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Number xx

Child Exposure to Trauma: Comparative Effectiveness of Interventions Addressing Maltreatment

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Statement of Funding and Purpose

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Preface

The Agency for Healthcare Research and Quality (AHRQ) conducts the Effective Health Care Program as part of its mission to organize knowledge and make it available to inform decisions about health care. As part of the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, Congress directed AHRQ to conduct and support research on the comparative outcomes, clinical effectiveness, and appropriateness of pharmaceuticals, devices, and health care services to meet the needs of Medicare, Medicaid, and the Children's Health Insurance Program (CHIP).

AHRQ has an established network of Evidence-based Practice Centers (EPCs) that produce Evidence Reports/Technology Assessments to assist public- and private-sector organizations in their efforts to improve the quality of health care. The EPCs now lend their expertise to the Effective Health Care Program by conducting comparative effectiveness reviews (CERs) of medications, devices, and other relevant interventions, including strategies for how these items and services can best be organized, managed, and delivered.

Systematic reviews are the building blocks underlying evidence-based practice; they focus attention on the strength and limits of evidence from research studies about the effectiveness and safety of a clinical intervention. In the context of developing recommendations for practice, systematic reviews are useful because they define the strengths and limits of the evidence, clarifying whether assertions about the value of the intervention are based on strong evidence from clinical studies. For more information about systematic reviews, see http://www.effectivehealthcare.ahrq.gov/reference/purpose.cfm

AHRQ expects that CERs will be helpful to health plans, providers, purchasers, government programs, and the health care system as a whole. In addition, AHRQ is committed to presenting information in different formats so that consumers who make decisions about their own and their family's health can benefit from the evidence.

Transparency and stakeholder input from are essential to the Effective Health Care Program. Please visit the Web site (http://www.effectivehealthcare.ahrq.gov) to see draft research questions and reports or to join an e-mail list to learn about new program products and opportunities for input. Comparative Effectiveness Reviews will be updated regularly.

We welcome comments on this CER. They may be sent by mail to the Task Order Officer named below at: Agency for Healthcare Research and Quality, 540 Gaither Road, Rockville, MD 20850, or by e-mail to epc@ahrq.hhs.gov.

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The investigators deeply appreciate the considerable support, commitment, and contributions of the EPC team staff at <NAME>. We express our gratitude to the following individuals for their contributions to this project: <NAME, degrees>

Key Informants

Key Informants are the end users of research, including patients and caregivers, practicing clinicians, relevant professional and consumer organizations, purchasers of health care, and others with experience in making health care decisions. Within the EPC program, the Key Informant role is to provide input into identifying the Key Questions for research that will inform health care decisions. The EPC solicits input from Key Informants when developing questions for systematic review or when identifying high priority research gaps and needed new research. Key Informants are not involved in analyzing the evidence or writing the report and have not reviewed the report, except as given the opportunity to do so through the peer or public review mechanism

Key Informants must disclose any financial conflicts of interest greater than $10,000 and any other relevant business or professional conflicts of interest. Because of their role as end-users, individuals are invited to serve as Key Informants and those who present with potential conflicts may be retained. The Task Order Officer and the EPC work to balance, manage, or mitigate any potential conflicts of interest identified.

Key Informants

To be completed after peer review.

Technical Expert Panel

Technical Experts comprise a multi-disciplinary group of clinical, content, and methodologic experts who provide input in defining populations, interventions, comparisons, or outcomes as well as identifying particular studies or databases to search. They are selected to provide broad expertise and perspectives specific to the topic under development. Divergent and conflicted opinions are common and perceived as health scientific discourse that results in a thoughtful, relevant systematic review. Therefore study questions, design and/or methodological approaches do not necessarily represent the views of individual technical and content experts. Technical Experts provide information to the EPC to identify literature search strategies and recommend approaches to specific issues as requested by the EPC. Technical Experts do not do analysis of any kind nor contribute to the writing of the report and have not reviewed the report, except as given the opportunity to do so through the peer or public review mechanism

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Technical Expert Panel

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Peer Reviewers are invited to provide written comments on the draft report based on their clinical, content, or methodologic expertise. Peer review comments on the preliminary draft of the report are considered by the EPC in preparation of the final draft of the report. Peer Reviewers do not participate in writing or editing of the final report or other products. The synthesis of the scientific literature presented in the final report does not necessarily represent the views of individual reviewers. The dispositions of the peer review comments are documented and will, for CERs and Technical briefs, be published three months after the publication of the Evidence report.

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Child Exposure to Trauma: Comparative Effectiveness of Interventions Addressing Maltreatment

Structured Abstract

Objectives: (1) To compare the effectiveness of interventions (psychosocial and pharmacological) in addressing the negative sequelae of child maltreatment among children birth to 14 year of age. We examined child well-being outcomes including mental and behavioral health and the quality of the caregiver-child relationship (Key Question [KQ] 1), the child welfare outcomes of safety, placement stability, and positive permanency outcomes (KQ 2), and treatment engagement/retention (KQ5); (2) to compare interventions for differential outcomes according to treatment characteristics (KQ3), population subgroups (KQ4); and adverse events (KQ6).

Data Sources: MEDLINE, PyschInfo, Social Science Citation Index, and the Cochrane Library. Additional studies were identified from reference lists and technical experts.

Review Methods: Two trained reviewers independently selected, extracted data from, and rated the risk of bias of relevant trials and systematic reviews. We report results solely from comparisons of interventions with an active or inactive control group. Quantitative analysis was not appropriate (e.g., due to heterogeneity, insufficient numbers of similar studies, or variation in outcome reporting), thus we synthesized the data qualitatively. We synthesized results for KQ 1 and KQ 2 by intervention type, by intervention characteristics for KQ3, and by population subgroups for KQ 4. We identified only one eligible study for KQ 5 and none for KQ6.

Results: We found a total of 25 trials and 1 cohort study of either medium or low risk of bias from our review of 5,838 unduplicated abstracts. Although pharmacotherapy was included in our definition of interventions for this review, we did not identify any eligible studies for inclusion. Although the evidence was insufficient to judge the effectiveness of numerous interventions, evidence from multiple trials supports the effectiveness of Attachment and Biobehavioral Catch-up and Trauma-Focused Cognitive Behavioral Therapy for improving child well-being. Multidimensional Treatment Foster Care for Preschoolers and the Bucharest Early Intervention Project, both highly individualized and multimodal foster care interventions, also provided evidence for child well-being. Parent-Child Interaction Therapy adapted for abusive parents and supplemented with a motivational intervention orientation improved safety outcomes. Multidimensional Treatment Foster Care for Preschoolers and Keeping Foster and Kinship Parents Trained and Supported improved permanency outcomes. Stratified analyses yielded additional guidance for selecting interventions based on population subgroup (e.g., child age, type of maltreatment, caregiving context). Despite the paucity of studies on treatment engagement and retention, we found moderate strength of evidence for a motivational intervention in improving parent engagement and treatment completion for Parent-Child Interaction Therapy.

Conclusions: We identified several promising approaches for improving child well-being and child welfare outcomes for maltreated children. Our central finding is the urgent need to expand the evidence base to guide clinicians and policymakers in meeting the needs of this extremely vulnerable population.

Contents

Executive Summary ES-1

Introduction 1
Background 1
Definitions 1
Incidence and Prevalence 2
Etiology 3
Disease Burden 5
Intervention Strategies 6
Parenting Interventions 6
Trauma-Focused Treatments 8
Enhanced Foster Care Interventions 10
Scope and Key Questions 11
Scope of this Review 11
Need for Comparative Effectiveness of Interventions for Maltreated Children 13
Key Questions 13
Analytic Framework 14
Organization of this Report 15
Methods 17
Topic Refinement and Protocol Review 17
Literature Search Strategy 17
Search Strategy 17
Inclusion and Exclusion Criteria 18
Population 19
Intervention 20
Comparators 21
Outcomes 21
Timing 23
Setting 23
Study Designs 23
Study Selection 23
Data Extraction 24
Risk of Bias Assessment 24
Data Synthesis 24
Strength of the Body of Evidence 25
Applicability 26
Peer Review and Public Commentary 27
Results 29
Introduction 29
Results of the Literature Searches 29
Overall Description of Studies 31
Key Question 1: Comparative Effectiveness of Interventions for Improving Child Well-Being Outcomes 31
Organization 31
Description of Included Studies 32
Key Points: Parenting Interventions 33
Detailed Synthesis: Parenting Interventions 37

Key Points: Trauma-Focused Treatments 54
Detailed Synthesis: Trauma-Focused Treatments 58
Key Points: Enhanced Foster Care Interventions 69
Detailed Synthesis: Enhanced Foster Care Interventions 72
Key Question 2. Comparative Effectiveness of Interventions for Improving Child Welfare Outcomes 80
Organization 80
Description of Included Studies 80
Key Points: Parenting Interventions 81
Overview: 81
Detailed Synthesis: Parenting Interventions 84
Key Points: Enhanced Foster Care Interventions 89
Overview: 89
Detailed Synthesis: Enhanced Foster Care Interventions 89
Multidimensional Treatment Foster Care for Preschoolers 89
Key Question 3. Comparative Effectiveness of Interventions with Different Characteristics 95
Key Question 4. Comparison of Intervention Effectiveness for Improving Child Well-Being or Child Welfare Outcomes in Population Subgroups 101
Organization 101
Description of Included Studies 101
KQ4a. Child Welfare and Child Well-Being Outcomes in Child Subgroups 103
KQ4b. Child Welfare and Child Well-Being Outcomes in Caregiver Subgroups 115
Key Question 5. Comparative Effectiveness of Interventions with Children Exposed to Maltreatment for Engaging Children and/or Caregivers in Treatment 121
Organization 121
Description of Included Studies 121
Key Points: Motivational Intervention 121
Detailed Synthesis, Motivational Intervention Orientation 123
Key Question 6. Adverse Events Associated with Interventions for Children Exposed to Maltreatment 124
Discussion 125
Key Findings and Strength of Evidence 125
Overview 125
Key Question 1: Comparative Effectiveness of Interventions for Improving Child Well-Being Outcomes 126
Key Question 2. Comparative Effectiveness of Interventions for Improving Child Welfare Outcomes 132
Key Question 3. Comparative Effectiveness of Interventions with Different Characteristics 133
Key Question 4. Comparison of Intervention Effectiveness for Improving Child Well-Being or Child Welfare Outcomes in Population Subgroups 135
Key Question 5. Comparative Effectiveness of Interventions with Children Exposed to Maltreatment for Engaging Children and/or Caregivers in Treatment 140
Key Question 6. Adverse Events Associated with Interventions for Children Exposed to Maltreatment 140
Findings in Relationship to What is Already Known 140
Applicability 142
Population 142
Intervention 143
Comparators 143
Outcomes 143
Setting 144

Implications for Clinical and Policy Decision Making 144
Limitations of the Comparative Effectiveness Review Process..... 146
Limitations of the Evidence Base 147
Research Gaps..... 150
Methodological Considerations 150
Substantive Gaps..... 151
Conclusions 152
References 153

Tables

Table A. Inclusion and exclusion criteria ES-4
Table B. Summary of results for child well-being and child welfare (KQ1 and KQ2) outcomes ES-9
Table C. Summary of results for child and caregiver population subgroups ES-17

Table 1. Parenting interventions: Key features 7
Table 2. Trauma-focused treatments: Key features..... 9
Table 3. Enhanced foster care interventions: Key features..... 10
Table 4. Inclusion and exclusion criteria 18
Table 5. Included measures..... 22
Table 6. Study inclusion criteria 23
Table 7. Intervention A versus usual care, results (sample table) 25
Table 8. Definitions of the grades of overall strength of evidence..... 26
Table 9. Numbers of trials and articles investigating child well-being outcomes by intervention type 32
Table 10. Parenting interventions: Strength of evidence for child well-being outcomes 34
Table 11. Attachment and Biobehavioral Catch-up: Study characteristics..... 38
Table 12. Results: Attachment and Biobehavioral Catch-up versus active control..... 39
Table 13. Results: Attachment and Biobehavioral Catch-up versus wait list 40
Table 14. Attachment-based Intervention: Study characteristics 40
Table 15. Results: Attachment-based Intervention versus usual care 41
Table 16. Child-Parent Psychotherapy: Study characteristics..... 42
Table 17. Results: Child-Parent Psychotherapy versus active control versus usual care 43
Table 18. Incredible Years: Study characteristics 44
Table 19. Results: Incredible Years versus wait list..... 45
Table 20. Results: Incredible Years Adaptation versus usual care..... 47
Table 21. Keeping Foster and Kinship Parents Trained and Supported: Study characteristics 49
Table 22. Results: Keeping Foster and Kinship Parents Trained and Supported versus usual care..... 49
Table 23. Multifamily Group Therapy: Study characteristics..... 50
Table 24. Results: Multifamily Group Therapy versus family therapy 50
Table 25. Results: Multifamily Group Therapy versus family therapy 51
Table 26. Nurse Home Visitation Intervention: Study characteristics 52
Table 27. Results: Nurse Home Visitation Intervention versus usual care..... 52
Table 28. Results: Nurse Home Visitation Intervention versus usual care..... 53
Table 29. Project Support: Study characteristics..... 53
Table 30. Results: Project Support versus usual care 54
Table 31. Trauma-focused treatments: Strength of evidence for child well-being outcomes..... 55
Table 32. Combined Parent-Child Cognitive Behavioral Therapy: Study characteristics..... 58
Table 33. Results: Combined Parent-Child Cognitive Behavioral Therapy versus active control..... 59
Table 34. Eye Movement Desensitization and Reprocessing: Study characteristics..... 60
Table 35. Results: Eye Movement Desensitization and Reprocessing versus active control 61
Table 36. Fostering Healthy Futures: Study characteristics..... 62

Table 37. Results: Fostering Healthy Futures versus inactive control 62
Table 38. Results: Fostering Healthy Futures versus inactive control 63
Table 39. Group Psychotherapy: Study characteristics 63
Table 40. Results: Group Psychotherapy versus Individual Psychotherapy 64
Table 41. Play Therapy: Study characteristics 65
Table 42. Results: Play therapy 65
Table 43. Trauma-Focused Cognitive Behavioral Therapy: Study characteristics 66
Table 44. Results: Trauma-Focused Cognitive Behavioral Therapy versus active control 67
Table 45. Results: Trauma-Focused Group Adaptation versus active control 70
Table 46. Enhanced Foster Care Interventions: strength of evidence for child well-being outcomes 71
Table 47. Bucharest Early Intervention Project vs. institutional care: Study characteristics 73
Table 48. Results: Bucharest Early Intervention Project versus institutional care in Romania 74
Table 49. Multidimensional Treatment Foster Care for Preschoolers versus usual care: Study characteristics 77
Table 50. Results: Multidimensional Treatment Foster Care for Preschoolers versus usual care 78
Table 51. Number of trials and articles investigating child welfare outcomes by intervention type 81
Table 52. Parenting Interventions: Strength of evidence for child welfare outcomes 82
Table 53. Keeping Foster and Kinship Parents Trained and Supported: Study characteristics 84
Table 54. Results: Keeping Foster and Kinship Parents Trained and Supported versus usual care 85
Table 55. Nurse Home Visitation Intervention: Study characteristics 85
Table 56. Results: Nurse Home Visitation Intervention versus usual care 86
Table 57. PCIT-AP variants versus usual care: Study characteristics 87
Table 58. Results: PCIT-AP variants versus usual care variants 87
Table 59. Project support: Study characteristics 88
Table 60. Results: Project Support versus usual care 88
Table 61. Enhanced Foster Care Interventions: Strength of evidence for child welfare outcomes 90
Table 62. Multidimensional Treatment Foster Care for Preschoolers: study characteristics 91
Table 63. Results: Multidimensional Treatment Foster Care for Preschoolers versus usual care 92
Table 64. New Orleans Intervention: Study characteristics 93
Table 65. Results: New Orleans Intervention versus comparison groups 94
Table 66. Results: New Orleans Intervention versus comparison groups 95
Table 67. Numbers of trials and articles comparing the effectiveness of interventions with different characteristics 96
Table 68. Modality: Strength of evidence for KQ1 outcomes 98
Table 69. Theoretical Orientations: strength of evidence for KQ1 outcomes 100
Table 70. Non Duplicative Number of Intervention Trials addressing KQ 4 child subgroup outcomes 102
Table 71. Strength of evidence summary table: Early childhood (ages 0 to 5) 106
Table 72. Strength of evidence summary table: Early adolescence (ages 11 to 14) 109
Table 73. Strength of evidence summary table: Sex (girls) 109
Table 74. Strength of evidence summary table: Type of maltreatment type (neglect) 110
Table 75. Strength of evidence summary table: Type of maltreatment type (physical abuse) 111
Table 76. Strength of evidence summary table: Type of maltreatment type (sexual abuse) 112
Table 77. Strength of evidence summary table: Mental or behavioral health problems 113
Table 78. Strength of evidence summary table: Maltreating parents 117
Table 79. Strength of evidence summary table: foster and kinship parents 119
Table 80. Numbers of trials and articles investigating treatment engagement or retention 121
Table 81. Motivational intervention orientation: Strength of evidence for treatment engagement and retention outcomes 122
Table 82. Motivational Intervention: Study characteristics 123

Table 83. Results: Motivational intervention orientation 124
Table 84. Summary of results for child well-being and child welfare (KQ1 and KQ2) outcomes 127
Table 84. Summary of results for child well-being and child welfare (KQ1 and KQ2) outcomes (continued) 128
Table 84. Summary of results for child well-being and child welfare (KQ1 and KQ2) outcomes (continued) 129
Table 84. Summary of results for child well-being and child welfare (KQ1 and KQ2) outcomes (continued) 130
Table 85. Summary of results for the comparative effectiveness of interventions with different intervention characteristics 134
Table 86. Summary of results for child and caregiver population subgroups 136
Table 87. Summary of results for treatment engagement and retention 141

Figures

Figure A. Analytic Framework ES-3
Figure B. Disposition of articles (PRISMA figure) ES-7

Figure 1. Analytic framework for comparative effectiveness of interventions for child maltreatment 15
Figure 2. Results of Literature Searches on Interventions for Child Maltreatment 30

Appendixes

Appendix A. Literature Search Strategy
Appendix B. Full Text Review Form
Appendix C. Full Text Excludes
Appendix D. Risk of Bias Tables
Appendix E. Evidence Tables
Appendix F. Detailed Strength of Evidence Tables

Executive Summary

Background

Exposure to abuse and/or neglect in childhood has serious adverse consequences across the lifespan, including increased risk of emotional and behavioral disturbances, delinquency and violent crime, and chronic disease.[1-7] Maltreatment represents severe ongoing dysfunction in the caregiver-child relationship, causing prolonged intensive levels of stress that can overwhelm the child's capacity to cope.[8-10] For children who are removed from the home and placed in out-of-home care, separation from and loss of the primary caregiver exerts its own toxic effects that compound the original insult of the abuse or neglect. The unrelenting chronic stress associated with severe and repeated abuse and neglect has been shown to trigger a cascade of maladaptive physiological and psychological responses, propelling the child along a trajectory of accumulating problems that can eventually lead to the wide-ranging and persistent pathologies documented in the scientific literature.[8, 11, 12]

Child maltreatment is a global public health problem.[6, 7] In the United States, approximately 5.9 million children were involved in 3.3 million referrals to child protective services in 2010. Of those cases for whom maltreatment was substantiated, the most prevalent exposure was to neglect (78.3 percent) followed by physical abuse (17.6 percent), and sexual abuse (9 percent).[13] More than one-third (37.2 percent) experienced victimization by their mother acting alone; nearly 18.5 percent were maltreated by both parents.[14] Infants less than 1 year of age are disproportionately affected as they have the highest rate of victimization across all ages (20.6 per 1,000).[13] Approximately one-third of children removed from the home are eventually reunified with their biological, primary caregiver.[15-18] The high prevalence of child maltreatment translates into a significant economic burden to society, cutting across many different service sectors including child welfare, health care, special education, and criminal justice. A recent study estimates that the aggregate lifetime costs of nonfatal and fatal child maltreatment (in 2010 dollars) are $124 billion.

The clinical complexity and heterogeneity of maltreatment is reflected in a diverse field of clinical approaches that can be categorized as parenting interventions, trauma-focused treatments, and enhanced foster care interventions.

Scope and Key Questions

This review provides a critical analysis and synthesis of the comparative efficacy and effectiveness of interventions (psychosocial and pharmacological) for children ages birth to 14 years that address child well-being and/or promote positive child welfare outcomes (safety, placement stability, and permanency). The review also examines (1) how interventions with different characteristics (modality, theoretical orientation, setting) compare in improving child outcomes, (2) how interventions compare in terms of treatment engagement and retention, and (3) adverse events associated with the interventions reviewed. In addition, an overarching goal of this review is to identify gaps in the current scientific literature and highlight important areas for future research to build the evidence base for interventions with maltreated children. We defined inclusion and exclusion criteria for this review using the PICOTS framework (populations, interventions, comparators, outcomes, settings). Although pharmacotherapy was included in our definition of interventions for this review, we did not identify any eligible studies for inclusion.

We elected to exclude intervention studies that focused on primary or secondary prevention. In other words, we excluded studies where maltreatment was not indicated or substantiated or the description of the study population was too vague to make a determination. We excluded adolescents older than 14 years to reduce the heterogeneity of the population, in recognition of how maltreatment and its sequelae evolve across the development continuum. Strategies to improve the system of care for maltreated children and caregivers at the service-delivery or organizational level are also excluded, due to issues of heterogeneity and scope.

Our report is the first of a two-part series on interventions addressing child exposure to trauma. The second review in the series focuses on interventions with children exposed to traumatic events other than maltreatment, including natural disasters, motor vehicle and other accidents, medical trauma, and school and community violence. Originally, this review was to include intervention studies targeting children exposed to domestic violence. However, concerns about clinical heterogeneity that emerged during the review process resulted in our excluding these studies from the current review. Due to timing issues, it was not possible for the second review to include intervention studies targeting children exposed to domestic violence.

Key Questions

This review sought to address the following key questions (KQs):

KQ 1: What is the comparative effectiveness of interventions with children exposed to maltreatment for promoting child well-being? Specifically:

a. Mental and behavioral health
b. Healthy caregiver-child relationship (e.g., secure attachment; increased caregiver responsivity and sensitivity; positive parental attitudes toward childrearing; positive parental perceptions of the child and causal attributions about the child's behavior; decreased negative parent-child interactions; increased family functioning)
c. Healthy development (e.g., cognitive, language, physical maturation)
d. School-based functioning (e.g., grade retention, disciplinary referrals, attendance)

KQ 2: What is the comparative effectiveness of interventions with children exposed to maltreatment for promoting child welfare outcomes? Specifically:

a. Safety (i.e., prevention of maltreatment recurrence)
b. Placement stability
c. Permanency.

