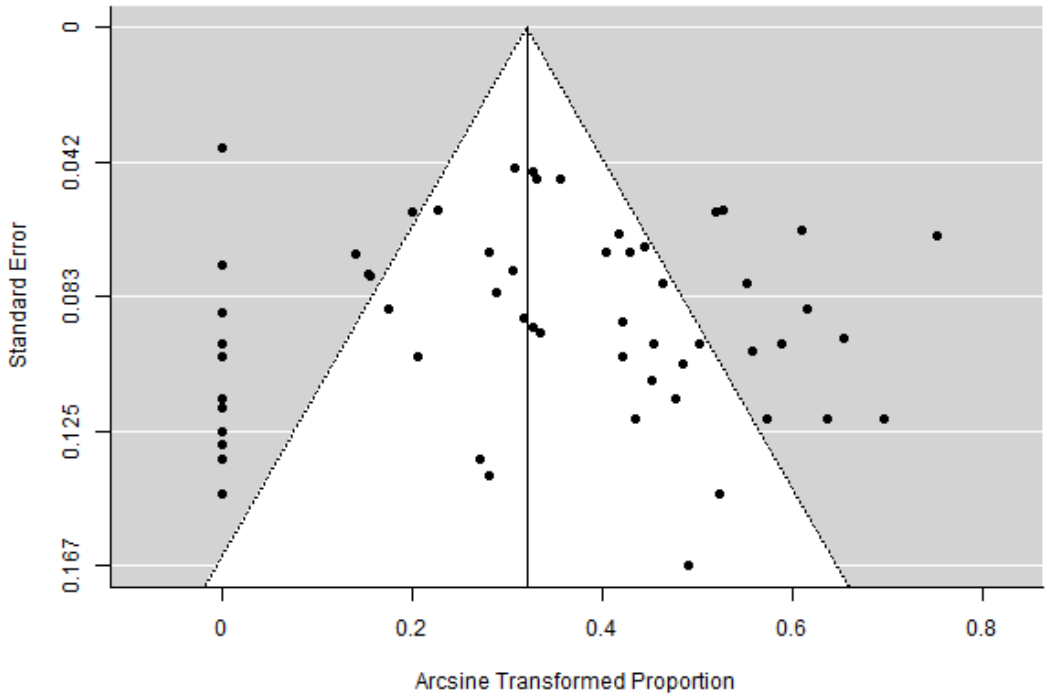
Appendix F. Empirical Paper Quality Assessment Scores

Study	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Total score
Ahmad et al.2007	1	1	0	0	1	0	1	1	1	1	8
Ahrens & Rexford 2002	1	1	1	0	0	0	1	0	0	1	5
Barron et al.2016	0	1	1	1	1	1	1	1	0	1	8
Catani et al.2009	1	1	1	1	1	1	1	1	0	1	9
Cohen et al2004	1	1	1	1	0	0	1	1	1	1	8
Cohen et al2011	1	1	1	1	1	1	1	1	1	0	9
Dawson et al.2018	1	0	1	0	1	1	1	1	1	1	7
de Roos et al.2011	0	1	1	1	1	1	1	1	1	1	9
de Roos et al.2017	1	1	1	1	1	1	1	1	1	1	10
Deblinger et al.2011	1	1	0	1	1	1	1	1	1	1	9
Diehle et al.2015	1	1	1	1	1	1	1	1	1	1	10
Ertl et al.2011	1	1	1	1	1	0	1	1	1	1	9

Foa et al.2013	1	1	1	1	1	1	1	1	1	0	9
Ford et al.2012	1	1	1	1	1	1	0	1	1	1	9
Gilboa-Schechtman et al.2010	1	1	1	1	1	1	1	1	0	1	9
Goldbeck et al.2016	1	1	1	1	1	1	1	1	1	1	10
Jaberghaderi et al.2004	0	1	1	1	0	0	1	0	1	1	6
Jaberghaderi et al.2019	0	1	1	0	1	0	1	1	1	1	7
Jensen et al.2014	1	1	1	1	1	1	1	1	1	0	9
Kemp et al2009	1	1	1	1	0	0	0	0	0	0	4
King et al.2000	1	1	1	1	1	0	0	0	0	1	6
McMullen et al.2013	1	1	1	1	0	1	1	1	0	1	8
Meiser-Stedman et al.2017	1	1	1	1	1	0	1	1	0	1	8
Murray et al.2015	1	1	1	1	1	1	1	1	0	1	9
Nixon et al.2011	1	1	1	1	1	1	1	1	0	1	9
O'Callaghan et al.2013	0	1	1	1	1	1	1	1	0	1	8

O'Callaghan et al.2015	1	1	1	1	1	1	1	1	0	1	9
Peltonen & Kangaslampi 2019	0	1	1	1	1	1	0	1	1	1	7
Pityaratstian et al.2014	1	1	1	0	0	0	1	1	0	1	6
Robjant et al.2019	1	1	1	1	0	1	1	1	0	1	8
Rosner et al.2019	1	1	1	1	1	1	1	1	0	1	9
Ruf et al.2010	1	1	1	0	1	0	1	1	0	1	7
Salloum and Overstreet 2012	0	1	1	1	1	1	1	1	0	1	8
Santiago et al.2014	0	1	1	0	1	1	0	0	0	1	5
Scheeringa et al.2011	1	1	0	1	0	1	0	1	0	0	5
Schottelkorb et al2012	1	1	1	1	0	1	0	0	0	0	5
Shein-Szydlo et al.2016	1	1	1	1	0	1	1	1	0	1	8
Smith et al.2007	1	1	1	1	1	1	1	1	0	1	9
Stein et al.2003	0	1	1	1	0	1	1	1	0	0	6
Tol et al.2008	1	1	1	1	1	1	0	1	0	1	8

Appendix G. Funnel Plot of Proportions Meta-Analysis for All Active Arms



Appendix H. PRISMA Checklist for Systematic Review

Section/topic	#	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	13
ABSTRACT			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	14
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	15
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	15
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	N/A
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	16
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	15
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	15-16
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	16

Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	16
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	16
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	17-18
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	18
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis.	18

Section/topic	#	Checklist item	Reported on page #
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	18
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	N/A
RESULTS			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	17
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	19-23
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	25
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	19-23
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	N/A

Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	25
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	N/A
DISCUSSION			
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	25-55
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	62-67
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	55-67
FUNDING			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	N/A

From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097

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Appendix I. PRISMA Checklist for Meta-Analysis

Section/topic	#	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	83
ABSTRACT			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	84
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	86-88
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	88
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	89
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	89-90
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	89-90
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	89
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	90-91

Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	94
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	94
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	93
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	94-95
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis.	94-959

Section/topic	#	Checklist item	Reported on page #
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	93
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	95
RESULTS			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	92
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	96-102
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	106
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	109
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	110-114

Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	106
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	113-114
DISCUSSION			
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	115-118
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	118-121
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	119-121
FUNDING			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	N/A

From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097

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