KQ 3: Among the interventions under review, how do interventions with particular characteristics compare in improving child outcomes. Intervention characteristics may include:

a. Modality (i.e., individual, dyadic, group, family-based format)
b. Theoretical orientation (e.g., cognitive behavioral, psychodynamic)
c. Type of setting (i.e., specialty or nonspecialty service-delivery settings).

KQ 4: How do interventions compare for improving child outcomes within population subgroups? Population subgroups comprise the following:

a. Child subgroups
    i. Age and other sociodemographic subgroups (e.g., race, ethnicity, sex)
    ii. Type of maltreatment exposure (e.g., neglect, physical abuse, sexual abuse)
    iii. Severity of maltreatment exposure

iv. Presence of mental or behavioral health problems (e.g., complex traumatic stress disorders, serious emotional disturbance) or other special needs (e.g., failure to thrive, prenatal substance exposure).

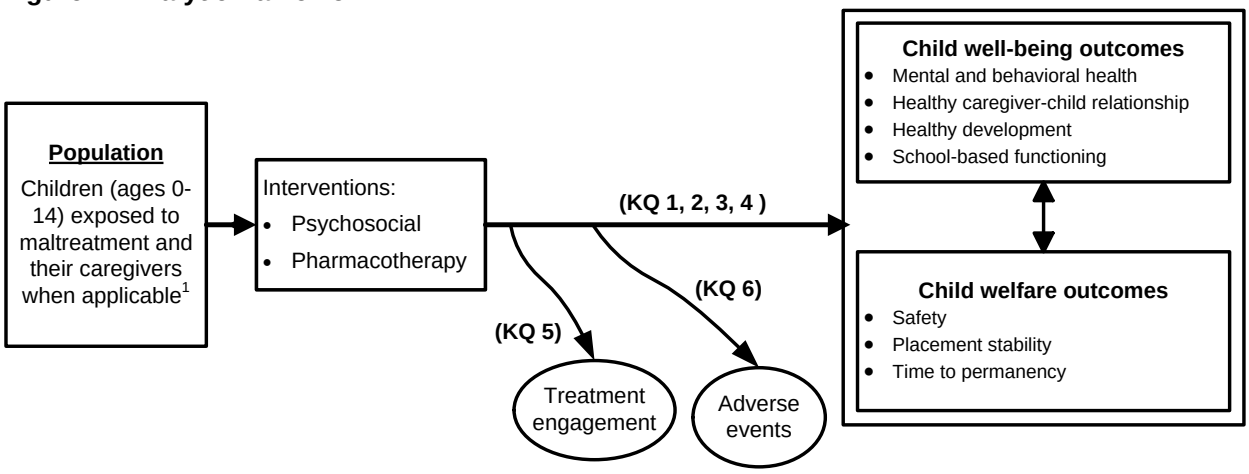
b. Caregiver subgroups
   i. Primary caregiving context: biological parent; foster, kin (relative), or adoptive caregivers; residential program or group home)
   ii. Presence of mental health problems, substance abuse, or domestic violence
   iii. Sociodemographic groups (e.g., age, race, ethnicity, sex).

KQ 5 : What is the comparative effectiveness of interventions with children exposed to maltreatment for engaging children and/or caregivers in treatment (e.g., treatment adherence, treatment withdrawal)?

KQ 6: What adverse events are associated with interventions for children exposed to maltreatment (e.g., retraumatization, caregiver distress)?

The analytic framework we developed to guide the systematic review process is shown in Figure A.

Figure A. Analytic framework



[1]Population may include the child's primary caregiver(s) when the intervention targets the caregiving context.

Methods

Topic Refinement

The topic was nominated in a public process. With key informant input, the EPC worked on clarifying the scope of the project. After we generated an analytic framework, preliminary KQs, and preliminary inclusion/exclusion criteria in the form of PICOTS, our KQs were posted for public comment on AHRQ's Effective Health Care Web site from March 18, 2011, to April 15, 2011. We revised the KQs as needed based on review of the comments and discussion with an 8-member Technical Expert Panel (TEP), primarily for ensuring that the PICOTS aligned with the needs and understanding of the topic by stakeholders in the field. The <NAME> incorporated public comments and guidance from the TEP into a final research protocol, which was posted on the AHRQ Web site on November 15, 2011.

Literature Search and Review Strategy

We systematically searched, reviewed, and analyzed the scientific evidence for each key question. We conducted focused searches of MEDINE (via PubMed), Social Science Citation Index (SSCI), PsycInfo, and the Cochrane Library. An experienced research librarian used a predefined list of search terms and medical subject headings (MeSH). We limited searches to publications from 1990 and later to ensure clinical relevancy. We limited the search to studies published in English. We searched existing evidence-based registries and databases on interventions for children and maltreated children for relevant peer-reviewed articles that the systematic literature search may have missed. We also searched unpublished and grey literature relevant to the review. Methods for identifying grey literature included a review of trial registries, specifically ClinicalTrials.gov, Health Services Research Projects in Progress (http://www.nlm.nih.gov/hsrproj/), and the European Union Clinical Trials Register (https://www.clinicaltrialsregister.eu/). Further, AHRQ requested Scientific Information Packets from the developers and distributors of the interventions identified in the literature review. Scientific Information Packets allow an opportunity for the intervention developers and distributors to provide the EPC with both published and unpublished data that they believe should be considered for the review. Studies from the Scientific Information Packets will be included in the post-peer/public review report. We included unpublished studies that met all inclusion criteria and contained enough information on the research methods used for the risk of bias assessment. Lastly, we searched reference lists of review articles that are pertinent but did not meet inclusion criteria for studies that we should consider for inclusion in this review.

Two trained members of the research team independently reviewed each of the titles and abstracts. For each article that either or both reviewers chose to include based on the abstract review, two reviewers reviewed their full texts for eligibility against our inclusion/exclusion criteria (Table A). During full-text review, if both reviewers agreed that a study did not meet the eligibility criteria, the study was excluded. Reviewers resolved conflicts by discussion and consensus or by consulting a third member of the review team.

Table A. Inclusion and exclusion criteria

Domain	Description
Population	• Children ages 0 to 14 years exposed to child maltreatment (and their caregivers when applicable) For this review, we will use the definition of *maltreatment* provided by the Centers for Disease Control and Prevention:[19] • *Child abuse*: words or overt actions that cause harm, potential harm, or threat of harm to a child • *Child neglect*: failure to provide for a child's basic physical, emotional, or educational needs or to protect a child from harm or potential harm; privation (conditions of sever social deprivation). • The population may include the child's primary caregiver(s) when the intervention targets the caregiving context. The primary caregiver is defined as the biological parent; foster, kinship (relative), or adoptive caregiver; or caregivers in a residential program or group home. • Children in foster care with unspecified maltreatment exposure will be included in this review. When maltreatment exposure is specified in a study population of children in foster care, only those studies in which ≥80% of the sample is exposed will be included. We exclude studies that target children who are known to have been placed in out-of-home care because the child's own behavior or condition posed a threat to their community or was beyond the control of his or her family (e.g., youth referred or mandated by the juvenile justice system to out-of -home placement because of

Table A. Inclusion and exclusion criteria (continued)

Domain	Description
Population (continued)	multiple criminal offenses and children with serious emotional disturbance and no involvement with the child welfare system). • Child subgroups are defined by age, type of maltreatment exposure, severity of maltreatment exposure; presence of child behavioral and mental health problems; and sociodemographic groups (race, ethnicity, and sex). Caregiver subgroups are defined as caregiving context (i.e., primary caregiver/environment, presence of caregiver substance abuse or other mental health disorders, caregiver sociodemographic characteristics [age, race, ethnicity, and sex]).
Interventions	• Clinical interventions that aim to prevent, ameliorate, or improve mental health symptoms, behavior problems, or psychopathology; optimize child development and functioning; and/or improve child welfare outcomes. • Psychosocial interventions delivered at the individual, caregiver, and/or family level (including Trauma-Focused Cognitive-Behavioral Therapy, Parent-Child Interaction Therapy, Attachment and Biobehavioral Catch-up [ABC], Child-Parent Psychotherapy, the Incredible Years); • General and specific types of pharmacotherapy (e.g., selective serotonin reuptake inhibitors [SSRIs]). • Strategies or approaches to improve the system of care for maltreated children and caregivers at the service-delivery or organizational level are excluded. Examples include intensive family preservation or reunification service models, solution-focused/based casework, differential response, and routine preservice foster parent training programs.
Comparator	• The comparison condition as defined in the respective studies. Active controls are comparison groups that receive another structured intervention. Inactive controls are comparison groups that do not receive another structured intervention and include wait-list groups and usual care groups.
Outcomes	**Child well-being outcomes** • Child mental and behavioral health—e.g., prevention of or reduction in severity or number of traumatic stress symptoms or syndromes; post-traumatic stress disorder; attachment disorders; depressive symptoms; anxiety symptoms; disruptive, aggressive, and delinquent behavior; • Healthy caregiver-child relationship—e.g., secure attachment; increased caregiver responsiveness to the child and sensitivity; positive attitudes towards childrearing; positive perceptions of the child and causal attributions about the child's behavior; decreased negative parent-child interactions; increased family functioning; • Healthy development—e.g., cognitive, language, and physical; • School-based functioning. (e.g., grade retention, disciplinary referrals, attendance) **Child welfare outcomes** • Safety—e.g., prevention of maltreatment recurrence or reduced number of subsequent involvements with child protective services; • Placement stability for children in foster care; • Positive permanency outcomes for children in foster care. **Treatment engagement and adherence** • Readiness or motivation to engage in an intervention; • Treatment completion. **Adverse events** • Retraumatization • Caregiver distress
Timing	• Short-term duration: postintervention (i.e., at treatment completion) to <6 months; • Long-term duration: ≥6 months after treatment completion.

For studies that met our inclusion criteria, a trained reviewer abstracted information into structured evidence tables; a second senior member of the team reviewed all data abstractions for completeness and accuracy. Reviewers resolved conflicts by discussion and consensus or by consulting a third member of the review team.

Risk of Bias Assessment

Two independent reviewers assessed risk of bias (internal validity) for each study using predefined criteria based on those developed by AHRQ and specified in the RTI Item Bank. For each included study, we assessed the potential for selection bias, performance bias, attrition bias, detection bias, and reporting bias. We resolved disagreements between the two reviewers by consulting an experienced member of the team.

Data Synthesis

We report results from direct comparisons of different interventions. Quantitative analysis was not appropriate (e.g., due to heterogeneity, insufficient numbers of similar studies, or insufficiency or variation in outcome reporting), thus we synthesized the data qualitatively. We report magnitude of effect data provided by authors in the studies reviewed. We did not perform additional effect size calculations with the exception of one study that provided the effect size without the significance level. We did not attempt indirect comparisons, given the heterogeneity of usual care comparators. KQ 1 and KQ 2 present results categorized by intervention type. KQ 3 presents results categorized by intervention characteristics, and KQ 4 presents results by population subgroups. We identified only one eligible study for KQ 5 and no eligible studies were identified for KQ6.

Strength of Evidence Grading

We graded the strength of evidence for child well-being outcomes for KQ 1, child welfare outcomes for KQ 2, for interventions with different characteristics for KQ 3, for vulnerable subpopulations (KQ 4), and for adverse events (KQ 5) based on the guidance established for the EPC program.[20] This approach incorporates four key domains: risk of bias (including study design and aggregate quality), consistency, directness, and precision of the evidence. We use the strength of evidence grades defined by Owens and colleagues[20] as follows.

- **High—High confidence that the evidence reflects the true effect.** Further research is very unlikely to change our confidence in the estimate of effect.
- **Moderate—Moderate confidence that the evidence reflects the true effect.** Further research may change our confidence in the estimate of the effect and may change the estimate.
- **Low—Low confidence that the evidence reflects the true effect.** Further research is likely to change our confidence in the estimate of the effect and is likely to change the estimate.
- **Insufficient— Evidence either is unavailable or does not permit estimation of an effect.**

Applicability

We assessed the applicability of the evidence following guidance from Atkins and colleagues.[21] We used the PICOTS framework to explore factors that affect or limit applicability.

Results

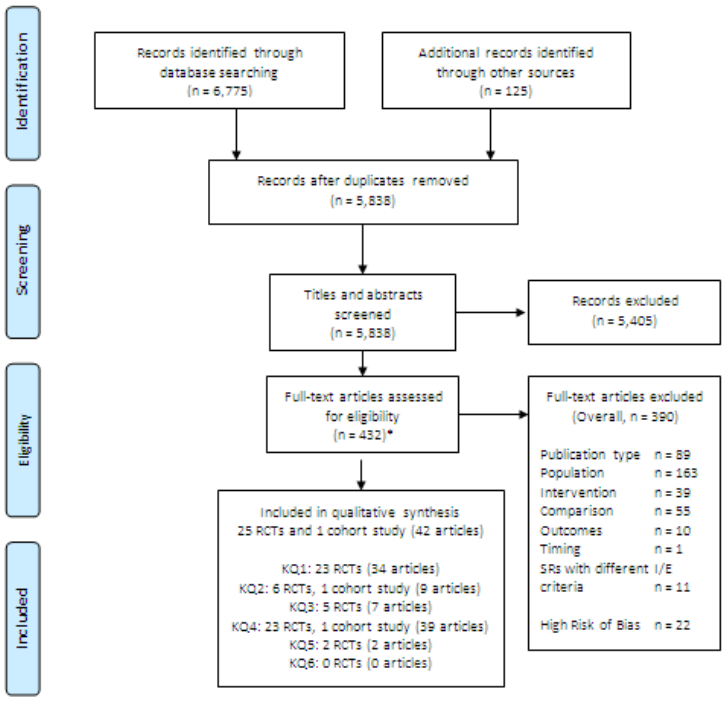
We provide a summary of results by key question. KQs 1 and 2 synthesize the evidence by type of intervention. KQ 3 synthesizes the evidence by intervention characteristics, and KQ 4

synthesizes the evidence for child and caregiver population subgroups. KQ 5 summarizes the evidence of the one trial that was identified addressing treatment engagement and retention. We identified no eligible studies for KQ 6. Detailed descriptions of included studies, key points, detailed synthesis, summary tables, and expanded strength of evidence tables that include the magnitude of effect can be found in the full report. Our summary of results below presents the strength of evidence grades.

Results of Literature Searches

Figure B presents our literature search results. Literature searches through September 29, 2011, for the current report identified 5,838 unduplicated citations. We excluded 5,405 at the title and abstract review stage. For the 432 articles reviewed at the full-text stage, we eliminated 390 for a variety of reasons. We recorded the reason for excluding full-text publications and provide a table of all excluded studies, organized by reason for exclusion. The most common reasons for exclusion at the full text level were (1) if the study's focus was on children at-risk for maltreatment, or a mixed population of children/families at-risk of exposure/perpetration of abuse or neglect combined with children/families wherein the maltreatment had already occurred (wrong population), (2) systems- or service-delivery level approaches (wrong intervention), or (3) a lack of a comparison group (wrong comparison). After assessing risk of bias for all included studies (before data abstraction), we eliminated studies that we rated high risk of bias. This left a total of 26 studies, reported in 42 articles, which were assessed as either medium or low risk of bias. We found no articles for KQ 6 on adverse events.

Figure B. Disposition of articles (PRISMA figure)



Note: We were unable to retrieve one full text article.

Key Findings and Strength of Evidence

KQ 1: Comparative Effectiveness of Interventions for Improving Child Well-Being Outcomes

The summary of results for KQ 1 and KQ2 is presented in Table B (an overview of findings for KQ2 follows this section). For KQ 1, we examined four sets of outcomes representing key dimensions of child well-being: child mental and behavioral health, the quality of the caregiver-child relationship (e.g., child attachment; caregiver responsivity and sensitivity; positive parental attitudes toward childrearing), children's development (e.g., cognition, language, physical maturation), and school-based functioning (e.g., grade retention, disciplinary referrals, attendance). Only 3 trials reported developmental outcomes, and we identified no studies eligible for inclusion that assessed school-based functioning. Collectively, the body of evidence for interventions that addressed child well-being in maltreated children provided either low strength of evidence or was insufficient to draw conclusions. Of the 23 eligible studies for this KQ, the vast majority provided evidence based solely on one trial, many with very small sample sizes. Among the 12 trials that resulted in statistically significant between-group differences in children's mental and behavioral health outcomes,[22-36] only two interventions were tested in more than one trial (both graded as low strength of evidence): an intervention for foster parents caring for very young children, Attachment and Biobehavioral Catch-up[22-24] and a trauma-focused treatment evaluated with sexually-abused children, Trauma-Focused Cognitive-Behavioral Therapy.[25, 26]

Regarding healthy caregiver-child relationship outcomes, 14 of the 23 trials, representing all 3 types of interventions, resulted in statistically significant between-group differences.[22, 25, 28, 31, 33, 37-47] However, the robustness of these findings is undermined by the indirect nature of much of the evidence, as only three trials assessed child attachment behaviors directly through objective observation.[37-39] Additionally, studies predominantly assessed caregiver behavior changes via parent self-report measures, or subscales of measures, which reflected varying degrees of established validity. This heterogeneity of measurement made it difficult to generalize findings across studies for the caregiver-child relationship outcomes.

The three trials that assessed developmental outcomes[48-50] were all interventions that directly supported children's development. For example, children in Multidimensional Treatment Foster Care for Preschoolers received services from a behavioral specialist working in both preschool/child care and home-based settings.[51]Two of these trials, Multidimensional Treatment Foster Care for Preschoolers and the Bucharest Early Intervention Project, yielded benefits compared with usual care in developmental as well as mental and behavioral health and caregiver-child relationship outcomes.[27, 29, 30, 36, 39-41, 48-50]

We found no eligible studies that assessed school-based functioning. This finding was perhaps attributable to the age range specified for this review (birth to 14 years) but surprising, nonetheless, given the emphasis on school readiness and performance in the educational system in the United States.

Table B. Summary of results for child well-being and child welfare (KQ1 and KQ2) outcomes[a]

Type	Intervention	Comparator	Outcome	Number of Trials, Participants	Strength of Evidence[b] Magnitude of Effect[c]	Study Population
Parenting Interventions	Keeping Foster and Kinship Parents Trained and Supported	Usual care	Mental and behavioral health	1,[28] 700	Low Small (d=0.26)	Early childhood to early adolescence, foster caregiver
			Healthy caregiver-child relationship	1,[28] 700	Low Small (d=0.29)	
			Placement Stability	1,[28] 700	Insufficient	
			Permanency	1,[28] 700	Low	
	Attachment and Biobehavioral Catch-up	Active control[d]	Mental and behavioral health	2,[23,24] 153	Low	Early childhood, foster caregiver
			Healthy caregiver- child relationship	1, [22] 46	Low	
		Wait list	Mental and behavioral health	1,[33] 58	Low Medium (Partial eta squared =0.436 or 0.511)	
			Healthy caregiver-child relationship	1,[33] 58	Low Medium or large (Partial eta squared =0.59 or 0.791)	
	Parent-Child Interaction Therapy(PCIT) Adaptation Package[e]	PCIT Adaptation Package enhanced[f]	Safety	1,[52] 75	Insufficient	Early childhood to early adolescence, maltreating caregiver
		PCIT + standard orientation	Safety	1,[53] 70	Low Hazard Ratio=0.10	
		Usual care + standard orientation	Safety	2,[52,53] 153	Low	
		Usual care + Motivational Intervention	Safety	1,[53] 70	Low Hazard Ratio=0.11	
	Child-Parent Psychotherapy[g]	Active control[d]	Healthy caregiver child relationship	2,[38,47] 159	Insufficient	Early childhood, maltreating parent
		Usual care	Healthy caregiver child relationship	2,[38,47] 141	Low Medium to large (h=0.64 to 1.34)	
	Project Support	Usual care	Healthy caregiver child relationship	1,[43] 35	Low Large (d =0.86 or 1.02)	Early to middle childhood, maltreating parent
			Safety	1,[43] 35	Insufficient	
	Attachment-based Intervention	Usual care	Mental and behavioral health	1,[37] 79	Insufficient	Early childhood, maltreating parent
			Healthy caregiver child relationship	1,[37] 79	Low Small to medium (d=0.47, r=0.36 or 0.37)	

Table B. Summary of results for child well-being and child welfare (KQ1 and KQ2) outcomes[a] (continued)

Type	Intervention	Comparator	Outcome	Number of Trials, Participants	Strength of Evidence[b] Magnitude of Effect[c]	Study Population
Parenting Interventions (continued)	Incredible Years Adaptation	Usual care	Mental and behavioral health	1,[44] 64	Insufficient	Early to middle childhood, maltreating parent and foster caregiver
			Healthy caregiver child relationship	1,[44] 64	Low Small to medium (d =0.40 or 0.59)	
	Multifamily Group Therapy	Active control[h]	Healthy caregiver child relationship	1,[45,46] 78	Low	Early childhood to early adolescence, maltreating parent
	Incredible Years	Wait list[i]	Mental and behavioral health	1,[31] 45	Low Small (Êta=0.18 or 0.21)	Early to middle childhood, maltreating parent
			Healthy caregiver-child relationship	2, [31,42] 75	Low Small to Large (Êta =0.13 to 0.48)	
	Nurse-Home Visitation Intervention	Usual care	Mental and behavioral health	1,[54] 163	Insufficient	Early childhood to early adolescence, maltreating parent
			Healthy caregiver child relationship	1,[54] 163	Insufficient	
			Safety	1,[54] 163	Insufficient	
	PCIT Adaptation Package[e] enhanced[f]	Usual Care	Safety	1,[52] 88	Insufficient	Early childhood to early adolescence, maltreating caregiver

Table B. Summary of results for child well-being and child welfare (KQ1 and KQ2) outcomes[a] (continued)

Type	Intervention	Comparator	Outcome	Number of Trials, Participants	Strength of Evidence[b] Magnitude of Effect[c]	Study Population
Trauma-Focused Treatments	Trauma-Focused Cognitive Behavioral Therapy	Active Control[j]	Mental and behavioral health	2,[25,26] 315	Low Small to Medium (d=0.30 to 0.70)	Early childhood to early adolescence, exposed to sexually abused, any nonmaltreating caregiver
			Healthy caregiver-child relationship	1,[25] 229	Low Small to Medium (d=0.38 or 0.57)	
	Fostering Healthy Futures	Inactive control	Mental and behavioral health	1,[34] 156	Low Small to Medium (d=0.30 to 0.51)	Middle childhood to early adolescence, no caregiver included
	Group Psychotherapy	Individual psychotherapy	Mental and behavioral health	1,[35] 71	Low, G1<G2 Small to medium (d=0.36 to 0.79)	Middle childhood to early adolescence, any caregiver
	Combined Parent-Child Cognitive Behavioral Therapy	Active control[d]	Mental and behavioral health	1,[32] 75	Low Medium (d=0.61)	Middle childhood to early adolescence, exposed to physical abuse, maltreating parents
			Healthy caregiver-child relationship	1,[32] 75	Insufficient	
	Group Psychotherapy	Individual psychotherapy	Mental and behavioral health	1,[35] 71	Low, G1<G2 Small to medium (d=0.36 to 0.79)	Middle childhood to early adolescence, any caregiver
	Trauma-Focused Cognitive Behavioral Therapy Group Adaptation	Active control[h]	Mental and behavioral Health	1,[55] 44	Insufficient	Early to middle childhood, exposed to sexual abuse, any nonmaltreating caregiver
			Healthy caregiver-child relationship	1,[55] 44	Insufficient	
	Play Therapy + Milieu Therapy	Milieu therapy	Mental and behavioral health	1,[56] 41	Insufficient	Early childhood, no caregiver included
			Healthy development	1,[56] 41	Insufficient	
	Eye Movement Desensitization and Reprocessing	Active Control[d]	Mental and behavioral health	1,[57] 14	Insufficient	Early adolescence, no caregiver included

Table B. Summary of results for child well-being and child welfare (KQ1 and KQ2) outcomes[a] (continued)

Type	Intervention	Comparator	Outcome	Number of Trials, Participants	Strength of Evidence[b] Magnitude of Effect[c]	Study Population
Enhanced Foster Care Interventions	Multidimensional Treatment Foster Care for Preschoolers	Usual care	Mental health and behavior	1,[29] 117	Low Medium (d=0.64 to 0.68)	Early to middle childhood, foster parent
			Healthy caregiver-child relationship	1,[40,41] 117	Low	
			Healthy development	1,[50] 23	Low	
			Placement stability	1,[58] 117	Insufficient	
			Permanency	1,[51,59] 90	Low	
	Bucharest Early Intervention Project	Usual care (institutional Care in Romania)	Mental health and behavior	1,[27,30,36] 136	Low Odds Ratio 2.8 [95% CI 1.2 to 6.4]	Institutionalized children, foster caregivers
			Healthy caregiver-child relationship	1,[39]136	Low	
			Healthy development	1,[48,49] 136	Low ES[k] =0.47 or 0.62	
	New Orleans Intervention	Usual care	Safety	1,[60] 255	Low Relative Risk (RR) Reduction=67.9% [RR, 95%CI 0.11 to 0.90] to 74.7% [RR, 95%CI 0.11 to 0.93]	Early childhood, maltreating parent and foster caregiver
			Permanency	1,[60] 240	Low G1 < G2	

[a]We order the results in the summary tables by strength of evidence, taking into consideration the size of the body of evidence (e.g., number of trials and participants), magnitude of effect, and duration of intervention outcomes.

[a]All SOE results are G1>G2 unless noted otherwise.

[c]For estimation of the magnitude of effect, we include only the statistically significant ($p<0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as: Cohen's d = 0.20, 0.50, and 0.80; Cohen's h = 0.20, 0.50, and 0.80; and correlation coefficient r = 0.10, 0.30, and 0.50.[61] When authors use Eta or partial eta squared effect sizes we use the interpretation that the authors provide. We include an effect size range when more than two effect sizes are reported. Authors did not report effect sizes for some measures.

[d]Active comparator is an approach derived from an intervention wherein the degree to which core components of the original model are implemented is unclear and/or core components are omitted or substantively modified.

[e]"Package" refers to the inclusion of a supplemental motivational intervention orientation.

[f]"Enhanced " refers to the provision of individualized services to the parents.

[g]Intervention is a variant of Child Parent Psychotherapy developed by Ciccetti and colleagues.[38, 47]

[h]Active comparator is an approach representative of a conventional practice in the field.

[i]The comparison group for one study was an n < 10 participants.

[j]One comparator is a conventional approach, the other a derived approach.

[k]Effect size measure is not specified, therefore we did not classify the magnitude of effect as small, medium, or large.

Key Question 2. Comparative Effectiveness of Interventions for Improving Child Welfare Outcomes

The summary of results for KQ 2 is presented Table B. The outcomes for KQ 2 pertain to indicators of interest for the child welfare system: safety (i.e., maltreatment recurrence), placement stability, and permanency (e.g., positive permanency arrangements such as reunification with the parent or adoption by the biological parent or another relative). The evidence for child welfare outcomes is sparse compared to the research providing evidence on child well-being outcomes (KQ 1). The paucity of studies may reflect our exclusion of system-level interventions such as intensive family preservation or reunification service models. Of the seven eligible trials reviewed for this key question, five investigated the efficacy of parenting interventions and two examined enhanced foster care interventions for safety, placement stability, or permanency outcomes. Three trials, two pertaining to a single intervention (an adaptation of Parent-Child Interaction Therapy)[52, 53] and one pertaining to an enhanced foster care intervention[60] were not among those included in the results for KQ 1; the other four trials evaluated four interventions reviewed under KQ 1.[43, 51, 54, 58, 59, 62] The studies analyzed for KQ 2 include randomized controlled trials (RCTs) and one non-concurrent cohort study. The included studies target (1) maltreating families to prevent maltreatment recurrence, or (2) foster parents to promote placement stability and positive permanency outcomes.

Both the Keeping Foster and Kinship Parents Trained and Supported parenting intervention and the Multidimensional Treatment Foster Care for Preschoolers enhanced foster care intervention positively affected permanency but not placement outcomes.[51, 58, 59, 62] Interpretation of the findings from these trials is complicated by the fact that the Keeping Foster and Kinship Parents Trained and Supported training program is based on the foster parent training developed for Multidimensional Treatment Foster Care for Preschoolers. Relative to the Multidimensional Treatment Foster Care for Preschoolers intervention, Keeping Foster and Kinship Parents Trained and Supported was intended as a less intensive approach, delivered in group format, which would apply to the spectrum of child welfare involved families. The findings for the Keeping Foster and Kinship Parents Trained and Supported trial, which was based on a large sample size, offers intriguing preliminary evidence that a less intensive foster parent training program may be as efficacious as a more comprehensive approach in promoting positive permanency outcomes.

The New Orleans Intervention, a multimodal approach with adjudicated infants and toddlers in foster care, resulted in significant reductions in the risk of child recidivism and also the risk of maternal recidivism for subsequent children (among mothers whose parental rights were terminated for the index child). This intensive and individualized approach was also found to increase termination of parental rights and decrease reunification between the child and his or her biological caregiver. The study authors suggest that the increased scrutiny afforded by the intensive intervention likely contributed to these permanency outcomes. Ideally, a positive outcome for adjudicated children is reunification with a rehabilitated biological parent wherein the risks to safety and child well-being have been effectively addressed with intervention. However, the termination of parental rights was may have been a de facto protective outcome for the extremely vulnerable population of children in the New Orleans study.

Among the parenting interventions we reviewed, Parent-Child Interaction Therapy adapted for physically abusive parents, in combination with motivational intervention, yielded significant benefit in reducing maltreatment recurrence.[52, 53] Moreover, the package of the motivational

intervention combined with Parent-Child Interaction Therapy was found to be more efficacious in reducing maltreatment recurrence than an enhanced version that included individual services for the parent along with home visiting to support parenting behaviors learned in the clinical sessions. Taken together, these findings suggest that physically abusive parents benefit from an intervention that invests time up-front to engender the parent's motivation to change their behaviors and provides intensive, directive support for changing negative parenting behavior.

We found insufficient evidence to draw conclusions regarding the efficacy of two home visiting interventions in addressing child welfare outcomes. Of note, both approaches were derived from existing interventions that had originally been developed as preventive approaches for families at risk (i.e., they were not designed to prevent maltreatment recurrence in families where abuse or neglect had already occurred).

Key Question 3. Comparative Effectiveness of Interventions with Different Characteristics

With input from our technical expert panel, we identified three types of characteristics to examine for KQ3: modality (that is, the service delivery format such as individual child-directed, individual parent-directed, dyadic, family, group-based), theoretical orientation, and specialty or nonspecialty service delivery settings. We selected modality and setting because of their cost and treatment implications and to build on previous systematic reviews that examined intervention effectiveness by theoretical orientation.[63-65] Our search for evidence on the comparative effectiveness of interventions with different treatment characteristics yielded few studies. We identified five trials that addressed modality or theoretical orientation.[22-25, 35, 45, 46] No eligible studies explicitly focused on comparing an intervention's efficacy or effectiveness in different types of settings.

Regarding modality, two trials compared the effectiveness of an intervention approach delivered in different formats.[35, 45, 46] The sparseness of evidence in this area reflects the predominant use of multiple modalities to address child maltreatment, with most interventions using a combination of sessions directed at the child individually or in a group format, the caregiver alone or in a group format, and/or joint (or dyadic) sessions working with the child and caregiver together. One of the two trials that addressed modality compared psychotherapy delivered in either a group or individual format;[35] the other compared family therapy delivered in a multiple family versus single family context.[45, 46] In both studies, neither design nor methods indicated that modality was a comparison of interest. Therefore, these comparisons involved interpretation on our part that may not be aligned with the researchers' intent. The group versus individual format comparison resulted in an unexpected finding that was contrary to the study hypothesis that group therapy would be less efficacious than individual psychotherapy for reducing trauma symptoms and psychological impairment in sexually abused girls.[35] The other study found that the multiple family treatment context yielded improved caregiver-child relationship outcomes compared with conventional, single family therapy (this study did not examine child mental and behavioral health outcomes).[45, 46]

Theoretical orientation could not be readily differentiated for meaningful contrasts because, in many studies, the description of the theoretical basis was not clear enough to make a determination. Another complication was that interventions were commonly based on more than one driving theory, rendering a set of idiosyncratic and eclectic approaches that did not lend itself to analysis for KQ 3. For example, Parent-Child Interaction Therapy is based in both social learning and attachment theory, and the variant of Child-Parent Psychotherapy included in this

review is heavily grounded in both psychoanalytic and attachment theory. Ultimately, we were able to identify three trials comparing an approach that was clearly reflective of a particular theoretical orientation against a clearly differentiated comparator.[22-25] Two of these trials examined Attachment and Biobehavioral Catch-up, a low-intensity attachment-based intervention with foster parents and young children, relative to an alternative psychoeducational approach in which the attachment-relevant content was excised (a derived comparator).[22-24] In both trials, the children in the attachment-based condition exhibited better cortisol regulation compared with children in the psychoeducational condition; in one trial, caregivers reported that children's avoidant attachment behaviors improved. The third trial investigated a cognitive behavioral approach, Trauma-Focused Cognitive Behavioral Therapy, compared with a psychodynamic, child-centered treatment akin to conventional practice.[25] The cognitive behavioral approach resulted in greater overall improvements in child behavior compared with the psychodynamic approach. However, unlike the psychodynamic alternative, the cognitive behavioral approach explicitly incorporated a trauma-specific focus. As a result, outcomes could not be attributed clearly to the effect of the theoretical orientation or to the trauma focus. Overall, the limitations associated with both the modality and theoretical orientation comparisons, as well as the overall paucity of studies focused on these outcomes or differences across settings, rendered the evidence for KQ 3 inconclusive.

Key Question 4. Comparison of Intervention Effectiveness for Improving Child Well-Being or Child Welfare Outcomes in Population Subgroups

KQ 4 examined the comparative effectiveness of interventions for different child and caregiver subgroups. All trials analyzed for this key question were also examined in either or both KQ 1 and KQ 2. Table C presents the summary of results for KQ 4. The table presents the strength of evidence and also indicates with which subgroup population(s) the intervention was evaluated; many interventions pertained to multiple subgroups.

For child subgroups, we synthesized the evidence by age and other sociodemographics, maltreatment type, and the presence of mental or behavioral health problems. For caregiver subgroups, we synthesized the evidence by caregiving context (i.e., maltreating parent, foster or kinship parent, residential care). We intended to synthesize findings by a number of other salient child and caregiver characteristics: (a) caregiver mental health problems, substance abuse, domestic violence, and sociodemographic subpopulations, and (b) severity of maltreatment and children with special needs (e.g., prenatal substance exposure). However, we did not identify any eligible studies that explicitly focused on these subgroups or stratified findings by these subgroups, so they are not represented in the results for KQ 4. Also, a number of studies excluded parents with active substance abuse or mental illness and children with documented developmental disabilities. We should also point out that because no studies did not stratify within the area of interest, we could not compare the results of the same intervention across different subgroups within a subgroup area of interest.

For child age, we found evidence for two interventions with young children (ages 0 to 5 years) in improving mental and behavioral health and caregiver-child relationship outcomes (low strength of evidence).[22-24] Both interventions were directed at children and their foster parents: Attachment and Biobehavioral Catch-up and the Bucharest Early Intervention Project.[27, 30, 36, 39] The latter also reported benefits in developmental outcomes (low strength of evidence).[48, 49] We

Table C. Summary of results for child and caregiver population subgroups[a]

Intervention	Comparator	Outcomes	0 to 5	6 to 10	11 to 14	Female	Neglect	Physical Abuse	Sexual Abuse	Trauma Symptoms	Maltreating caregiver	Foster Caregiver
Child-Parent Psychotherapy[b]	Usual care	healthy caregiver-child relationship	X	-	-	-	-	-	-	-	X	-
Attachment-based Intervention	Usual care	healthy caregiver-child relationship	X	-	-	-	-	-	-	-	X	-
Bucharest Early Intervention Project	Usual care	mental and behavioral health healthy caregiver-child relationship healthy development	X	-	-	-	X	-	-	-	-	X
Attachment and Biobehavioral Catch-Up	Active control[c]	mental and behavioral health healthy caregiver-child relationship	X	-	-	-	-	-	-	-	-	X
	Wait list	mental and behavioral health healthy caregiver-child relationship	X	-	-	-	-	-	-	-	-	X
Incredible Years[d]	Wait list	mental and behavioral health healthy caregiver-child relationship	X	X	-	-	X	-	-	-	X	-
Project Support[d]	Usual care	healthy caregiver-child relationship	X	X	-	-	-	-	-	-	X	-
Multidimensional Treatment Foster Care for Preschoolers[d]	Usual care	mental and behavioral health healthy caregiver-child relationship healthy development permanency	X	X	-	-	-	-	-	-	-	X
Trauma-Focused Cognitive Behavioral Therapy[d]	Active control[e]	mental and behavioral health healthy caregiver-child relationship	X	X	X	-	-	-	X	X	-	-
Multifamily Group Therapy[d]	Active control[f]	healthy caregiver-child relationship	X	X	X	-	-	-	-	-	X	-
Parent-Child Interaction Therapy (PCIT) Adaptation Package[dg]	Usual care + standard orientation	safety	X	X	X	-	-	X	-	-	X	-
	Usual care + Motivational Intervention	safety	X	X	X	-	-	-	-	-	X	-
	PCIT + standard orientation	safety	X	X	X	-	-	-	-	-	X	-

Table C. Summary of results for child and caregiver population subgroups[a] (continued)

Intervention	Comparator	Outcomes	0 to 5	6 to 10	11 to 14	Female	Neglect	Physical Abuse	Sexual Abuse	Trauma Symptoms	Maltreating caregiver	Foster Caregiver
Keeping Foster Parents Trained and Supported[d]	Usual care	mental and behavioral health healthy caregiver-child relationship placement stability permanency	X	X	X	-	-	-	-	-	-	X
Combined Parent-Child Cognitive Behavioral Therapy[d]	Active control[c]	mental and behavioral health	-	X	X	-	-	X	-	X	X	-
Group Psychotherapy	Individual Psychotherapy	G1 < G2 mental and behavioral health	-	-	X	X	-	-	X	X	-	-

[a] The table is sorted by age, sex, maltreatment type, symptoms, and caregiving context, in that order; further, when several interventions address the same subgroups, those with the most robust evidence are listed first. All outcomes presented in the table were graded as having a low strength of evidence with G1 > G2 unless otherwise noted. The table does not include outcomes for which there was insufficient evidence to draw a conclusion.

[b]Intervention is a variant of Child Parent Psychotherapy developed by Ciccetti and colleagues.[38, 47]

[c]Active comparator is an approach derived from an intervention wherein the degree to which core components of the original model are implemented is unclear and/or core components are omitted or substantively modified.

[d] KQ4 includes trials assessing interventions in populations that spanned more than one developmental period only if subgroup analyses were presented in the study.

[e]One comparator is a conventional approach, the other a derived approach.

[f]Active comparator is an approach representative of a conventional practice in the field.

[g]"Enhanced " refers to the provision of individualized services to the parents and home visiting to support skills learned in clinic-based therapy sessions.

Abbreviations: G = group; SOE = strength of evidence.

also found evidence supporting the comparative effectiveness of a variant of Child-Parent Psychotherapy developed by Cicchetti and colleagues[38, 47]and Attachment-based Intervention, [37] in benefits to the quality of the caregiver-child relationship. As noted, we would have liked to present a more fine-grained look at the youngest children, breaking out the evidence for very young children (infants and toddlers). However, we could not break down age subgroups further without creating duplication, as study populations commonly spanned wide swaths of child ages.

We identified only one trial that explicitly focused on children in the period of early adolescence; the study targeted sexually abused girls and was conducted in Iran.[57] This trial, which compared the efficacy of Eye Movement Desensitization Reprocessing with a highly modified version of Trauma-Focused Cognitive Behavioral Therapy that excluded the parent components in the standard version, was also relevant to several other subgroups (sex, type of abuse, type of maltreatment, presence of symptoms) but yielded insufficient evidence based on no differences between the study conditions. It should be noted that each of the study arms in this study comprised less than 10 participants. In addition to the Eye Movement Desensitization Reprocessing trial, we identified one other study that examined an intervention explicitly targeting girls.[35]This approach was an individual psychotherapeutic treatment, again for children exposed to sexual abuse. We found a low strength of evidence for this treatment, which reported substantively long-term benefits (up to two years after the start of treatment) in reducing trauma symptoms as compared with a group-based version of the treatment model.

For children exposed to neglect, we found low strength of evidence for two interventions in improving child well-being and the caregiver-child relationship: the Bucharest Early Intervention Project[27, 30, 36, 39, 48, 49] and the parent-group intervention known as the Incredible Years.[31] The Bucharest model also resulted in benefits for developmental outcomes. Several caveats must be noted about the Incredible Years evidence.[31] In one study, the comparison group was very small (n = 7); although we included studies with small sample sizes, this was one of only two studies reviewed with a study arm comprising less than ten participants.[31, 57] In the other study, change in parenting behavior was measured using an instrument developed by the authors with established content validity but no other validity data available; additionally, the findings were limited to a benefit in only one of the instrument's scales. An additional concern was that the intervention appeared to have been modified from the original in both studies in terms of the number of session and span of ages covered in the parent groups.

Three trauma-focused treatments explicitly targeted sexually abused children.[25, 26, 35, 55, 57] In two trials, Trauma-Focused Cognitive Behavioral Therapy, compared with active controls, reduced trauma and other mental and behavioral health symptoms and resulted in improved caregiver-child relationship outcomes (low strength of evidence).[25, 26] Also, as noted above, we found evidence for long-term (up to 2 years after the start of treatment) for an individual psychotherapy approach.[35] The psychoanalytically-oriented individual psychotherapy treatment developed by Trowell and colleagues also resulted in significant improvements in child mental health symptoms that were of notably long duration.[35]

We found evidence for two interventions that were evaluated with physically abusive parents: the Parent-Child Interaction Therapy Adaptation Package,[52] which included a motivational intervention component (low strength of evidence for reducing maltreatment recurrence) and the trauma-focused treatment, Child-Parent Combined Cognitive Behavioral Therapy (low strength of evidence for benefits in mental and behavioral health).[32] The cognitive behavioral treatment is based, in part, on another approach widely used in the field developed by Kolko and colleagues: Alternatives for Families – A Cognitive- Behavioral Therapy. This

treatment was not included because of study design limitations (pairwise comparisons, which are needed for comparative analysis, were not provided) [66] or the age of the child was older than that specified in our Population, Intervention, Comparators, Outcomes, Timing, and Settings (PICOTS).[67]

The studies targeting children with mental or behavioral health symptoms all focused primarily on traumatic stress outcomes. The strength of evidence for these studies has been discussed above, as the study populations overlapped with child sex, age, and/or type of maltreatment.[25, 26, 32, 35, 55, 57] Among these various approaches, the evidence was strongest for the comparative effectiveness of Trauma Focused Cognitive Behavioral Therapy[25, 26] and the individual psychotherapy treatment developed by Trowell and colleagues.[35] Each of these treatments was graded low strength of evidence. Although Child-Parent Combined Cognitive Behavioral Therapy was also graded as low strength of evidence for short-term benefits for child mental health outcomes, the strength of the evidence is attenuated by improvements in both groups, fade-out of the group difference by three month follow-up, and conflicting findings regarding changes in parenting behavior across parent and child report.[32]

In the area of caregiver subgroups, we found trials pertaining to caregiving context but not other caregiver characteristics. Twelve trials evaluated interventions with maltreating caregivers.[31, 32, 37, 38, 42, 43, 45-47, 52-54, 60] We did not include a trial that examined a coparenting adaptation of the Incredible Years model targeting both biological and foster parents because the comparative results were not stratified by type of caregiver.[44] Among these studies, we found the strongest evidence for the New Orleans Intervention[60] for reducing the risk of child and maternal recidivism, for the Parent-Child Interaction Therapy Adaptation Package also in reducing recidivism,[52, 53, 68]and for the home-visiting approach, Project Support,[43] in improving both mental and behavioral health and caregiver-child relationship outcomes (all low strength of evidence). Other interventions found to have benefits in caregiver-child relationship outcomes were the Attachment-based Intervention,[37] the variant of Child-Parent Psychotherapy developed by Cicchetti and colleagues,[38, 47] and Multifamily Group Therapy[45, 46] (again, all approaches low strength of evidence).

Four interventions were evaluated with foster parents: Keeping Foster and Kinship Parents Trained and Supported;[28, 62] the Bucharest Early Intervention Project,[27, 30, 36, 39, 48, 49] Attachment and Biobehavioral Catch-up,[22-24, 33] and Multidimensional Treatment Foster Care for Preschoolers (MTFC-P).[29]We found a low strength of evidence for each of these approaches in improving mental and behavioral health and caregiver child relationship outcomes. The Bucharest Early Intervention Project also yielded improved developmental outcomes,[48, 49] and both Keeping Foster and Kinship Parents Trained and Supported[62] and Multidimensional Treatment Foster Care-Preschoolers[51, 58, 59] increased positive permanency outcomes. The generally positive findings across the interventions for foster parents suggest the receptivity of this population to intervention and support.

Overall, our analysis for KQ 4 highlights the need for further attention to subpopulations in the literature, particular for caregiver characteristics. It was particularly notable that we could not identify any eligible studies that attended to race or ethnicity, given the attention to disproportionality in the child welfare arena.

Key Question 5. Comparative Effectiveness of Interventions with Children Exposed to Maltreatment for Engaging Children and/or Caregivers in Treatment

We identified three trials in the literature relevant to KQ 3 which assessed the comparative effectiveness of a motivational intervention designed to increase maltreating parents' engagement and retention in a parenting intervention. The motivational intervention was a six-week group-based motivational orientation to parenting services for families referred by CPS for maltreatment.

The researchers compared Parent-Child Interaction Therapy (PCIT) combined with either the motivational intervention or usual CPS orientation for maltreating families referred for parenting services (see KQ 2 for further description of this intervention package). The PCIT package that incorporated the motivational intervention yielded better parental treatment engagement relative to those assigned to receive PCIT with the standard CPS orientation. In addition, PCIT plus the motivational intervention yielded improved treatment retention outcomes compared with PCIT plus the usual CPS orientation. These findings are notable in light of the paucity of comparative research on participant engagement and retention and because of the elevated (moderate) strength of the evidence.

Key Question 6. Adverse Events Associated with Interventions for Children Exposed to Maltreatment

We included a KQ examining adverse events because there is the potential for harms, even temporary, associated with treatment with children exposed to maltreatment. Such harms make take the form of retraumatization associated with gradual exposure or caregiver distress resulting from an increased awareness of the harm a child exposed to abuse and neglect experiences. However, our review did not identify any studies that included an explicit focus on adverse events.

Discussion

Key Findings and Strength of Evidence

Overall, the evidence from 25 trials and 1 cohort study (reported in 42 articles) included in this comparative effectiveness review provides preliminary support for a number of promising approaches for addressing child exposure to maltreatment. Within and across intervention types, approaches varied in treatment target, intensity, modality (i.e., service delivery strategy), and theoretical orientation. The majority of studies identified for this review was conducted in the United States and evaluated parenting interventions. In contrast, comparative studies of treatments specifically designed to address children's traumatic responses to maltreatment were sparse.

This review also illuminates important gaps in the evidence that reflect the relatively new field of evidence-based mental health treatment provided in the context of the myriad and complex challenges of caring for maltreated children, engaging and retaining maltreating parents in treatment, and working within the parameters of the child welfare arena. Head-to-head studies are scarce, as are multiple or independent (i.e., tested by researchers unaffiliated with intervention developers) trials. Sample sizes are commonly very small. A gap in the literature

with implications for widespread implementation is the issue of "dose" or how much of an intervention is needed to affect change. None of the included studies addressed this issue. With the exception of studies involving younger children, few interventions were designed for or studied efficacy or effectiveness within specific age or developmental ranges. Similarly, studies rarely took into consideration or elucidated findings as they related to maltreatment type, severity, chronicity, timing, and exposure to other traumatic experiences. Also underrepresented in the literature were interventions studies specifically evaluating efficacy or effectiveness with the most vulnerable families; that is, maltreated children whose biological parents were struggling with substance abuse, mental health problems, or domestic violence.

Applicability

The evidence base largely represents the target population of children exposed to maltreatment. However, among the studies evaluating parenting interventions with maltreating parents, exclusion criteria employed by researchers may have affected the applicability of the findings in important ways. These exclusion criteria include parents who were not willing to participate in the intervention, parents with active substance use or abuse, parents with mental illness such as depression, and parents with a mental disability. The evidence base reflects the diverse range of intervention approaches in the field. The majority of interventions were low or medium intensity ($\leq$ 24 weekly session and/or $\leq$ 6 months in duration). For maltreating parents involved with child protective services, interventions with shorter durations better align with the strict timeline set for permanency planning under the Adoption and Safe Families Act.[69] The majority of studies in the evidence base delivered the intervention under more ideal than real-world conditions, with staff who had received specialized training and/or were under close supervision of a highly specialized clinician (often the intervention developer). The interventions appear to vary considerably in the degree to which they are ready for dissemination; there was minimal discussion of fidelity considerations in the literature we reviewed.

More than half of the comparisons in the evidence base evaluated the efficacy or effectiveness of the intervention against an active control. A third of these studies represented conventional practices in the field[25, 45, 46, 55] and the remainder were derivations of other approaches.[22-24, 26, 32, 38, 47, 57] The derived approaches made assessment of applicability difficult because it was not clear whether they reflected the best alternative treatments in the field. On the contrary, in several cases the comparator was a modified versions of an original model for which evidence of effectiveness exists in the scientific literature or did not appear to maintain core components of the original model with fidelity (the case in five trials).[22] The derived approaches also included two that were developed to control for nonspecific aspects of the experimental intervention which, again, did not reflect the best alternative treatment.

The evidence base for the efficacy or effectiveness of parenting interventions in changing parenting behavior associated with maltreatment is limited by the heavy reliance on parent self-report measures of behavioral or attitudinal change, often using only subscales of measures or measures with weak evidence of their validity for this specific study population. While parent self-reports of parenting practices are important indices of the quality of the caregiver-child relationship and the risk of maltreatment recurrence, measurement of objectively observed and rated behavior change would strengthen the evidence of benefits. Additionally, few parenting interventions with maltreating parents used an objective observational measure of child attachment to measure change in the caregiver-child relationship.

The child welfare outcomes data reported in the included studies were primarily drawn from child welfare agency records; however, the timing of followup to assess maltreatment recurrence was variable across studies, making it somewhat difficult to apply the findings to the already complex recidivism data in the State Child and Family Service Reviews (the data used by the Federal government to monitor State child welfare programs in meeting safety, permanency, and family and child well-being outcomes).

The majority of studies included in this review, regardless of intervention type, collected child well-being outcomes only at postintervention and follow-up timepoints were commonly in the 3 to 6 months after the intervention ended. Athough longer-term follow-up is important, short term follow-up improvements do have important applicability to maltreated children, particularly those children at risk of being removed from the home or parents at risk of losing custody unless the risks that brought their case to the attention of the child welfare system are addressed.

Limitations

This review has focused on clinical treatment for children whose need for care is defined by their exposure to maltreatment rather than their clinical presentation. We also did not control for the inherent clinical heterogeneity in the population of children in foster care, although the approximately 20 percent of children in foster care who are removed from the home for reasons other than abuse or neglect per se are placed in out-of-home care for reasons strongly associated with abuse and neglect (i.e., prenatal substance exposure; substance-abusing parent; domestic violence).[15] Nevertheless, such definitional issues likely resulted in a very heterogeneous population, with widely varying underlying need for interventions.

Our exclusions, described in the methods chapter, served to focus the review and control for sources of heterogeneity. Nonetheless, these exclusions necessarily limited the scope of this review. We describe important limitations below.

We excluded studies with “mixed” populations (i.e., with both maltreated children/maltreating families and children/families ‘at risk’ of maltreatment), yet we discovered in the course of the review that applying this exclusion criterion was complicated by considerable variability in the clarity and specificity with which authors defined their study populations. Additionally, likely due to the small sample sizes characteristic of the literature in this area, we did not identify any eligible studies that stratified the results by maltreatment-exposure status. Thus, severable notable studies in the field were not included in this review, including a recent RCT examining the effectiveness of Parent-Child Interaction Therapy with parents “referred from child protection authorities, identified as suspects of maltreatment by other professionals, or self-identified because of significant child behavior problems and stress” was excluded for mixed population.

We elected to exclude intervention studies that focused on primary or secondary prevention. In other words, we excluded studies where maltreatment was not indicated or substantiated or the description of the study population was too vague to make a determination. As noted earlier, we also excluded adolescents older than 14 years in recognition of how maltreatment and its sequelae evolve across the development continuum.[70] We recognize that the decision to exclude older adolescence meant excluding a large body of evidence and many widely used or well-respected intervention approaches such as Multidimensional Treatment Foster Care,[71] Multisystemic Therapy for Child Abuse and Neglect,[72, 73] and the Sanctuary Model®[74, 75] However, despite this exclusion, the review encompasses a broad spectrum of development and interventions, including infancy, early childhood, school age, and early adolescence.

In the interest of focus and comparability, service-delivery models likewise were excluded including intensive family preservation or reunification service models such as Homebuilders®, solution-focused/-based casework (an approach to assessment, case planning, and case management), differential response (i.e., an alternative assessment model offered by child protective services agencies to families reported for child abuse and neglect depending on the severity of the allegation), and routine preservice foster parent training programs.

Despite the high concordance of domestic violence with abuse or neglect, particularly physical abuse, we recognized the child's experience as a witness to violence is distinct from the experience of being a direct victim of caregiver affront. Thus, as noted, interventions studied with children exposed to domestic violence were not included in this review. However, many jurisdictions classify exposure to domestic violence as a form of maltreatment and many children involved with the child welfare system for abuse or neglect have also been exposed to domestic violence. Thus, we recognize that the distinction is not universal in the literature.

A further limitation of our approach has to do with the systematic review process itself. Our review required that included studies be of at least medium or low risk of bias and include comparators, and pairwise comparisons, to be able to make statements regarding effectiveness. One possible tradeoff of this focus on study rigor is a potential loss of applicability from the exclusion of evaluations of ongoing, highly adaptable programs with little or no research components or of interventions that are currently widely used in the field.

Research Gaps

Future studies with problems related to attrition would benefit from intention to treat (ITT) analysis. ITT analysis accounts for the bias from differential attrition between study groups and helps to avoid the error of incorrectly attributing effectiveness to an intervention when findings may reflect underlying differences in the final study groups. However, we recognize that ITT analysis may not be helpful in the case of extremely high and differential attrition, a persistent concern for the maltreatment studies we reviewed. Therefore, future studies will benefit from explicit strategies to reduce overall attrition rates, such as the motivational intervention orientation supplement to Parent-Child Interactional Therapy.[52, 53, 76]

A key limitation across studies is the lack of consistency in the use of common and validated measures for identifying symptomatology Greater coalescence around such measures will help future reviews generalize findings across studies and settings; more generally such a move will create greater consensus in the field around effective and ineffective interventions by introducing common metrics. Studies also lack attention to differences in cognitive, social-emotional and language skills across developmental age groups. As a result we found limited evidence that informs the question of the relative benefits of various interventions for different age subgroups. The field will benefit from routinely planned subgroup analyses that account for other important differences at baseline (e.g., the presence of traumatic stress and other symptoms, age, race/ethnicity type and severity of maltreatment, other family characteristics).

Studies either lack or fail to report power analyses. Because the evidence base features many small studies, this omission hampered our ability to assess whether the absence of effect reflected lack of effectiveness or insufficient statistical power. The vulnerability of the population increases the urgency of the need to identify effective interventions (and weed out ineffective interventions). Adequately powered studies, coupled with clear statements of statistical power calculations, can help to redirect resources and attention to the most promising interventions. Other concerns around statistical analysis and inference relate to the frequent

failure to control for multiple comparisons and the frequent reliance on post-hoc analyses. Failure to account for multiple comparisons may result in spurious findings of effectiveness. Similarly, undue reliance on post-hoc analyses is a form of data dredging that may turn up statistically significant results by chance. These types of analysis are useful to generate hypotheses and explain results but cannot take the place of previously planned analyses. Future studies should account for multiple comparisons and clearly state planned statistical analyses. In complex multifactorial interventions, these planned statistical analyses should include the assessment of mediators and moderators.

Researchers should review and utilize the CONSORT statement to ensure transparent reporting of trials.[77] Trials in this field do not typically blind participants or providers, but future studies should routinely blind outcome assessors to reduce the risk of detection bias.

Substantive Gaps

Our review intended to evaluate the comparative effectiveness of interventions for children experiencing maltreatment, but two major barriers arose in meeting this goal: first, studies infrequently undertook head-to-head comparisons with named active treatments, and second, studies that used a usual care comparator varied widely in the definition and content of usual care. Our systematic review also found several instances where comparators appeared to be derived from commonly used interventions that included variations specific to the setting or the study. Such variations, particularly when unlabeled and untested for efficacy, make it difficult to arrive at conclusions regarding comparative effectiveness. These limitations suggest three major substantive gaps. First, the field needs more evaluations of head-to-head comparisons of established interventions. Second, these new studies should clearly indicate the provenance of the comparator intervention and maintain fidelity to the extent possible. Third, future studies that alter established interventions should clearly explain the rationale for the change and test the expected active ingredient for effectiveness.

Another important gap beyond the measurement of fidelity has to do with the quality of training and the dissemination and spread of effective practices. These studies will benefit from replication and testing by independent researchers.

Treatment delivered with high levels of fidelity can be expected to provide maximal benefit, yet effective treatment that is not translated into general practice benefits only a select few. To ensure applicability to real-world settings, future studies should test the effectiveness of lower-intensity interventions to account for multiple stressors that families face. Another practical consideration for the development and testing of real-world interventions relates to the costs of service delivery (e.g., provider training, clinical effort and practice infrastructure), service receipt (e.g., family transportation, childcare, healthcare deductibles and coinsurance), and potential revenue (e.g., Medicaid, private insurance, public and private funders). With most mental health care based on service reimbursement, future research is clearly needed on the interplay of treatment model and structure, service definitions, utilization management, treatment authorization, and claims submission and authorization.

Other areas where research is urgently needed is in longer-term outcomes, duration of symptom remission or functional improvement, generalization of outcomes from one setting to another, outcome variability according to clinically heterogeneous subgroups, retraumatization, and the extent to which children involved in the child protective system achieved “permanent” placement. Permanency, in particular, may reflect study constraints rather than the desired

outcome of a constant, stable relationship with a parent or caregiver who comes to love and accept responsibility for a maltreated child.

Conclusions

There is considerable heterogeneity in the evidence-base for interventions for the highly vulnerable population of children exposed to maltreatment. The heterogeneity of the evidence pertains to the interventions tested, population characteristics, and measurement of outcomes. For all intervention types, evidence was predominantly based on one trial and head-to-head studies were scarce. The body of evidence for interventions that addressed child well-being in maltreated children provided either low strength of evidence or was insufficient to determine the strength of evidence. Attachment and Biobehavioral Catch-up,[22-24, 33] a parenting intervention directed at foster parents caring for infants and young children, and Trauma-Focused Cognitive Behavioral Therapy for sexually-abused children[25, 26] were each evaluated in more than one trial and resulted in improvements in both child mental and behavioral health and caregiver-child relationship outcomes. Despite the limited number of trials, we also found the enhanced foster care interventions included in this review, Multidimensional Treatment Foster Care for Preschoolers[29, 40, 41, 50] and the Bucharest Early Intervention Project,[27, 30, 36, 39, 48, 49] provided compelling evidence for the efficacy of multicomponent and highly individualized approaches for promoting child well-being. We found the strongest evidence for reduction of maltreatment recurrence for the multimodal, intensive, and individualized New Orleans Intervention along with Parent-Child Interaction Therapy, adapted for abusive parents and supplemented with a motivational intervention orientation.[52, 53] For other child welfare outcomes, we found evidence for improved permanency outcomes for children in Multidimensional Treatment Foster Care for Preschoolers intervention[51, 59] and for children whose foster parents participated in the Keeping Foster and Kinship Parents Trained and Supported program.[62]

When comparing interventions by theoretical orientation, the evidence supported attachment-informed and cognitive behavioral approaches. The evidence supported the comparative efficacy of certain interventions for other subgroups, including sex,[35] traumatic stress,[25, 26, 32, 34, 35] and maltreatment type.[25, 26, 31, 32, 35] Regarding caregiver context, we found strong support for the interventions we reviewed involving foster parents: Attachment and Biobehavioral Catch-up,[22-24] the Bucharest Early Intervention Project,[27, 30, 36, 39, 48, 49] and Multidimensional Treatment Foster Care for Preschoolers. We also found evidence in support of several interventions directed at maltreating parents: the New Orleans Intervention, the a Parent-Child Interaction Therapy plus motivational intervention package, Project Support, the Attachment- Based Intervention,[37] Child-Parent Psychotherapy,[38, 47] and Multifamily Group Therapy.[37] Despite the paucity of studies on treatment engagement and retention in the literature, we found moderate strength of evidence for a motivational intervention in improving parent engagement and retention in parenting services.

In sum, this review illuminates a number of promising approaching to improving child well-being and child welfare outcomes for abused and neglected children. However, our central finding is the urgent need to expand the evidence base to guide clinicians and policymakers in meeting the needs of this extremely vulnerable population. Given the paucity of research and myriad methodological challenges faced by researchers in this field, incorporating strong ongoing evaluation into existing programs and coordinating evaluation efforts across programs within communities may offer some promise for building the evidence base.

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Introduction

Background

Exposure to abuse and/or neglect in childhood has serious adverse consequences across the lifespan, including increased risk of emotional and behavioral disturbances, delinquency and violent crime, and chronic disease.[1-7] Child maltreatment violates the child's fundamental need for a sense of security, trust, and meaning in the world in that the primary caregiver is the source of psychological harm.[8-12] As such, maltreatment represents severe ongoing dysfunction in the caregiver-child relationship, causing prolonged intensive levels of stress that can overwhelm the child's capacity to cope.[13-15] For children who are removed from the home and placed in out-of-home care, separation from and loss of the primary caregiver exerts its own toxic effects that compound the original insult of the abuse or neglect. The unrelenting chronic stress associated with severe and repeated maltreatment has been shown to trigger a cascade of maladaptive physiological and psychological responses, propelling the child along a trajectory of accumulating problems that can eventually lead to the wide-ranging and persistent pathologies documented in the scientific literature.[9, 13, 16]

The current review is the first in a two-part series focusing on interventions that address child exposure to traumatic experiences. The topic of child maltreatment necessitated its own review, separate from a consideration of other types of trauma, given the extensive clinical heterogeneity of the population. Specifically, children exposed to abuse and neglect vary in terms of caregiving context (e.g., maltreated children may live in foster care, a residential setting, or at home with the offending biological parent), type of maltreatment, and degree and type of symptomatology. Originally, this review was to include intervention studies targeting children exposed to domestic violence. However, due to concerns about clinical heterogeneity that emerged during the review process, studies directed at this population were ultimately excluded. The decision to exclude domestic violence-focused studies was complicated because maltreatment and domestic violence are epidemiologically[17] and clinically related (in both cases, the child's fundamental need to trust in the parent as protector is jeopardized). Yet the nature of the threat is different in clinically important ways for the child who witnesses but does not directly experience violence.[18-21] The second review in the series (forthcoming) focuses on interventions with children exposed to traumatic events other than maltreatment; these include natural disasters, fire, motor vehicle and other accidents, medical trauma, school and community violence, and grief related to the death of a loved one. Due to timing issues, it was not possible for the second review to include intervention studies targeting children exposed to domestic violence.

Definitions

The term child maltreatment is defined variously in the scientific literature and across the many health and human services sectors that address the issue. For this review, we base the definition of child maltreatment on two sources: a report from the Centers for Disease Control and Prevention (CDC) proposing uniform definitions for improved public health surveillance[22] and language from the key federal legislation that sets the standards states must incorporate into their statutory definitions, the Child Abuse and Prevention Treatment Act (CAPTA; 42 U.S.C. §5101, as amended by the CAPTA Reauthorization Act of 2010).[23] Thus, we define maltreatment as any act or series of acts of commission or omission by a parent (custodial and

noncustodial parents) or other caregiver that results in harm, potential for harm, or threat of harm to a child; the harm to a child may or may not be the intended consequence. For this review, we also define neglect as privation or severe social deprivation, as can be the case in institutional care if the child does not have the opportunity to form a close relationship with a primary caregiver. Further detail regarding the definitions used to guide this review is presented in the Methods chapter.

Incidence and Prevalence

Child maltreatment is a global public health problem affecting high-, middle-, and low-income countries. According to a recent report from the World Health Organization (WHO) and the International Society for Prevention of Child Abuse and Neglect,[6] international studies have reported high rates of child physical abuse (between 25 percent to 50 percent of all children, depending on the country). Estimates of child sexual abuse based on adult report of exposure during childhood are also high: 20 percent for women and 5 percent to 10 percent for men.[6] Data from child welfare agencies in the high-income countries of the United Kingdom, Canada, and Australia report rates of maltreatment among substantiated cases ranging from 34 percent to 60 percent for neglect, 10 percent to 28 percent for physical abuse, and 7 percent to10 percent for sexual abuse.[7]

In the United States, a nationally representative survey on child exposure to violence conducted in 2008 found that more than 1 in 10 children (10.2 percent) had experienced some form of maltreatment (including physical abuse, psychological or emotional abuse, and child neglect) during the previous year.[24] Nearly 1 in 5 children (18.6 percent) had been exposed to maltreatment in their lifetimes.[25] Important incidence and prevalence data for the United States are also available from investigated reports of maltreatment to state child protective services (CPS) agencies (the National Child Abuse and Neglect Data System or NCANDS).[26] However, a caveat about the accuracy of these data is warranted: it is generally understood that the minimum standards set by federal and state laws for defining abuse and neglect and misidentification of cases by CPS greatly underestimates the true incidence.[27] The most recent NCANDS data for federal fiscal year 2010 indicate that approximately 5.9 million children were involved in 3.3 million referrals to CPS; 2 million of these reports were screened in and received a CPS response. Of the nearly 1.8 million reports that received an investigation, 436,321 were found to be substantiated, and 24,976 were found to be indicated (meaning that maltreatment was highly likely despite insufficient evidence to substantiate).

Among substantiated cases, the most prevalent type of maltreatment was neglect (78.3 percent) followed by physical abuse (17.6 percent). Approximately 9 percent of victims experienced sexual abuse and 8 percent suffered psychological maltreatment.[28] Infants less than 1 year of age had the highest rate of victimization at 20.6 per 1,000 children. Approximately 34 percent of victimized children were infants and toddlers (0 to 3 years of age); 23.4 percent were 4 to 7 years of age, 18.7 percent were 8 to 11 years of age, and 17.3 percent were 12 to 15 years of age. Victimization was split almost evenly between the sexes, regardless of age group. More than one-third (37.2 percent) experienced victimization by their mother acting alone, 19.1 percent were maltreated by their father acting alone, and nearly 18.5 percent were maltreated by both parents.[26]

Regarding race and ethnicity, the majority of children with substantiated maltreatment in 2010 were Caucasian (44.8 percent), followed by African American (21.9 percent), and Hispanic (21.4 percent).[28] African American, American Indian or Alaska Native, and children of multiple

racial descent had the highest victimization rates (14.6, 11.0, and 12.7 per 1,000 children, respectively). African American children, in particular, are disproportionately represented in the child welfare system relative to their percentage in the general population (approximately 15 percent). Whether these figures represent actual higher rates of maltreatment among African American children or bias resulting from systematic differential attention to them in CPS referrals, investigation, or service allocation is a matter of considerable debate in this field.[29, 30]

Although racial disproportionality remains a controversial issue, the clear consensus is that child maltreatment is multiply determined and that the numerous risk factors for child abuse and neglect cut across domains of parent/caregiver, family, child, and environment.[6, 31, 32] At the caregiver level, a major risk factor is the parent's own history of maltreatment as well as depression, substance abuse, negative ideations about the child, lack of or inaccurate knowledge of normative child development, harsh discipline practices, and being a young/adolescent parent. At the family level, risk factors include single parenting, stress, social isolation, marital conflict, and domestic violence and, at the environmental level, poverty and community violence. Several child attributes that put additional physical and emotional demands on the parent/caregiver are also recognized as risk factors, including young age of the child (younger than 3 years) and child physical, cognitive, and emotional disabilities. Experts generally agree that the unhealed emotional wounds of childhood maltreatment can coalesce with other risk factors to carry maltreatment's negative effects on parenting forward across generations, although rates and patterns of intergenerational maltreatment vary substantially across studies.[33-38]

Etiology

A burgeoning knowledge base in psychobiological research is advancing our understanding of the toxic effects of prolonged, severe, and unpredictable stress on brain development and child mental and behavioral outcomes. Exposure to toxic or traumatic stress in the form of maltreatment may alter the developing brain by sensitizing neural pathways and overdeveloping regions of the brain where fear and anxiety responses are activated.[39] One specific pathway of effect is dysregulation of the hypothalamic-pituitary-adrenal (HPA) axis. Specifically, chronic exposure to stressful and arousing events is associated with activation of the HPA axis, which releases a cascade of steroid hormones, including the primary stress hormone cortisol. Excess cortisol production alters children's baseline for arousal such that even nonthreatening environments stimulate a fear response.[40] Dysregulation of neurochemical regulatory processes is especially damaging in the early years of development when neurological structures are undergoing formation (see Gunnar et al., 2006[41] for a review). In the case of maltreated infants and young children, researchers have found that children in foster care exhibit atypical diurnal cortisol production patterns;[42] similarly, research with children exposed to severe social deprivation in institutional care prior to adoption have identified alterations in brain functioning including significantly reduced cortical activity and dysregulation of neuroendocrine systems.[43, 44] Atypical cortisol production in adults has been found to be associated with conduct disorder, antisocial personality disorder, depression, and substance abuse.[43, 45, 46]

Another critical source of toxic stress contributing to poor mental and behavioral outcomes in this vulnerable population is the experience of repeated disruption in care when children are removed from the home and placed in foster care. Although most children reported to CPS (approximately 88 percent) remain living at home with their biological caregiver, approximately 250,000 children in the United States enter foster care each year.[47] Foster care is a component of the child welfare system that entails "placement of a child in a substitute home environment

when the child's parents are unable or unwilling to provide appropriate care. It is intended to be a time-limited placement on the way to determining one of the following three permanency plan options: reunification with the biological parent, conversion of the foster home to a legally permanent guardianship or adoption, or placement of the child into another legally permanent family."[48, p.1404] Approximately 20 percent of children placed in out-of-home care are removed from their homes because of risks other than maltreatment, per se, that threaten their safety (namely because of a substance-abusing parent, prenatal substance-exposure, or domestic violence). CAPTA allows states wide latitude in their definitions of maltreatment that allow them to make appropriate referrals and develop service plans for the "safe care of the child," such that states may or may not define prenatal alcohol or drug exposure or parental substance abuse as category of child abuse or neglect.[23] That said, the vast majority of children are removed because of substantiated abuse or neglect.[28]

Approximately 30 percent of children whom CPS removes from the home are eventually reunified with their prior, often biological, primary caregiver.[49-52] However, these children are highly likely to be removed from the home again. One study that examined re-entry rates in the Multistate Foster Care Data Archive, a longitudinal dataset representing 1.3 million foster children in 12 states, found that the majority (nearly 70 percent) of children reunified with their primary caregivers re-entered care within a year and that nearly 40 percent of these children were placed again within 90 days.[53, 54] Another study using this same dataset examining re-entry rates among infants found that the 27 percent who were discharged from foster care eventually returned and that re-entry rates differed by placement type. Specifically, infants placed with relatives and then discharged to relatives were least likely to reenter foster care (11.9 percent) compared with children discharged to their parent (28.5 percent) or placed with a traditional foster family (32 percent).[55] A typical child in foster care will experience slightly more than three placement changes over 3 years.[51] Children with medical, developmental, and mental health problems are especially likely to drift from placement to placement.[56] This scenario of repeated separation from primary caregivers and the corollary loss of important attachment relationships aggravates the child's sense of fear, isolation, and betrayal caused by the original insult of maltreatment. Particularly in the earliest years of life, attachment disruption as a result of repeated separations from and loss of important caregivers puts children at risk for socioemotional dysregulation and developmental problems.[57, 58]

Given the variability in children's maltreatment exposure and experiences related to foster care, it follows that mental and behavioral problems among abused and neglected children vary widely in type and severity of symptoms, which include traumatic stress, depression, anxiety, and behavioral problems. As described earlier, when maltreatment is chronic, cumulative, and prolonged, it may present as a form of complex trauma, a subset of psychological trauma, with potentially profound negative effects on fundamental developmental processes in childhood.[8] When children experience unpredictable detachment, neglect, violence, and repeated abandonment in the context of their early caregiving relationship, their sense of self, other, and self in relation to other becomes disturbed when, under normal conditions, it should be becoming consolidated.[8, 14, 59] The disruption of healthy attachment in turn impairs the child's capacity for emotional regulation, empathy, and coping.[14, 15, 57, 58]

These early impairments can lead to chronic dysregulation of affective experience, including mood disorders, as well as under- and overcontrolled behavior patterns.[60] Yet most children experiencing complex trauma do not meet diagnostic criteria for post-traumatic stress disorder (PTSD), in part because exposure to maltreatment and traumatic loss associated with separation

from caregivers do not necessarily meet the APA Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR) criteria for a traumatic event. Diagnosis of PTSD and other mental or behavioral disorders is particularly complicated for young children who, in the context of rapid development and maturation, seldom meet full standard or diagnostic criteria. Rather, they often exhibit symptom clusters that can be characterized in terms of alternate diagnostic systems (e.g., 0 to 3 Diagnostic Classification[61]) that address developmentally specific clinical presentations that can be precursors to later poor outcomes throughout childhood and adolescence and into adulthood. Recently, a Developmental Trauma Disorders Task Force of the National Child Traumatic Stress Network has begun to conceptualize a new diagnosis, developmental trauma disorder, to address with greater precision the developmental, psychological, biological, and social factors that serve as both causes and outcomes of child maltreatment.[62] Although consensus is lacking on this emerging diagnosis, attention to children's complex trauma histories in diagnostic assessment and effective treatment is a central topic in children's clinical care.[60, 62]

Disease Burden

The National Survey on Child and Adolescent Well-Being (NSCAW) provides key indicators of child well-being among children investigated for maltreatment in the United States, tracking the extent of mental and behavioral health needs in this population over time.[49, 63] Among children who come in contact with CPS, 48 percent show signs of an emotional or behavioral problem and more than 30 percent of children birth to 3 years have developmental delays.[64] However, only 25 percent of the NSCAW population receives any specialty intervention to address their developmental and other special needs.[65, 66] Data from the National Survey of Adoptive Parents (NSAP) finds that children adopted from foster care have similarly high morbidity rates including Attention Deficit Hyperactivity Disorder (38 percent) and behavior and conduct problems (25 percent).[67] Research with international adoptees has found that children who experienced severe social deprivation in institutional care prior to adoption have more behavioral and social problems than international adoptees without such preadoption adversity[68] One study found that children adopted from countries where the conditions of large-group institutional care put children at risk for social deprivation (such as Romania) were 2 to 2.5 times more likely to experience disability, including impaired functioning due to emotional impairment, compared with children adopted domestically.[69]

Child maltreatment also represents a significant economic burden to society, cutting across many different service sectors including child welfare, health care, special education, and criminal justice. A recent study provides estimates of the aggregate lifetime costs of fatal and nonfatal child maltreatment. In addition to child welfare, special education, and criminal justice costs, the authors factored both short- and long-term health care costs as well as lost productivity into their estimations. Using incidence data from 2008, the researchers estimated that the total lifetime costs (in 2010 dollars) of nonfatal child maltreatment for CPS-investigated cases (that is, substantiated cases of child maltreatment) are $122 billion and fatal costs (also based on CPS data) are $2 billion.[27] These estimates reflect approximately $25 billion in short-and long-term health care costs, $84 billion in productivity losses, $4 billion in child welfare costs, $4 billion in criminal justice costs, and $5 billion in special education costs.[27] Another dimension of societal cost burden is the impact on Medicaid, as children in foster care account for a disproportionate share of Medicaid expenditures relative to their proportion of Medicaid enrollment. Much of this disparity results from foster children's disproportionate receipt of mental health services. Youth

in foster care use Medicaid-reimbursed mental health services at a rate 8 to 15 times higher than other Medicaid eligible youth.[70-73]

Intervention Strategies

Interventions represented in the literature that met our criteria for this review focus on the clinical needs of the child and/or the child-caregiver relationship either through psychosocial or pharmacological interventions (note: no eligible studies addressing pharmacotherapy were identified for inclusion). Due to their heterogeneity, service delivery approaches or strategies to improve the system of care for children and their caregivers and families are not included in this review. The relevant interventions are diverse in theoretical basis, target (child, parent, parent and child, family), modality (e.g., individual, dyadic, group format), setting (clinic, community agency, and/or home), intervention strategies, intensity, and outcomes. Several interventions included in this review are adaptations of or derived from approaches designed for other populations. By adaptation, we refer to approaches that in their adaptation and/or augmentation maintain the integrity of the original intervention (i.e., with minor modifications to the curriculum or manual and/or supplemental components). By derivation, we refer to approaches wherein the authors do not specify the degree to which the original model was implemented and/or the extent to which core components were modified. Studies of interventions included in this review are commonly conducted with a heterogeneous population of children based on exposure (either to a specific form of maltreatment or based on their involvement with the child welfare system) and not necessarily the presence, type, or degree of symptomatology. A smaller subset of interventions includes components specifically designed to address trauma and other symptoms associated with the exposure; these interventions are applied across a wide range of symptoms or symptom severity. For this review, we categorized the interventions as follows.

Parenting Interventions

The majority of interventions included in this review are approaches that aim to modify parenting behavior and thereby improve child outcomes. Parenting interventions with maltreating parents target core caregiver- and/or family-level risk factors associated with child well-being including: increasing the caregiver's attunement, sensitivity, and responsiveness to the child's needs; improving negative attitudes toward the child and/or the role of parenting; teaching positive discipline techniques to use in managing challenging behavior instead of corporal punishment; improving family functioning; and/or addressing safety risks in the home. Parenting interventions with maltreating families also commonly focus on reducing the parent's stress and promoting the parent's emotional well-being. Interventions also commonly include a component of practical assistance (e.g., assistance with food insecurity or substandard housing) or support to ameliorate stressful circumstances for the family.

When interventions are directed at the foster or kin caregiver, the focus is on increasing the caregiver's understanding of the effects of abuse and neglect on children, empathy towards the child, and capacity to provide nurturing, responsive, and developmentally appropriate care. Many parenting interventions with foster (or kinship) parents are directed at supporting the caregiver in effectively managing child behavioral problems and reducing the foster parent's stress related to the behavioral challenges. The interrelated goals of these interventions are to improve child functioning, avoid a failed out-of-home placement which results in a negative placement change (e.g., the child being moved to a new foster care placement, a more restrictive environment such as psychiatric care or juvenile detention center, or child runaways), and

expedite a positive permanent placement for the child. Treatment plans often include concurrent planning that simultaneously aims to support the child's relationship with the biological and foster caregiver in the interest of a positive exit from foster care and timely permanent placement (that is, either reunification with the biological parent or other relative or adoption).

Table 1 outlines key features of the parenting interventions addressed in the report.

Table 4. Parenting interventions: Key features

Intervention	Brief Description
Attachment and Biobehavioral Catch-up[74-77]	• Home-based approach to help foster parents provide nurturing, sensitive care that promotes child regulatory capabilities and attachment formation; • Employs manualized parenting curriculum, flexibility in responding to current issues, and use of videotapes of parent-child interaction to illuminate child cues and strengths in the relationship; • Children ages birth to 5 years.
Attachment-based Intervention[78]	• Home-based approach loosely derived from Attachment and Biobehavioral Catch-up and other attachment-focused interventions; focuses on maternal sensitivity to child emotional and behavioral cues to support secure attachment; • Employs individualized parent-child interaction support, video feedback, and discussion of attachment/emotion regulation-related themes; • Children ages 1 to 5 years.
Child-Parent Psychotherapy[79, 80]	• Dyadic approach; variant of Child-Parent Psychotherapy, developed by Cicchetti and colleagues; focuses on parent-child attachment; • Based on infant mental health principles; attachment and developmental psychopathology theory; • Employs the parent-child relationship as the "port of entry" for therapeutic work; • Children ages 12 months to 5 years.
Incredible Years Program[81, 82]	• Didactic group-based parent training approach; focuses on strengthening parenting competencies and reducing child behavior problems; • Based on cognitive social learning theory; self-efficacy theory; developmental interactive learning methods; cognitive strategies for challenging angry, negative, and depressive self-talk; • Employs didactic training, videotaped vignettes, role play exercises, home activities; • Children ages birth to 12 years.
Incredible Years Adaptation[83]	• Incredible Years adapted for use with foster and biological parent pairs to address placement issues such as safety and attachment; supplemented with a coparenting component based on structural family systems theory; focuses on supporting a positive, nonconflicted relationship between caregivers and promotes a caregiving environment sensitive to the child's needs; • Children ages 3 to 10 years.
Keeping Foster Parents Trained and Supported[84, 85]	• Didactic group-based parent training approach to increase foster and kin parents' positive reinforcement relative to discipline, based on the foster parent training component in the Multidimensional Treatment Foster Care model (see Table 2 below); focuses on positive discipline strategies; • Delivered by paraprofessionals; employs role plays, videotapes, homework practice; • Employs didactic training and group discussion related to primary curriculum concepts; • Children ages 5 to 12 years.
Nurse Home Visitation Intervention[86]	• Home-visiting approach; focuses on intensive family support, parent education, and referrals to health and social services; derived from Olds and colleagues preventive intervention but authors developed their own manual;[87] • Employs mutual problem identification, goal setting, and problem-solving strategies; supporting positive parent-child interaction; • Children ages birth to 13 years.

Table 1. Parenting interventions: Key features (continued)

Intervention	Brief Description
Multifamily Group Therapy[88, 89]	• Family-based approach involving two or more families representing two or more generations; focuses on problems and concerns related to family relationships, functioning; roles; • Includes elements of structural family therapy, group therapy, behavior modification, cognitive-behavioral therapy, reality therapy, parent education, and crisis intervention; • Employs strategies such as developing a family problem list, establishing a no-violence contract, reframing to encourage cooperation and reduce negative attributions of blame; • Age of children not specified.
Parent-Child Interaction Therapy Adaptation[90-92]	• Standard Parent-Child Interaction Therapy[93] adapted for abusive or neglectful parents; based on social learning and attachment theory; includes a motivational intervention orientation; • Three phases: (1) Motivational Intervention (orientation phase); (2) Child-Directed Interaction phase during which parents develop child-centered interaction skills; (2) Parent-Directed Interaction phase during which effective discipline skills are the focus; • Employs live parent-child skills practice/rehearsal, with live coaching by the therapist (immediate feedback from therapist from observation room to parent via wireless earphone); coaching driven by behavioral principles such as modeling, reinforcement, and selective attending to shape parents' behaviors; • Children ages 4 to 12 years.
Project Support[94]	• Parent training and instrumental/social support approach to address child behavioral problems and foster a more positive and warm parent-child relationship; • Employs direct instruction, practice, and corrective feedback components augmented to address the circumstances of children in abusive, low-income families; emotional support; help obtaining material resources and social supports; training in decision-making and problem-solving skills; • Children ages 3 to 8 years.

Note: Descriptions based on information provided by the authors in the included studies, by the intervention Web sites (when available), and several registries of programs and practices.[95-99]

Trauma-Focused Treatments

A subset of interventions in this review included treatment components that explicitly address trauma and other symptoms associated with the child's maltreatment. These approaches are child-directed and almost always include a caregiver-directed component in the form of sessions that occureither alone or jointly with the child. Trauma-specific treatment strategies include: assisting the child to develop a trauma narrative (through words, symbolic representation, or play), cognitive reframing and coping skills related to the trauma, gradual exposure and mastery of traumatic reminders, and psychoeducation about childhood trauma and PTSD. For parents of children who have experienced sexual abuse, treatments may address the caregiver's ambivalent feelings toward the offending parent and the parent's own history of abuse. Table 2 outlines key features of trauma-focused treatments addressed in the report.

Table 5. Trauma-focused treatments: Key features

Treatment	Brief Description
Combined Parent-Child Cognitive Behavioral Therapy[100]	• Cognitive behavioral treatment approach for physically abusive parents, incorporates components of Trauma-Focused Cognitive Behavioral Therapy[101, 102] and Abuse-Focused Cognitive Behavioral Therapy;[103, 104] • Treatment components: child gradual exposure/construction of a trauma narrative (child group), parent abuse clarification process (parent group), and joint trauma narrative/abuse clarification and negotiation/rehearsal of safety plan (parent-child group); also incorporates psychoeducation and parent skills training (e.g., cognitive-coping, anger management, and problem-solving skills); • Employs modeling, role plays, behavioral rehearsal, praise, corrective feedback, and homework assignments; • Children ages 7 to 13 years.
Eye Movement Desensitization and Reprocessing (EMDR)[105]	• Information processing treatment, addresses the experiential contributors of wide range of pathologies; attends to past experiences and current situations that trigger dysfunctional emotions, beliefs, and sensations; • Contains elements of many psychotherapies in structured protocols, including psychodynamic, cognitive behavioral, interpersonal, experiential, and body-centered therapies; • Treatment components: eight phases using various procedures including “dual stimulation” in which client, using either bilateral eye movements, tones or taps, attends momentarily to past memories, present triggers, or anticipated future experiences while simultaneously focusing on a set of external stimulus; • Children ages 3 years and older.
Fostering Healthy Futures[106]	• Two-component approach comprising skills groups and mentoring designed to foster resilience through the promotion of adaptive functioning in emotionally maltreated children in foster care; • Employs cognitive-behavioral skills group activities with process-oriented materials; curriculum was based on materials from other programs;[107-109] mentoring component is individually tailored, targets creating empowering relationships with children, linking/supporting children in needed services receipt, helping children generalize skills learned in group to real world with weekly activities, engaging children in extracurricular, educational, social, cultural, and recreational activities, and promoting positive future orientation; • Children ages 9 to 11 years.
Group Psychotherapy[110]	• Psychoanalytic and psychoeducational approach with symptomatic sexually abused girls; includes generic and sexual abuse-specific components; social-work support group for caregivers; • Treatment components: engaging girls and their caregivers, maintaining the therapeutic alliance; management of anxieties and appropriate handling of the post-abuse and current concerns; • Children ages 6 years and older.
Play therapy[111]	• Attachment-focused, directive play therapy; focuses on building a therapeutic alliance between the therapist and child that provides a corrective emotional experience with an attachment figure, allowing for improvements in self-concept and coping skills; • Treatment components include setting expectation that therapy is a safe place, exploration of the child’s feelings about the maltreatment, teaching child new coping mechanisms for dealing effectively with negative feelings through symbolic reenacting and role playing of abuse scenarios; • Children ages 3 to 5 years.

Table 2. Trauma-focused treatments: Key features (continued)

Treatment	Brief Description
Trauma-Focused Cognitive Behavioral Therapy[101, 112, 113]	• Cognitive behavioral approach for reducing the child's maladaptive responses to exposure to a traumatic event (namely sexual abuse); intended for children who have significant behavioral or emotional problems related to traumatic life events; • Treatment components: skills in expressing feeling; recognizing the relationships between thoughts, feelings, and behaviors; training in coping skills; gradual exposure (also referred to as creating the child's trauma narrative); cognitive processing of the abuse experience(s); joint child-parent sessions; psychoeducation about child sexual abuse and body safety; parent behavior management support ; • Children ages 3 to 18 years.

Note: Descriptions based on information provided by the authors in the included studies, by the intervention Web sites (when available), and several registries of programs and practices.[95-99]

Enhanced Foster Care Interventions

This review includes three interventions that provide a comprehensive set of intervention and supportive services for children in foster care and their caregivers. These approaches are multimodal in nature, comprising multiple clinical intervention components such as a training program for foster parents, in-home counseling to foster parents for managing child behavior problems, dyadic psychotherapy, individual adult psychotherapy, therapeutic preschool, and medication management) along with numerous supportive services (examples include 24-hour on-call consultation to foster parents; foster parent support groups; referrals). Table 3 outlines key features of the enhanced foster care interventions addressed in the report.

Table 6. Enhanced foster care interventions: Key features

Interventions	Brief Description
Bucharest Early Intervention Project[114-120]	• Specialized social work foster care network providing infant mental health-informed counseling and parenting support to foster parents caring for institutionalized infants and toddlers in Bucharest, Romania; adapted from New Orleans Intervention approach;[121] • Intervention delivered via a team of social workers trained extensively in basic principles of infant mental health, including building attachment relationships, understanding children's postinstitutional adjustment, and managing common behavior problems; • Intervention components: frequent in-home monitoring of child adjustment progress and problems; developmental interventions, particularly in the area of communicative behavior; behavioral intervention (including support and developmentally informed guidance regarding child behavior and emotional problems); service referrals; foster parent support group; • Children ages 6 months to 3 years.
Muiltidimensional Treatment Foster Care for Preschoolers[122-128]	• Family-based intervention directed at child, foster care provider, and permanent placement resource (birth parents; adoptive relatives or nonrelatives); delivered by a treatment team; adaptation of the Multidimensional Treatment Foster Care behavioral treatment alternative for adolescents in residential settings; • Intervention components: (1) intensive pre-placement foster parent training; foster parent post-placement support and supervision from a 'foster parent consultant' via daily telephone contact, weekly foster parent support group meetings, and 24-hour on-call crisis intervention; (2) child services from a behavioral specialist working in preschool or day care and home-based settings and participation in a weekly therapeutic playgroup sessions where child behavioral, social, and developmental progress are monitored and addressed; (3) necessary medication management to address symptoms of ADHD, anxiety, and other disorders; (4) family therapy to reinforce and facilitate generalization of new parenting strategies across a range of contexts; • Children ages 3 to 6 years.

Table 3. Enhanced foster care interventions: Key features

Interventions	Brief Description
New Orleans Intervention for Maltreated Children in Foster Care[121]	• Partnership between university faculty with expertise in infant mental health and child welfare agency to address the developmental and mental health needs of children younger than 48 months of age placed in foster care for abuse or neglect in New Orleans, Louisiana; • Directed at child and their birth and foster families; delivered by a multidisciplinary treatment team specializing in infant mental health; • Intervention components: (1) intensive assessment, comprising an average of 15-20 hours of face-to-face contact with children and their important caregivers and contexts (including home- and clinic-based observations, standardized procedures and naturalistic observations, structured and unstructured interviews, and self-report measures; culminates in a case conference for involved professionals, a feedback sessions for parents, and a letter to the juvenile court detailing specific findings and recommendations; (2) comprehensive, multimodal, individualized treatment to meet the goals defined in the court-ordered case plan for the family, which often includes individual psychotherapy with parents, dyadic psychotherapy with parents and young children, medication, and crisis intervention. • Children birth to 4 years.

Abbreviations: ADHD = attention deficit hyperactivity disorder.

Scope and Key Questions

Scope of this Review

This review provides a critical analysis and synthesis of the comparative efficacy and effectiveness of interventions (psychosocial and pharmacological) for children ages birth to 14 years that address child well-being and/or promote positive child welfare outcomes (safety, placement stability, and permanency). The review also examines (1) how interventions with different characteristics (modality, theoretical orientation, setting) compare in improving child outcomes, (2) how interventions compare in terms of treatment engagement and retention, and (3) adverse events associated with the interventions reviewed. An overarching goal of this review is to identify gaps in the current scientific literature and highlight important areas for future research to build the evidence base for interventions with maltreated children.

Several peer-reviewed systematic reviews have been conducted on interventions with maltreated children; however, the reviews available to date each represent only a cross-section or a subset of the outcome of interest covered in this comprehensive comparative effectiveness review (CER). Examples include a meta-analysis of the effects of psychotherapy with sexually abused children and adolescents[129] and a meta-analysis of parent training programs to reduce parents' risk of abusing a child.[130] A Cochrane review is available on behavioral and cognitive behavioral training interventions with foster caregivers in the management of difficult behavior;[131] another Cochrane review, in the protocol stage as of 2012, will assess the effectiveness of family therapy for improving outcomes for children who have experienced physical abuse and preventing recurrence of abuse.[132] A relevant systematic review is also available from the Social Care Institute for Excellence of the National Institute for Health and Clinical Excellence (NICE) examining the effectiveness of training and support for foster caregivers and other professionals on the physical and emotional health and well-being of children and adolescents in foster care in the United Kingdom.[133]

In 2010, the Office of Planning, Research and Evaluation (OPRE) in the U.S. Administration for Children and Families (ACF) made available the results of a systematic review examining the effectiveness of home visiting models serving pregnant women or families with children from birth to age 5 years.[134] Although reduction in child maltreatment was an outcome domain in the ACF/OPRE review, its focus on secondary prevention with at-risk families and narrow age range

minimized the overlap with this review, because we target clinical interventions with children ages 0 to 14 years of age already exposed to abuse or neglect. PreVAil: Preventing Violence Across the Lifespan Research Network is another important resource that informed this review with its recent synthesis of research findings across systematic and meta-analytic reviews in the area of child maltreatment prevention and intervention.[135, 136]

Additionally, several government and nonprofit organizations have developed highly regarded and widely used evidence-based registries and informational resources in this field. These sources help guide clinical and other practitioners, funders, and policymakers in selecting and supporting effective interventions to mitigate risk and to address the mental and behavioral health needs of children exposed to maltreatment. Examples include the National Child Traumatic Stress Network's library of Empirically Supported Treatments and Promising Practices[95] and the National Registry of Evidence-based Programs and Practices (made available by the Substance Abuse and Mental Health Services Administration)[96] and the California Evidence-based Clearinghouse for Child Welfare.[99] Other seminal resources include a report on evidence-based practices for child abuse treatment by the Chadwick Center on Children and Families[137] and a set of guidelines for child physical and sexual abuse treatment from the Department of Justice.[138] This review will further help clinicians and other decisionmakers by providing a next step in understanding effective treatments with a comprehensive, systematic review of the comparative benefits and harms of evidence-based intervention with children exposed to maltreatment.

We used a Population, Intervention, Comparators, Outcomes, Timing, and Settings (PICOTS) framework to define these elements for the review (see Methods for a complete description of the PICOTS for this review). Specificity in defining each element in the PICOTS framework is a critical step in assuring that a systematic review yields generalizable findings. The chief concern in defining the PICOTS with high specificity is to address the problem of clinical heterogeneity or "the variation in study population characteristics, coexisting conditions, cointerventions, and outcomes evaluated across studies included in a systematic review that may influence or modify the magnitude of the intervention measure of effect."[139, p. 6] The complexity of maltreatment exposure presented particular challenges related to clinical heterogeneity for this review, and this problem ultimately necessitated limitations in scope.

A major priority for this review was assuring its relevance to real-world practice and policy by capturing to some extent the heterogeneity inherent in the intervention research literature. Thus, we focus on (1) children who represent a range of symptom expression or children for whom symptomatology is not reported; (2) diverse exposure experiences in type, severity, developmental timing and chronicity, as well as children whose specific maltreatment experiences are not reported; and (3) different caregiving contexts (e.g., living at home with the biological parent who perpetrated the abuse or neglect or living in out-of-home care). Given these broad inclusion criteria, the EPC team imposed an age cutoff of 14 years so as to exclude from the population youth whose developmental capabilities and needs are distinct from those of younger children. Additionally, due to concerns about heterogeneity, we elected to exclude intervention studies that focused on primary or secondary prevention (i.e., populations in which the maltreatment exposure was not indicated or substantiated or the description of the study population was too vague to make a determination).

Defining and classifying relevant interventions for this review also presented major challenges because of their diversity. These include clinical treatments such as psychotherapy or psychosocial approaches with the child, parent, and/or child-parent together and

pharmacotherapy; training programs with biological or foster parents delivered through the child welfare system; and service delivery approaches or strategies at the system level to improve the quality of care for children and their caregivers and families. Through the literature review process we determined that system- or service-delivery level approaches were qualitatively distinct from discrete clinical interventions in terms of the degree of specificity regarding core treatment components and their implementation and specificity about the population. Ultimately the EPC determined that including both clinical and system- or service-delivery level studies was beyond the scope of a single review.

Need for Comparative Effectiveness of Interventions for Maltreated Children

Currently no national guidelines inform the selection of interventions for improving child well-being and child welfare outcomes for children who have been exposed to maltreatment. Although numerous resources and evidence-based registries exist to which caregivers, clinicians, policymakers, and other decisionmakers can turn to for guidance on selecting and supporting treatments for maltreated children, differences in the rating schemas and approaches across these resources can present conflicting information that is confusing for consumers. Because consumers may not be aware of all resources available in the field or of important differences across the available resources, their decisions may not be fully informed.

Absent clear guidance on efficacious or effective treatment interventions with this population, at least one controversial approach with the potential to cause serious harm has been publicized and disseminated. “Holding” or containment therapy is an alternative child mental health therapy intended to treat attachment disorders; it has resulted in at least six documented fatalities.[140] In 2006, the American Professional Society on the Abuse of Children published a task force report critical of coercive practices in therapy promoted as forms of attachment therapy.[140] In April 2007, the Association for Treatment and Training in the Attachment of Children formally adopted a white paper stating its unequivocal opposition to the use of coercive practices in therapy, while advocating attunement, sensitivity, and regulation-focused techniques.[141]

Key Questions

1. What is the comparative effectiveness of interventions with children exposed to maltreatment for promoting child well-being? Specifically:
    a. Mental and behavioral health
    b. Healthy caregiver-child relationship (e.g., secure attachment; increased caregiver responsivity and sensitivity; positive parental attitudes toward childrearing; positive parental perceptions of the child and causal attributions about the child’s behavior; decreased negative parent-child interactions; increased family functioning)
    c. Healthy development (e.g., cognitive, language, physical maturation)
    d. School-based functioning (e.g., grade retention, disciplinary referrals, attendance).
2. What is the comparative effectiveness of interventions with children exposed to maltreatment for promoting child welfare outcomes? Specifically:
    a. Safety (i.e., prevention of maltreatment recurrence)
    b. Placement stability

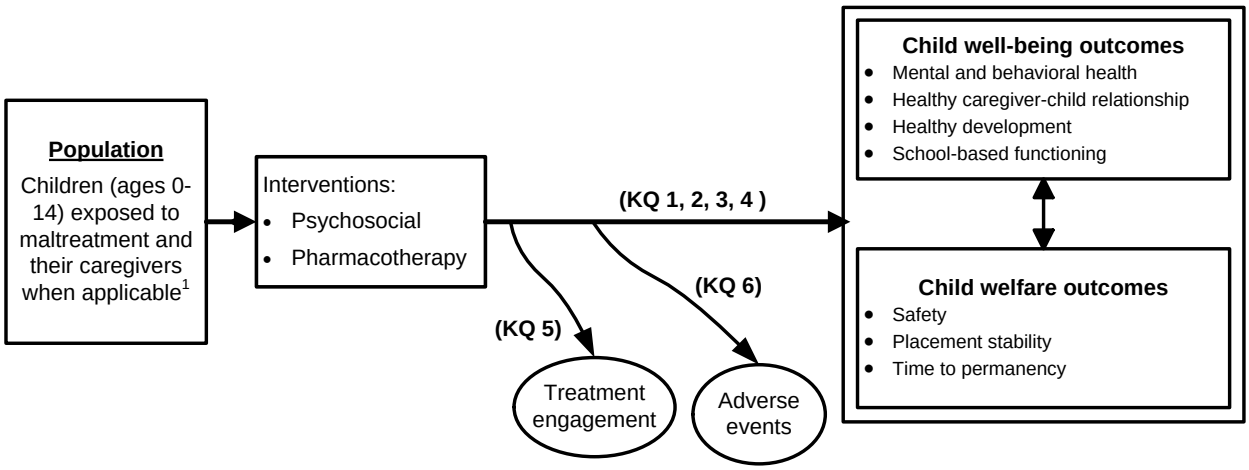
    c. Permanency.
3. Among the interventions under review, how do interventions with particular characteristics compare in improving child outcomes. Intervention characteristics may include:
    a. Modality (i.e., individual, dyadic, group, family-based)
    b. Theoretical orientation (e.g., cognitive behavioral, psychodynamic)
    c. Type of setting (i.e., specialty or nonspecialty service-delivery settings).
4. How do interventions compare for improving child outcomes within population subgroups? Population subgroups comprise the following:
    a. Child subgroups
        i. Age and other sociodemographic subgroups (e.g., race, ethnicity, sex)
        ii. Type of maltreatment exposure (e.g., neglect, physical abuse, sexual abuse)
        iii. Severity of maltreatment exposure
        iv. Presence of mental or behavioral health problems (e.g., complex traumatic stress disorders, serious emotional disturbance) or other special needs (e.g., failure to thrive, prenatal substance exposure).
    b. Caregiver subgroups
        i. Primary caregiving context: biological parent; foster, kin (relative), or adoptive caregivers; residential program or group home)
        ii. Presence of mental health problems, substance abuse, or domestic violence
        iii. Sociodemographic groups (e.g., age, race, ethnicity, sex).
5. What is the comparative effectiveness of interventions with children exposed to maltreatment for engaging children and/or caregivers in treatment (e.g., treatment adherence, treatment withdrawal)?
6. What adverse events are associated with interventions for children exposed to maltreatment (e.g., retraumatization, caregiver distress)?

Analytic Framework

Figure 1 presents the analytical framework for this review. This framework is a conceptual model that guided the analyses for this CER; key questions (KQs) are noted as appropriate to the linkages in this model.

The populations included in this review are children and young adolescents who have been exposed to maltreatment. Caregivers are also included in the population when the intervention targets the parent or includes a caregiver-directed component. KQ 1 assesses the effectiveness of the interventions reviewed in improving child outcomes, specifically mental and behavioral health and other aspects of healthy development such as physical, language and cognitive development, the quality of the caregiver-child relationship, and school-based functioning. KQ 2 assesses outcomes that are of specific interest to the child welfare system: safety (i.e., maltreatment recurrence), placement stability while in out-of-home care, and permanency (e.g., successful permanent placement; time to permanency). The efficacy of interventions in important population subgroups is compared in KQ 4, while differences in efficacy by intervention characteristics such as theoretical orientation and modality are reviewed in KQ 3. KQ 5 assesses the evidence on treatment adherence, and KQ 6 reviews the literature on adverse events associated with treatment.

Figure 3. Analytic framework for comparative effectiveness of interventions for child maltreatment



[1]Population may include the child's primary caregiver(s) when the intervention targets the caregiving context.

For the purpose of this review, caregiver-level outcomes (e.g., parenting attitudes, parenting practices, family functioning, and caregiver emotional well-being) are treated not as mediators of child outcomes but as indicators of the quality of the *caregiver-child relationship* outcome. We treat caregiver outcomes as such because the quality of the caregiver-child relationship is inherent to child well-being;[10] additionally, analyzing mediating and moderating results was beyond the scope of this CER.

Organization of this Report

The remainder of this review describes our methods in detail, documents our results, and provides a discussion of our findings and recommendations for filling important research gaps. Appendixes provide details of the search strategy (Appendix A), forms used for review and abstraction (Appendix B), studies excluded at the full-text review stage (Appendix C), risk of bias ratings (Appendix D), comprehensive evidence tables (Appendix E), and a summary of strength of evidence grades for KQ 1 (Appendix F).

Methods

We conducted this review using the research methods described in the Agency for Healthcare Research and Quality (AHRQ) Methods Guide for Effectiveness and Comparative Effectiveness Reviews.[142] Further, we used the PRISMA Statement[143] as a guide to ensure transparent reporting.

Topic Refinement and Protocol Review

The EPC developed this topic and key questions through a public process. The topic was nominated through an online public forum and subsequently developed and refined by a team at the EPC with input from Key Informants in the field. AHRQ posted key questions for public comment (3/18 to 4/15/2011). The EPC incorporated public comments and guidance from a Technical Expert Panel into the final research protocol, which was also posted on the AHRQ Web site (11/15/2011).

Literature Search Strategy

Search Strategy

We systematically searched, reviewed, and analyzed the scientific evidence for each key question. We conducted focused searches of MEDINE (via PubMed), Social Science Citation Index (SSCI), PsycInfo, and the Cochrane Library. An experienced research librarian used a predefined list of search terms and medical subject headings (MeSH). The librarian completed the first search on 9/29/2011 and an update search on TBD. We limited searches to publications from 1990 and later to ensure clinical relevancy. We limited the search to studies published in English, based on limited resources. The complete search strategies, including specific limitations used for each database, are presented in Appendix A.

To build on the work of the existing evidence-based registries and databases on interventions for children, we searched the following registries for relevant peer-reviewed articles that the systematic literature search may have missed:

- National Child Traumatic Stress Network's Empirically Supported Treatments and Promising Practices[95]
- California Evidence-based Clearinghouse for Child Welfare[99]
- National Registry of Evidence-based Programs and Practices[96]
- Office of Juvenile Justice and Delinquency Prevention Model Programs Guide[98]
- Center for the Study and Prevention of Violence Program Database.[144]

We searched unpublished and grey literature relevant to the review. Methods for identifying grey literature included a review of trial registries, specifically ClinicalTrials.gov, Health Services Research Projects in Progress (http://www.nlm.nih.gov/hsrproj/), and the European Union Clinical Trials Register (https://www.clinicaltrialsregister.eu/). Further, AHRQ requested Scientific Information Packets from the developers and distributors of the interventions identified in the literature review. Scientific Information Packets allow an opportunity for the intervention developers and distributors to provide the EPC with both published and unpublished data that they believe should be considered for the review. We included unpublished studies that

met all inclusion criteria and contained enough information on the research methods used for the risk of bias assessment.

Lastly, we searched reference lists of review articles that are pertinent but did not meet inclusion criteria for studies that we should consider for inclusion in this review.

Inclusion and Exclusion Criteria

Table 4 outlines the Population, Intervention, Comparators, Outcomes, Timing, and Settings (PICOTS) that define the major inclusion criteria for studies in this review. In the sections following the table, we provide additional detail regarding each of these domains.

Table 7. Inclusion and exclusion criteria

Domain	Description
Population	• Children ages 0 to 14 years exposed to child maltreatment (and their caregivers when applicable) For this review, we will use the definition of *maltreatment* provided by the Centers for Disease Control and Prevention[22]: • *Child abuse*: words or overt actions that cause harm, potential harm, or threat of harm to a child • *Child neglect*: failure to provide for a child's basic physical, emotional, or educational needs or to protect a child from harm or potential harm; privation (conditions of severe social deprivation). • The population may include the child's primary caregiver(s) when the intervention targets the caregiving context. The primary caregiver is defined as the biological parent; foster, kinship (relative), or adoptive caregiver; or caregivers in a residential program or group home. • Children in foster care with unspecified maltreatment exposure will be included in this review. When maltreatment exposure is specified in a study population of children in foster care, only those studies in which ≥80% of the sample is exposed will be included. We exclude studies that target children who are known to have been placed in out-of-home care because the child's own behavior or condition posed a threat to their community or was beyond the control of his or her family (e.g., youth referred or mandated by the juvenile justice system to out-of -home placement because of multiple criminal offenses and children with serious emotional disturbance and no involvement with the child welfare system). • Child subgroups are defined by age, type of maltreatment exposure, severity of maltreatment exposure; presence of child behavioral and mental health problems; and sociodemographic groups (race, ethnicity, and sex). • Caregiver subgroups are defined as caregiving context (i.e., primary caregiver/environment, presence of caregiver substance abuse or other mental health disorders, caregiver sociodemographic characteristics [age, race, ethnicity, and sex]).
Interventions	• Clinical interventions that aim to prevent, ameliorate, or improve mental health symptoms, behavior problems, or psychopathology; optimize child development and functioning; and/or improve child welfare outcomes. These include: • Psychotherapy/psychosocial interventions delivered at the individual, caregiver, and/or family level (including Trauma-Focused Cognitive Behavioral Therapy, Parent-Child Interaction Therapy [PCIT], Attachment and Biobehavioral Catch-up [ABC], the Incredible Years); • General and specific types of pharmacotherapy (e.g., selective serotonin reuptake inhibitors [SSRIs]). • Strategies or approaches to improve the system of care for maltreated children and caregivers at the service-delivery or organizational level are excluded. Examples include intensive family preservation or reunification service models, solution-focused/based casework,differential response, and routine preservice foster parent training programs.

Table 4. PICOTS for study inclusion (continued)

Domain	Description
Comparator	• The comparison condition as defined in the respective studies. Active controls are comparison groups that receive another structured intervention. Inactive controls are comparison groups that do not receive another structured intervention and include wait-list groups and usual care groups.
Outcomes	**Child well-being outcomes** • Child mental and behavioral health—e.g., prevention of or reduction in severity or number of traumatic stress symptoms or syndromes; post-traumatic stress disorder; attachment disorders; depressive symptoms; anxiety symptoms; disruptive, aggressive, and delinquent behavior; • Healthy caregiver-child relationship—e.g., secure attachment; increased caregiver responsiveness to the child and sensitivity; positive attitudes towards childrearing; positive perceptions of the child and causal attributions about the child's behavior; decreased negative parent-child interactions; increased family functioning; • Healthy development—e.g., cognitive, language, and physical; • School-based functioning. (e.g., grade retention, disciplinary referrals, attendance) **Child welfare outcomes** • Safety—e.g., prevention of maltreatment recurrence or reduced number of subsequent involvements with child protective services; • Placement stability for children in foster care; • Positive permanency outcomes for children in foster care. **Treatment engagement and adherence** • Readiness or motivation to engage in an intervention; • Treatment completion. **Adverse events** • Retraumatization; • Caregiver distress
Timing	• Short-term duration: postintervention (i.e., at treatment completion) to <6 months; • Long-term duration: ≥6 months after treatment completion.
Setting	• Studies conducted in the United States or internationally; • Interventions provided in both specialty service delivery settings (e.g., outpatient and inpatient mental health care settings) and nonspecialty service delivery settings (e.g., schools, community-based providers, shelters, prison or diversion programs); • Home-based settings and out-of-home care (e.g., foster care, residential treatment, group settings).

Population

The population of interest for this review included children ages 0 to 14 years exposed to maltreatment (using the definitions below), children of the same ages in foster care, and caregivers of maltreated children when they were the target of an intervention. We excluded adolescents older than 14 years of age because of concerns about the heterogeneity of the population. Older adolescence represents a markedly distinct developmental period in physical, cognitive, emotional, and social capacities and challenges—including significant independence, the ascendancy of adolescent peers as a key reference group, and increasingly complex interpersonal relationships. The American Academy of Pediatrics' Bright Futures Guidelines for Health Supervision for Infants, Children, and Adolescents differentiates "early adolescence" (11 to 14 years) from "middle adolescence" (15 to 17 years).[145]

We used the following definitions for child maltreatment and sexual abuse:

- Child maltreatment—the definition provided by the Centers for Disease Control and Prevention[22] includes both child abuse (acts of commission: words or overt actions that cause harm, potential harm, or threat of harm to a child) and child neglect (acts of

commission: failure to provide for a child's basic physical, emotional, or educational needs or to protect a child from harm or potential harm). The harm to a child may or may not be the intended consequence.[22]

- Sexual abuse—the definition provided by the Child Abuse Prevention and Treatment Act[23] is the employment, use, persuasion, inducement, enticement, or coercion of any child to engage in, or assist any other person to engage in, any sexually explicit conduct or simulation of such conduct for the purpose of producing a visual depiction of such conduct; or the rape, and in cases of caretaker or interfamilial relationships, statutory rape, molestation, prostitution, or other form of sexual exploitation of children, or incest with children.[23]

We included studies with children whose maltreatment was substantiated or indicated or who were explicitly identified by the study authors as having been maltreated. Due to concerns about heterogeneity, we excluded studies comprising a "mixed" population of maltreated children/maltreating families along with children or families identified by child welfare or other agencies, professionals, or through self-referral as being 'at risk' of abuse or neglect. However, we included studies with a mixed population if the results were stratified by maltreatment status. Studies with children in foster were included, given that the majority of children in foster care have been exposed to abuse or neglect and strong association between other risk factors for removal and abuse or neglect (e.g., parental substance abuse; domestic violence). Studies that targeted children in maltreating families were included, even if the index child was not identified as abused or neglected.

Intervention

For Key Questions (KQs) 1 to 4, and KQ 6, interventions of interest included those with the following aims: prevent, ameliorate, or improve mental health symptoms, behavior problems, or psychopathology; optimize child development and functioning; and/or improve child welfare outcomes. Clinical interventions included in this comparative effectiveness review (CER) include both psychosocial and pharmacotherapy approaches delivered at the individual, child-caregiver (dyadic), and/or family level to address the mental and behavioral health needs of the child and/or the quality of the child-caregiver relationship in support of the child's emotional well-being. Relevant psychosocial interventions include specifically defined treatment components and may also include supportive services such as crisis management and concrete assistance. Due to issues of scope and heterogeneity, strategies or approaches to improve the system of care for maltreated children and caregivers at the service-delivery or organizational level—which were originally considered for inclusion in this review—are excluded. Examples include:

- Intensive family preservation or reunification service models such as Homebuilders®, solution-focused/-based casework (an approach to assessment, case planning, and case management), differential response (i.e., an alternative assessment model offered by child protective services agencies to families reported for child abuse and neglect depending on the severity of the allegation), and routine preservice foster parent training programs.
- Financial support, respite care, peer support groups, and other general categories of services provided to families by the child welfare system;

- Systems integration strategies such as interagency collaboration and enhanced case management procedures;
- Policy-level interventions such as subsidized guardianship;
- Court improvement strategies such as accelerated case review, court-appointed child advocates, and programs to increase family engagement in the dependency or drug court treatment plan;

For studies involving populations with mental health symptoms, general and specific types of pharmacotherapy are relevant treatment approaches (e.g., selective serotonin-reuptake inhibitors [SSRIs]). For KQ 5, we included interventions with the goal of increasing participant engagement to increase retention and patient adherence.

Only interventions that have been studied comparatively with maltreated children are included in this review. Many interventions are currently used in the field in a secondary prevention context with children and families at risk of maltreatment such as the Nurse Family Partnership and Early Head Start-Home-Visiting programs. Other interventions represented in the literature may be relevant for preventing recurrence in families in which maltreatment has already occurred (such as the Pathways Triple P strategy) but not yet studied with this population or studies included a mixed population of maltreated and at-risk families.

Comparators

All studies included in this CER had at least two arms. We excluded studies that did not directly compare two interventions with one another. We also excluded studies that analyzed differences between three or more groups but did not report the results of pairwise comparisons.

Acceptable comparisons included control groups such as usual care or a wait-list strategy. In addition to wait list control or usual care, comparators included (a) approaches representative of conventional practice in the field (such as child-centered therapy, support groups, and family therapy), and (b) derivations of interventions (wherein the degree to which core components of the original model are implemented is unclear and/or core components are omitted or substantively modified). By adaptation, we refer to approaches that maintained the integrity of the original intervention (e.g., with minor modifications to the curriculum or manual and/or supplemental components). By derivation, we refer to approaches wherein the authors do not specify the degree to which the original model was implemented and/or modify the core components.

By contrast, we excluded some studies for reasons other than high risk of bias. For example, a study comparing an intervention with maltreated children to that same intervention with nonmaltreated children would be excluded because the comparison was not of interest. Further, studies comparing the same intervention in two different caregiving contexts were excluded.

Outcomes

All child well-being outcomes that studies reported were assessed using measures for which psychometric data on reliability and validity (beyond face validity) are available in the extant literature. We did not include measures for which basic reliability properties were reported by the author but no further validity data could be readily found in the extant literature. For psychometric information regarding trauma-specific measures, we consulted the National Child Traumatic Stress Network's Measures Review Database. We present the list of included

measures in Table 5. As noted in the Introduction, we treat parent-level variables as indicators of the *healthy caregiver-child relationship* outcome in KQ 1. In our results, we differentiate parent self-report outcomes such as attitudes towards corporal punishment, perceptions of child behavior, and parenting practices from direct and objective measures of the quality of the caregiver-child relationship (observations of parent-child interaction and child attachment behavior).

Table 8. Included measures

Outcome	Measures
Mental and Behavioral Health	Child Behavior Checklist Child Report of Post-traumatic Symptoms Child Sexual Behavior Inventory Children's Depression Inventory Coping Inventory Cortisol (salivary) values Eyberg Child Behavior Inventory Life Satisfaction Survey Parent Daily Report Parent Report of Post-traumatic Symptoms Post Traumatic Stress Symptoms Scale Preschool Age Psychiatric Assessment Revised Behavioral Problem Checklist Rutter Teacher Scale Schedule for Affective Disorders and Schizophrenia for School-Aged Children Present and Lifetime Version Self-Perception Profile for Children State-Trait Anxiety Inventory for Children Sutter-Eyberg Student Behavior Inventory-Revised Trauma Symptom Checklist for Children
Healthy Caregiver-Child Relationships	Direct: Strange Situation procedure HOME: Home Observation Measure of the Environment Child Autonomy Observational Scale Parenting Skills Observation Scale Indirect: Adult Adolescent Parenting Inventory Alabama Parenting Questionnaire – Child Alabama Parenting Questionnaire – Parent Beck Depression Inventory Child Abuse Potential Inventory Conflict Tactics Scale – revised Family Assessment Form Family Functioning Style Scale Impact of Events Scale (caregiver version) MacArthur Story Stem Batteryand Narrative Coding Manual-Rochester Revision McMaster Family Functioning – General Functioning Scale Parent Practices Questionnaire Parenting Locus of Control Scale Parenting Practices Interview Parenting Self-Agency Measure Symptom Checklist – Revised (caregiver)
Healthy Development	Bayley Scales of Infant Development Wechsler Preschool and Primary Scale of Intelligence Peabody Picture Vocabulary Test Flanker Task

For KQ 2, we included child welfare outcomes using administrative data from the child welfare system. For KQ 6, an adverse event is defined as a "harmful or undesirable outcome that occurs during or after the use of a drug or intervention but is not necessarily caused by it" . We did not require a validated measure for assessment of adverse events; however, we did require active surveillance of harms.

Timing

We included studies reporting short- or long- term outcomes as defined by the authors. We included end-of-intervention results as well as any follow-up data. Intermediate measures, that is, assessments made between baseline and completion of the intervention, are not included in the report.

Setting

We did not exclude studies based on geography or the setting of service provision.

Study Designs

To identify appropriate study designs, the research team used the algorithm developed by the Alberta Evidence-based Practice Center.[146] Table 6 describes the study design inclusion criteria developed for this report.

Table 9. Study inclusion criteria

Category	Criteria for Inclusion
Study design	Systematic reviews, randomized controlled trials, nonrandomized controlled trials, prospective and retrospective cohort studies, and case-control studies
Sample size	N≥10
Study location	United States and international Clinics, community-based agencies, and home-based

Study Selection

Two trained members of the research team independently reviewed all titles and abstracts identified through searches for eligibility against predefined inclusion and exclusion criteria. Studies marked for possible inclusion by either reviewer underwent a full-text review. Each full-text article was again independently reviewed by two trained members of the team to determine if it met inclusion criteria. If it did not meet inclusion criteria, each reviewer recorded the reason for exclusion and they later resolved the disagreement by consensus discussion. The reviewers consulted a third party if they were unable to reach a consensus. The full-text review form reviewers used is reproduced in Appendix B. If both reviewers agreed that a study did not meet the eligibility criteria, it was excluded. If the reviewers disagreed, they resolved conflicts by discussion and consensus or by consulting a third member of the review team. The project coordinator tracked results of the abstract and full-text reviews in an EndNote database. Appendix C contains a complete list of studies excluded during the full-text review, denoted by their primary reason for exclusion.

We screened unpublished studies identified through grey literature search and the review of Scientific Information Packets using the same title/abstract and full-text review processes.

Data Extraction

A template for evidence tables to be used for data synthesis was developed using the PICOTS framework. For studies that met inclusion criteria, we abstracted relevant information into these evidence tables using Microsoft Excel. We abstracted characteristics of study populations, interventions, comparators, settings, study designs, methods, and results. One trained reviewer initially abstracted the relevant data from each included article and a second member of the team reviewed each data abstraction against the original article for completeness and accuracy.

Risk of Bias Assessment

For each included study, we assessed the potential for selection bias, performance bias, attrition bias, detection bias, and reporting bias. Two independent reviewers rated the risk of bias for each study. Disagreements between the two reviewers were resolved by discussion and consensus or by consulting a third member of the team.

Results of this assessment are summarized in a rating of low, medium, or high risk of bias. In general, a study with a low risk of bias has a strong design, measures outcomes appropriately, uses appropriate statistical and analytical methods, reports low attrition, and reports methods and outcomes clearly and precisely. Studies with a medium risk of bias are those that do not meet all criteria required for low risk of bias but do not have flaws that are likely to cause major bias. Examples include differences in groups at baseline, high overall attrition, or high differential attrition across study conditions. Studies with a high risk of bias include those with at least one major issue that has the potential to cause significant bias and thus might invalidate the results. To maintain a focus on the best available evidence, we opted to exclude studies with a high risk from the results chapter of this CER. We list each study rated as high risk of bias along with the reason it was rated such in Appendix D.

Data Synthesis

We analyzed the data qualitatively. Across studies, the populations, interventions, and outcome measures used were heterogeneous and did not lend themselves to a pooled analysis.

The results chapter of this review is organized by KQ. For each question we have two sections: key points and detailed synthesis. The key points section summarizes the results for each outcome in the KQ; the detailed synthesis section describes the study results.

In the detailed analysis section we report key features of the study and the results for each construct analyzed. Two tables accompany the study narrative, one table outlining key study characteristics and a second summarizing the study results. The study characteristics table provides the study design, sample size (at baseline), comparison groups, and the risk of bias rating. The results table summarizes the within- and between-group differences in the construct measured over time or at the study endpoint. Data on magnitude of effect is also included in the results tables. We report magnitude of effect data provided by authors in the studies reviewed. We did not perform additional effect size calculations with the exception of one study that provided the effect size without the significance level.

Given the complexity of our analyses, we adopted some conventions for presenting comparative data (Table 7). Statistically significant *within-group* changes are indicated by a superscript “+”or “-”; a “+” indicates improvement on the construct measured; a “-” indicates a detriment. In addition, we designate nonsignificant results with “ns.” Significant *between-group*

differences are indicated by a "<" or ">" between group one and group two. If a study found no between-group differences, we will say "no differences between G1 and G2."

Table 10. Intervention A versus usual care, results (sample table)

First Author, Year	Comparison Groups	Mental Health Outcomes
Jones et al., 2002	G1: Intervention A G2: Usual care	**Changes in Overall Mental Health and Behavior** *(Child Behavior Checklist)* No difference between $G1^{+}$ and $G2^{ns}$ p=0.66 **Changes in Depression** *(Children's Depression Inventory)* $G1^{+} > G2^{-}$ p=0.04
Jones et al., 2003	G1: Intervention A G2: Usual care	**Changes in Traumatic Stress Symptoms** *(Trauma Symptoms Checklist for Children)* G1>G2 p=NR (sig)

Abbreviations: NR = Not reported; sig = significant; + = within-group improvement over time $p \leq 0.05$; - = within-group detriment over time $p \leq 0.05$; ns = within-group change over time $p > 0.05$

Table 3 shows that, in Jones et al., 2002, the overall mental health and behavior of participants in G1 improved significantly over time while members of G2 did not change significantly on these outcomes. The between-group differences in change over time were not significant (p= 0.66) for this measure. On a measure of depression, G1 showed significant improvements while G2 showed a significant detriment. The between-group differences in change over time (G1>G2) were significant for this measures (p=0.04), favoring participants in Group 1. In Jones et al., 2003, children in G1 exhibited a significantly greater improvement in traumatic stress symptoms than children in G2 (p=NR, within-group change not reported).

Strength of the Body of Evidence

In the key points section we present the strength of evidence for each comparison and overarching outcome (e.g., mental health and behavior) as defined by the key questions. We graded the strength of evidence based on the guidance established for the AHRQ EHC Program for the Evidence-based Practice Centers to follow, as detailed in a recent paper by Owens and colleagues.[147] The EPC approach incorporates four key domains: risk of bias, consistency, directness, and precision of the evidence.

- Risk of bias is determined according to the "degree to which the included studies for a given outcome or comparison have a high likelihood of adequate protection against bias." It is graded as high, medium, or low.
- Consistency is the "degree to which reported effect sizes from included studies appear to have the same direction of effect." It is graded as consistent or nonconsistent. Consistency cannot be assessed when a body of evidence has only a single study (unknown or not applicable). When a body of evidence includes both consistent and inconsistent findings, the presence of one or more consistent findings will result in a "consistent" grade for the outcome of interest.
- Directness is determined based on "whether the evidence links the interventions directly to health outcomes." It is graded direct or indirect. In this report, healthy caregiver-child relationship outcomes were predominantly indirect; many measures assessed outcomes

indirectly related to the caregiver-child relationship (e.g., parent attitudes toward discipline; parent related stress) rather than direct observations of parent-child interaction or child attachment behavior. When a body of evidence includes both indirect and direct measures, the presence of one or more direct measures will result in a "direct" grade.

- Lastly, precision is determined according to "the degree of certainty surrounding an effect estimate." for each outcome separately. "Precise" indicates a clinically useful conclusion that is statistically significant, and "imprecise" indicates that no conclusion can be drawn as to whether either treatment is superior or whether the treatments are equivalent.
-

The overall grades for strength of evidence, based on the scores for the above domains, are described in Table 8. Grades reflect the strength of the body of evidence to answer the KQs on the comparative effectiveness, efficacy, and harms of the interventions in this review.

Two reviewers assessed each domain independently and also assigned an overall grade for each key outcome listed in the framework; they resolved any conflicts through consensus discussion. If a consensus was not met, the team brought in a third party to settle the conflict.

Table 11. Definitions of the grades of overall strength of evidence

Grade	Definition
High	High confidence that the evidence reflects the true effect. Further research is very unlikely to change our confidence in the estimate of effect.
Moderate	Moderate confidence that the evidence reflects the true effect. Further research may change our confidence in the estimate of the effect and may change the estimate.
Low	Low confidence that the evidence reflects the true effect. Further research is likely to change our confidence in the estimate of the effect and is likely to change the estimate.
Insufficient	Evidence either is unavailable or does not permit estimation of an effect.

Source: Owens et al., 2010[147]

Applicability

We assessed the applicability both of individual studies and of the body of evidence.[147] For individual studies, we examined conditions that may limit applicability based on the PICOTS structure. Examples of characteristics examined include:

Population

- Narrow eligibility criteria, or exclusion of patients with comorbidities;
- Large differences between demographics of the study population and community patients.

Intervention

- Intensity and delivery of interventions that may not be feasible for routine use;
- Highly selected intervention team or level of training/proficiency not widely available.

Comparators

- Comparison group does not represent an available alternative treatment.

Such conditions may be associated with heterogeneity of treatment effect and the ability to generalize the effectiveness of an intervention to use in everyday practice. We abstracted key characteristics of applicability into evidence tables.

During data synthesis, we assessed the applicability of the body of evidence using the abstracted characteristics. KQ 4 includes a detailed analysis of intervention efficacy in population subgroups.

Peer Review and Public Commentary

Experts in children's mental health, specifically psychosocial development, maltreatment exposure, and evidence-based interventions, were invited to provide external peer review of this CER. AHRQ and an associate editor also provided comments. The draft report was posted on the AHRQ Web site for 4 weeks to elicit public comment. We responded to all reviewer comments and noted any resulting revisions to the text in the "Disposition of Comments Report." This report will be made available 3 months after the final CER is the posted on AHRQ Web site.

Results

Introduction

This chapter presents the results of the literature searches, followed by results for each key question (KQ). KQ 1 presents evidence on mental and behavioral health, caregiver-child relationship, and developmental outcomes (no study addressed school functioning). KQ 2 presents evidence for outcomes relevant to the child welfare system: safety, placement stability, and permanency. KQ 3 (on intervention characteristics), KQ 4 (on subgroups of the population), and KQ 6 (on adverse effects) are cross-cutting questions that draw upon available evidence from KQ 1 and KQ 2. KQ 5 presents evidence on how interventions compare on treatment engagement (that is, motivation or readiness to engage in an intervention and treatment adherence).

In each section in the Results chapter, we present a subsection listing key points and strength of evidence grades for each outcome relevant to the KQ in question, referring to the specific constructs to which the evidence pertains. The key points distinguish "insufficient" grades for (a) bodies of evidence in which some research exists on the outcomes but is insufficient to make a call on the strength and (b) bodies of evidence for which no research exists. We support the analysis for each comparison with a summary table under key points showing overall findings, which also notes the study population (age range and caregiver type) for which the intervention was evaluated. We order the results in the summary tables by strength of evidence, taking into consideration the size of the body of evidence, magnitude of effect, and duration of intervention outcomes. For many trials, the age range spans more than one developmental period (that is, the intervention was assessed for children in early childhood (ages 0 to 5), middle childhood (ages 6 to 10), and early adolescence (ages 11 to 14). These tables order comparisons by strength of evidence grade (that is, from the highest grade to insufficient).

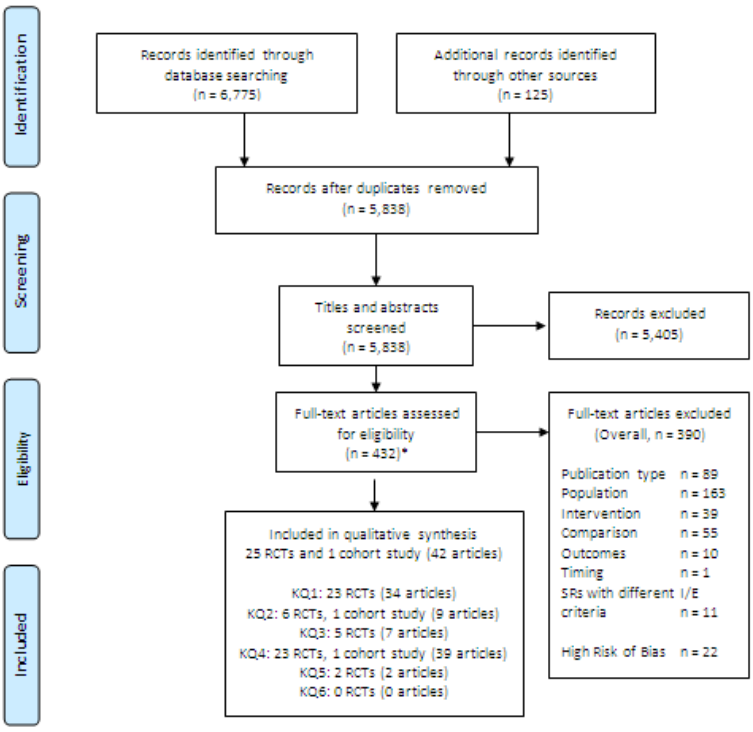
In each section we also present detailed synthesis subsections that follow key points in which we briefly describe the intervention and comparator and summarize the results of each comparison. The detailed synthesis provides a table describing the study characteristics of each trial, including the risk of bias rating (Appendix D presents detail about the risk of bias ratings for each study). We also provide a second table summarizing the between-group differences in changes and differences at study endpoint as well as effect sizes and confidence intervals (as available). Confidence intervals (CIs) for estimates of parameters, functions of parameters (e.g., differences in means), or effect sizes were rarely reported in the studies included in this review. The absence of CIs reflects the general trend of infrequent reporting of relative risk and odds ratios in the literature on intervention evaluations compared with research in the health sciences. Within the results tables, we illustrate between-group differences with a statement noting which group did better (i.e., greater ">"). We illustrate statistically significant within-group changes for each study as an improvement ("+"), a detriment ("-"), or a nonsignificant change ("NS") for studies that provided these data. The evidence tables in Appendix E include detailed results for each study.

Results of the Literature Searches

The results of literature searches are presented in Figure 2. Our initial universe of articles (unduplicated) totaled 5,838; we excluded 5,405 at the title and abstract review stage. For the 432 articles reviewed at the full-text stage, we eliminated 390 for a variety of reasons. We

recorded the reason for excluding full-text publications; Appendix C lists these, organized by reason for exclusion. The most common reasons for exclusion at the full text level were (1) if the study's focus was on children at-risk for maltreatment, or a mixed population of children/families at-risk of exposure/perpetration of abuse or neglect combined with children/families wherein the maltreatment had already occurred (wrong population), (2) systems- or service-delivery level approaches (wrong intervention), or (3) a lack of a comparison group (wrong comparison). After assessing risk of bias for all included studies (before data abstraction), we eliminated studies that we rated high risk of bias. This left a total of 26 studies, reported in 42 articles, which were assessed as either medium or low risk of bias. We found no articles for KQ 6 on adverse events.

Figure 4. Results of Literature Searches on Interventions for Child Maltreatment



*We were unable to retrieve the full text of one article

Overall Description of Studies

Of the 25 trials, three were head-to-head comparative investigations.[90, 91, 110] Nine were comparisons only with usual care[78, 83-86, 94, 114-116, 118-120, 124, 126-128] or wait list control.[77, 81, 82] We encountered two studies in which the comparator was not readily categorized. The first was a study that described an "assessment only" condition; although the children in this condition likely received treatment as usual, we refer to the comparator as an inactive control.[106] The second study compared children who received a supplemental intervention, in addition to an ongoing base intervention, to a control group receiving only the base intervention; we did not consider this a true head-to-head trial because the comparison was not presented as such by the authors.[111] Thirteen trials had "active comparators."[74-76, 79, 80, 88, 89, 101, 105, 113] We categorized the active comparators as either interventions representative of *conventional practices* in the field (family, child-centered, or supportive group therapy) (used in three trials),[88, 89, 101, 113] or *derived approaches*.[74-76, 79, 80, 100, 105, 112] The derived comparators were either (a) modified versions of the original model or did not appear to maintain core components with fidelity (used in five trials),[74-76, 79, 80, 105] or (b) developed to control for nonspecific aspects of the experimental intervention (two trials).[100, 112] With respect to Population, Intervention, Comparators, Outcomes, Timing, and Settings (PICOTS), the populations covered were children from 0 through 14 years of age, and interventions could involve biological parents, foster parents, or kin caregivers. The experimental interventions are numerous and involve both "standard" interventions and "adapted" (for maltreating families) or "augmented" (with supplemental components) variants. We did not identify any eligible studies on pharmacotherapy interventions for inclusion. The interventions varied considerably in intensity, from as few as eight sessions to as many as 50 sessions over the course of a year (see Appendix E). We identify interventions in the results as low intensity ($\leq$ 12 weekly sessions or approximately three months in duration), medium intensity (13 to 24 weekly sessions or approximately six months in duration), or high intensity (>25 weekly sessions or more than six months in duration). All the interventions included in the results were reported as manualized by the study authors; however, the interventions appear to vary considerably in the degree to which they are ready for dissemination. For example, some interventions have well-established training protocols that are described on a website, whereas training support for implementing other interventions (generally those evaluated in more dated studies) could not be ascertained. The outcomes are quite varied and not all trials measured all types of outcomes; the majority assessed only one category or at most two. Additionally, the types of measurement instruments varied, particularly for caregiver-child relationship and developmental outcomes. Timing of follow-up assessments ranged greatly. Settings included outpatient clinics, social service agencies, or homes (and not inpatient or nonhealth institutions such as prisons). Most of the trials were conducted in the United States; two were conducted in Canada and one in Romania.

Key Question 1: Comparative Effectiveness of Interventions for Improving Child Well-Being Outcomes

Organization

We organize KQ 1 by intervention type **(**parenting, trauma-focused, and enhanced foster care approaches), as described in Tables 1 through 3). Each subsection presents the key points pertaining to the intervention type, which summarizes the main findings for each comparison and

the strength of evidence grade. Following the key points, a detailed synthesis section provides information about the experimental intervention and comparator of each study and detail regarding study characteristics and results.

Description of Included Studies

We identified 23 RCTs (reported in 34 articles) that examined child well-being outcomes (Table 9).[74-84, 86, 88, 89, 94, 100, 101, 105, 106, 110-116, 118-120, 122, 123, 125, 126, 148] Thirteen trials evaluated parenting interventions,[74-84, 86, 88, 89, 94] 8 evaluated trauma-focused treatments,[100, 101, 105, 106, 110-113] and 2 evaluated enhanced foster care interventions.[114-116, 118-120, 122, 123, 125, 126, 148] Interventions varied by population (e.g., age of child; type of maltreatment; caregiving context), intensity, and setting (clinic- or home-based). They also overlapped in modality (i.e., whom the intervention targeted and the format of the intervention) in that interventions commonly incorporated multiple modalities (e.g., child- and caregiver-directed components; individual and dyadic sessions). Evidence tables (Appendix E) provide study details on the population, intervention, comparator, outcomes, timing, and study design.

Table 12. Numbers of trials and articles investigating child well-being outcomes by intervention type

Intervention	Trials
Parenting Interventions	**Total 13**
Attachment and Biobehavioral Catch-up[74-77]	3[a]
Attachment-based Intervention[78]	1
Child-Parent Psychotherapy[79, 80]	2
Incredible Years[81, 82]	2
Incredible Years Adaptation[83]	1
Keeping Foster and Kinship Parents Trained and Supported[84]	1
Multifamily Group Therapy[88, 89]	1[b]
Nurse Home Visitation Intervention[86]	1
Project Support[94]	1
Trauma-Focused Treatments	**Total 8**
Combined Parent-Child Cognitive Behavioral Therapy[100]	1
Eye Movement Desensitization and Reprocessing[105]	1
Fostering Healthy Futures[106]	1
Group Psychotherapy[110]	1
Play Therapy[111]	1
Trauma-Focused Cognitive Behavioral Therapy[101, 112, 113]	3
Enhanced Foster Care Interventions	**Total 2**
Bucharest Early Intervention Project (BEIP)[114-116, 118-120]	1[c]
Multidimensional Treatment Foster Care – Preschoolers (MTFC-P)[122, 123, 125, 126, 148]	1[d]
Total	23

[a]Reported in four articles

[b]Reported in two articles

[c]Reported in six articles

[d]Reported in five articles

Key Points: Parenting Interventions

Overview

- Thirteen trials of parenting interventions produced low or insufficient evidence on child well-being outcomes (Table 10).[74-84, 86, 88, 89, 94]
- One trial employed an active control group comparator representative of conventional practice in the field.[88, 89]
- Four trials employed active control group comparators that were derived approaches.[74-76, 79, 80]
- Five of 13 trials reported improvements in mental and behavioral health outcomes:[74, 75, 77, 82, 84]
  - Two trials (examining the same intervention) reported improvements in cortisol regulation, a biomarker of stress and dysregulation.[74, 75]
  - Three trials reported improvements in child internalizing and/or externalizing behavior.[77, 82, 84]
- Ten of 13 trials reported improvements in caregiver-child relationship outcomes.[76-79, 81-84, 86, 149]
  - Seven trials reported improvements based on *indirect indicators* of the caregiver-child relationship (e.g., caregiver attitudes towards parenting; parenting practices, including the use of positive discipline; caregiver report of child attachment behavior; caregiver stress and emotional distress).[76, 77, 80, 82-84, 86, 88, 89, 94, 149]
  - Three trials reported improvements based on *direct indicators* (that is, objective assessment) of parental interactional behavior or of child attachment behavior, a more direct indicator of the caregiver-child relationship.[78, 79, 81]
- No trials assessed developmental or school-based functioning outcomes.

Attachment and Biobehavioral Catch-up Versus Active Control

- **Mental health and behavioral outcomes**: Children whose foster parents participated in Attachment and Biobehavioral Catch-up exhibited more normative cortisol levels compared with an active control group (derived comparator; modified home-visiting component of an early intervention program (low strength of evidence).[74, 75]
- **Healthy caregiver-child relationship**: Foster parents who participated in Attachment and Biobehavioral Catch-up reported that their children exhibited less avoidant attachment behavior; however, no difference were found in parent report of children's secure attachment behavior (compared with the active control group described above (low strength of evidence).[76]

Table 13. Parenting interventions: Strength of evidence for child well-being outcomes[a]

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence[b] Magnitude of Effect[c]	Study Population
Attachment and Biobehavioral Catch-up	active control[d]	Mental and behavioral health	2,[74,75] 153	Low	Early childhood, foster caregiver
		Healthy caregiver- child relationship	1,[76] 46	Low	
	Wait list	Mental and behavioral health	1,[77] 58	Low Medium (Partial eta squared=0.436 or 0.511)	
		Healthy caregiver-child relationship	1,[77] 58	Low Medium or large (Partial eta squared=0.59 or 0.791)	
Keeping Foster and Kinship Parents Trained and Supported	Usual care	Mental and behavioral health	1,[84] 700	Low Small (d=0.26)	Early childhood to early adolescence, foster caregiver
		Healthy caregiver-child relationship	1,[84] 700	Low Small (d=0.29)	
Child-Parent Psychotherapy[e]	Active control[d]	Healthy caregiver child relationship	2,[79,80] 159	Insufficient	Early childhood, maltreating parent
	Usual care	Healthy caregiver child relationship	2,[79,80] 141	Low Medium to large (h=0.64 to 1.34)	
Project Support	Usual care	Healthy caregiver child relationship	1,[94] 35	Low Large (d =0.86 or 1.02)	Early to middle childhood, maltreating parent
Attachment-based Intervention	Usual care	Mental and behavioral health	1,[78] 79	Insufficient	Early childhood, maltreating parent
		Healthy caregiver child relationship	1,[78] 79	Low Small to medium (d=0.47, r=0.36 or 0.37)	
Incredible Years Adaptation	Usual care	Mental and behavioral health	1,[83] 64	Insufficient	Early to middle childhood, maltreating parent and foster caregiver
		Healthy caregiver child relationship	1,[83] 64	Low Small to medium (d=0.40 or 0.59)	
Multifamily Group Therapy	Active control[f]	Healthy caregiver child relationship	1,[88,89] 78	Low	Early childhood to early adolescence, maltreating parent
Incredible Years	Wait list[g]	Mental and behavioral health	1,[82] 45	Low Small (Êta =0.18 or 0.21)	Early to middle childhood, maltreating parent
		Healthy caregiver-child relationship	2,[81,82] 75	Low Small to Large (Êta =0.13 to 0.48)	
Nurse-Home Visitation Intervention	Usual care	Mental and behavioral health	1,[86] 163	Insufficient	Early childhood to early adolescence, maltreating parent
		Healthy caregiver child relationship	1,[86] 163	Insufficient	

[a]We order the results in the summary tables by strength of evidence, taking into consideration the size of the body of evidence (e.g., number of trials and participants), magnitude of effect, and duration of intervention outcomes.

[b]All SOE results are G1>G2 unless noted otherwise.

[c]For estimation of the magnitude of effect, we include only the statistically significant ($p<0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as: Cohen's d = 0.20, 0.50, and 0.80; Cohen's h = 0.20, 0.50, and 0.80; and correlation coefficient r = 0.10, 0.30, and 0.50.[150] When authors use Eta or partial eta squared effect sizes we use the interpretation that the authors provide. We include an effect size range when more than two effect sizes are reported. Authors did not report effect sizes for some measures.

[d]Active comparator is an approach derived from an intervention wherein the degree to which core components of the original model are implemented is unclear and/or core components are omitted or substantively modified.

[e] Intervention is a variant of Child Parent Psychotherapy developed by Ciccetti and colleagues.[79, 80]

[f]Active comparator is an approach representative of a conventional practice in the field.

[g]The comparison group for one study was an n < 10 participants.

Attachment and Biobehavioral Catch-up Versus Wait List

- **Mental health and behavioral outcomes**: Attachment and Biobehavioral Catch-up resulted in greater improvement in child internalizing and externalizing behavior compared with a wait list control group (low strength of evidence).[77]
- **Healthy caregiver-child relationship**: Attachment and Biobehavioral Catch-up resulted in greater improvement in parent attitudes and reduction in parent stress compared with a wait list control group (low strength of evidence).[77]

Attachment-based Intervention Versus Usual Care

- **Mental health and behavioral outcomes**: When the Attachment-based Intervention was compared with usual care, no statistically significant difference in child internalizing or externalizing behavior was found (insufficient evidence).[78]
- **Healthy caregiver-child relationship**: The Attachment-based Intervention resulted in improved maternal sensitivity and child attachment behavior (low strength of evidence).[78]

Child-Parent Psychotherapy Versus Active Control

- **Healthy caregiver-child relationship**: When Child-Parent Psychotherapy was compared with the active control group described above, no statistically significant difference in child attachment behavior was found.[79] Child-Parent Psychotherapy resulted in fewer negative mental representations of the caregiver-child attachment relationship compared with the active control group described above (insufficient evidence).[80]

Child-Parent Psychotherapy Versus Usual Care

- **Healthy caregiver-child relationship**: Child-Parent Psychotherapy resulted in greater improvements in attachment-related outcomes (child attachment representations, child attachment behavior) compared with usual care (low strength of evidence).[79, 80]

Incredible Years Versus Wait List

- **Mental health and behavioral outcomes**: Incredible Years resulted in greater improvement in externalizing behavior compared with a wait list control group (low strength of evidence).[82]
- **Healthy caregiver-child relationship**: Incredible Years resulted in greater improvement in parent attitudes and practices associated with child abuse and more positive interactional behavior compared with a wait list control group (low strength of evidence).[81, 82]

IY Adaptation Versus Usual Care

- **Mental health and behavioral outcomes**: When the Incredible Years Adaptation for biological-foster parent pairs was compared with usual care, no statistically significant difference in child internalizing or externalizing problems was found (insufficient evidence).[83]
- **Healthy caregiver-child relationship**: Incredible Years resulted in greater improvement in parent practices associated with child abuse compared with usual care (low strength of evidence).[83]

Keeping Foster and Kinship Parents Trained and Supported Versus Usual Care

- **Mental health and behavioral outcomes**: Keeping Foster and Kinship Parents Trained and Supported resulted in greater improvement in child externalizing behavior compared with usual care (low strength of evidence).[84]
- **Healthy caregiver-child relationship**: Keeping Foster and Kinship Parents Trained and Supported resulted in increased use of positive discipline practices compared with a wait list control group (low strength of evidence).[84]

Multifamily Group Therapy Versus Active Control

- **Healthy caregiver-child relationship**: Multifamily Group Therapy resulted in greater improvement in parent attitudes associated with child abuse compared with an active control group (conventional family therapy) (low strength of evidence).[88, 89]

Nurse Home Visitation Intervention Versus Usual Care

- **Mental health and behavioral outcomes**: When the Nurse Home Visitation Intervention was compared with usual care, no statistically significant difference in child internalizing or externalizing behavior was found (insufficient evidence).[86]
- **Healthy caregiver-child relationship**: When the Nurse Home Visitation Intervention was compared with usual care, no statistically significant difference was found in parent attitudes and practices associated with child abuse, family functioning, or the home environment (insufficient evidence).[86]

Project Support Versus Usual Care

- **Healthy caregiver-child relationship**: Project Support resulted in greater improvements in parenting confidence and reduction in harsh parenting practices compared with usual care; however, no statistically significant difference was found between Project Support and usual care in parent distress (low strength of evidence).[94]

Detailed Synthesis: Parenting Interventions

Attachment and Biobehavioral Catch-up

Attachment and Biobehavioral Catch-up (ABC) is a low-intensity home-based psychoeducational relational intervention designed to help foster caregivers provide nurturing, sensitive care to enhance young children's regulatory capabilities and to support attachment formation. The comparative intervention, an active control, was also a home-based intervention but focused on supporting children's cognitive and linguistic development. The authors derived the comparative approach from the Abecedarian early intervention program,[151, 152] using a modified version of the home visiting component that excluded activities or content addressing parental sensitivity to the child's cues (referred to in the study as developmental education for families). In two randomized controlled trials (RCTs) (Table 11), ABC was (1) compared with the active control group (two trials, three articles)[74-76] and (2) compared with a wait list (inactive) control group (one trial; one article).[77]

Table 14. Attachment and Biobehavioral Catch-up: Study characteristics

First Author et al., Year Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Dozier et al., 2006[74] and Dozier et al., 2009[76] United States	Children in foster care (3.6 to 39.4 mos)	RCT 14 weeks [a]	G1: ABC G2: Active control	G1: NR G2: NR Overall N=60 [a]	Medium
Dozier et al., 2008[75] United States	Children in foster care (15 to 24 mos)	RCT > 10 weeks (not specified)	G1: ABC G2: Active control	G1: 46 G2: 47 Overall N=93	Medium
Sprang et al., 2009[77] United States	Children in foster care (0 to 6 years; mean age = 42.5 months)	RCT 10 weeks	G1: ABC G2: Waitlist	G1: 29 G2: 29	Medium

[a] Dozier et al., 2009: timing of assessment not specified and N = 46

Abbreviations: ABC = Attachment and Biobehavioral Catch-up; DEF = Developmental Education for Families; G = group; mos = months; N = number; RCT = randomized controlled trial.

Attachment and Biobehavioral Catch-up Versus active control

In two RCTs reported in three articles,[74-76] Dozier and colleagues found ABC improved children's cortisol regulation (2 trials)[74, 75] and caregiver-child relationship outcomes (1 trial).[76] Both trials examined the efficacy of ABC compared with an active control (described above) for foster parents caring for young children (ages 3 to 39 months). Table 12 provides a summary of results and the Evidence Tables in Appendix E provide a detailed summary of results. The first RCT examined children's diurnal production of cortisol and parent report of children's problem behaviors.[74] The authors measured cortisol, as neuroendocrine dysregulation is one of the primary targets of ABC (the other is the caregiver-child attachment relationship). Cortisol is an indicator of neurobiological response to stress and serves as a proxy indicator of regulation and functioning of the hypothalamic-pituitary-adrenal (HPA) axis, itself activated by physical and psychological stressors. Children in the ABC group exhibited more normative cortisol levels than children in the comparator condition (p=0.04); however, baseline cortisol measures were not reported. This trial also reported no statistically significant differences between groups in foster parent reports of child behavior problems based on an analysis of variance (ANOVA) conducted at postintervention (that is, the authors did not analyze between-group differences in change scores across study arms). The ANOVA analyzed study condition by age, with age being stratified into the category of infants (0-17 months) or toddlers, (18-36). Age was included in the ANOVA because the concept of 'behavior problems' does not apply to infants. In a second article from the same trial, Dozier and colleagues collected foster parent reports of children's attachment behavior; foster parents who participated in ABC arm (N=22) reported that children exhibited less avoidant attachment behavior (p=0.030) compared with foster parent reports of child attachment behavior in the control arm (N=24); however, scores reflecting secure attachment behavior did not differ between study conditions. A second RCT[75] assessed postintervention cortisol levels as well as changes in cortisol levels after a stressful separation-reunion procedure. Children in the ABC group (N=46) exhibited lower cortisol levels than children in the comparator group (N=47). There were no differences between groups in the change in cortisol values following the stressful procedure (p=NS (NR)).

Table 15. Results: Attachment and Biobehavioral Catch-up versus active control

First Author et al., Year	Comparison Groups	Mental and Behavioral Health Outcomes	Health Caregiver-Child Relationship Outcomes
Dozier et al, 2006[74]	G1: ABC G2: Active control	**Lower cortisol levels** G1>G2, p<0.001 **Behavioral problems** (Parent Daily Report) No differences between G1 and G2, p=0.71	NA
Dozier et al, 2008[75]	G1: ABC G2: Active control	**Lower cortisol levels** G1>G2, p<0.05 **Change in cortisol before and after strange situation** No differences between G1 and G2, p=NS (NR)	NA
Dozier et al, 2009[76]	G1: ABC G2: Active control	NA	**Lower reports of avoidant attachment behavior** (Parent Attachment Diary) G1>G2, p=0.030 **Secure attachment behavior** (Parent Attachment Diary) No differences between G1 and G2, p=0.379
SOE Summary[a]	G1: ABC G2: Active control	G1>G2, Low	G1>G2, Low

[a]We present detailed strength of evidence grading tables in Appendix F.

Abbreviations: ABC = Attachment and Biobehavioral Catch-up; DEF = Developmental Education for Families; G = group; mos = months; N = number; RCT = randomized controlled trial; SOE = strength of evidence.

Attachment and Biobehavioral Catch-up Versus Wait List

Sprang and colleagues conducted an RCT to examine the efficacy of ABC (N=29) compared with a wait list control group (N=29) in foster care.[77] In contrast to the trials conducted by Dozier et al.[74-76] the Sprang study evaluated the effectiveness of the intervention in a real world setting with a broader age span of children (mean age 42.5 months; SD = 18.6 months) and an explicit focus on children who had experienced severe maltreatment (resulting in termination of parental rights) and disruptions in their primary attachment relationships. An eligibility criterion for inclusion in the study was treatment readiness (the authors explain that all the families had been prescreened for readiness prior to randomization). This trial assessed child internalizing and externalizing behavior problems, parenting attitudes reflective of child abuse potential, and parenting stress with widely-used and highly-validated measures. Table 13 summarizes the study results; a detailed summary of the results is provided in Appendix E. Based on intention-to-treat (ITT) analysis, compared with the wait list control group, statistically significant between-group differences were found between study arms, with greater improvements in both internalizing and externalizing problems (low and medium effect sizes, respectively), greater decreases in negative parenting attitudes and practices associated with child abuse (large effect size), and greater decreases in parenting stress (medium effect size).

Table 16. Results: Attachment and Biobehavioral Catch-up versus wait list

First Author et al., Year	Comparison Groups	Mental and Behavioral Health Outcomes	Health Caregiver-Child Relationship Outcomes
Sprang et al., 2009[77]*	G1: ABC G2: Wait list	**Improvements in internalizing behavior** (Child Behavior Checklist-Internalizing subscale) $G1^{+>}G2^{+}$, p=0.01, partial eta squared =0.436[b] **Improvements in externalizing behavior** (Child Behavior Checklist-Externalizing subscale) $G1^{+}>G2^{+}$, p=0.001, partial eta squared =0.511[b]	**Improvements in self-reported risk factors for child abuse** (Child Abuse Potential Inventory) $G1^{+}> G2^{+}$, p=0.001, partial eta squared =0.791[b] **Improvements in parent stress** (Parent Stress Inventory) $G1^{+}> G2^{+}$, p=0.01, partial eta squared =0.59[b]
SOE Summary[a]	G1: ABC G2: Wait list	G1>G2, Low	G1>G2, Low

[a]We present detailed strength of evidence grading tables in Appendix F.

[b] We use the interpreation of partial eta squared effect size (i.e., small, medium, or large effect) provided by the authors of the study..

Abbreviations: ABC = Attachment and Biobehavioral Catch-up; G = group; SOE = strength of evidence. * = ITT analysis

Attachment-based Intervention

We identified one RCT eligible for the review which evaluated another low intensity attachment-focused approach, referred to in this review simply as "Attachment-based Intervention."[78] This approach, developed and tested by Moss and colleagues (2011), was described by the study authors as a relational, home-visiting intervention loosely based on other attachment-focused interventions, including Dozier and colleagues' ABC intervention.[78] The RCT evaluated outcomes in the Attachment-based Intervention condition compared with a usual care condition (Table 14).

Table 17. Attachment-based Intervention: Study characteristics

First Author et al., Year Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Moss et al., 2011[78] Canada	Maltreated children ages 12 to 71 months and either their biological mother or father	RCT 8 weeks	G1: Attachment-based Intervention G2: Usual care	G1: 40 G2: 39 Overall N=79	Medium

Abbreviations: G = group; N = number; RCT = randomized controlled trial.

Attachment-based Intervention Versus Usual Care

The RCT examined pre-post group-difference outcomes for parent and child dyads receiving the Attachment-based Intervention (N=40) compared with dyads in a usual care condition (N=39). The study population spanned infancy- to preschool-aged children. The study assessed children's internalizing and externalizing behavior, maternal sensitivity, and attachment behavior using widely-used and highly-validated measures. We summarize the study results in Table 15 and provide study details in the evidence tables (Appendix E). There were no differences between the intervention and usual care arms in either child internalizing or externalizing behavior problems (p=NS). A statistically significant group difference was found for maternal sensitivity (small effect size using Cohen's *d*), which was the primary target of the intervention. Additionally, a greater proportion of children showed improvements in attachment as assessed

using a widely-used and highly-validated objective measure of attachment (medium effect sizes using the correlational coefficient *r*).

Table 18. Results: Attachment-based Intervention versus usual care

First Author et al., Year	Comparison Groups	Mental and Behavioral Health Outcomes	Health Caregiver-Child Relationship Outcomes
Moss et al., 2011[78]	G1: Attachment-based Intervention G2: Usual care	**Improvement in internalizing problems** (Child Behavior Checklist-Internalizing subscale) No difference between G1 and G2, p=NS **Improvement in externalizing problems** (Child Behavior Checklist -Externalizing subscale) No difference between G1 and G2, p=NS	**Improvements in maternal sensitivity** (Maternal Behavior Q-set) G1>G2, p<0.05, d=0.47[b] **Proportionally more changes from insecure to secure attachments** (strange situation) G1>G2, p<0.05, r=0.36[c] **Proportionally more changes from disorganized to organized attachments** (strange situation) G1>G2, p<0.05, r=0.37[c]
SOE Summary[a]	G1: Attachment-based Intervention G2: Usual care	G1 vs. G2, insufficient	G1>G2, Low

[a]We present detailed strength of evidence grading tables in Appendix F.

[b]Cohen's d effect size index of the difference between groups means: 0.20 = small; 0.50 = medium; 0.80 = large.

[c] The correlational coefficient r is an effect size index measure of association; we refer to Cohen's suggested guidelines for interpreting magnitude of effect: 0.10 = small; 0.30 = medium, 0.50 = large.

Abbreviations: G = group; NS, not significant; SOE = strength of evidence.

Child-Parent Psychotherapy

Cicchetti and colleagues[80] developed the version of Child-Parent Psychotherapy (CPP) included in this review, which is based in attachment theory, psychoanalytic theory, and infant mental health.[153-156] The approach is a high intensity, dyadic intervention for caregivers and their young children designed to mitigate the negative effects of maltreatment on young children's early attachment relationships and prevent maladaptive developmental outcomes. In Cicchetti and colleagues' model, the intervention is delivered in the home for infants and toddlers and in the clinic for preschool-age children. We identified two RCTs comparing this variant of CPP with (1) a usual care group and (2) an active control (Table 16).[79, 80] Both studies used the same active control group, a psychoeducational home-visiting intervention derived from Olds and colleagues' nurse home visitation model.[87] The comparative intervention focused on providing mothers with didactic training in child development, parenting skills, coping strategies for managing stresses in the immediate environment, and assistance in developing social support networks. One RCT targeted 12-month-olds infants; the other trial targeted 4-year-old children. The applicability of the results pertain to Cicchetti and colleagues' version of CPP.

Table 19. Child-Parent Psychotherapy: Study characteristics

First Author et al., Year Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Toth et al., 2002[80] United States	Children ages 4 years in maltreating families	RCT 1 year (child age 5 years)	G1: CPP G2: Active control G3: Usual care	G1: 23 G2: 34 G3: 30 Overall N=87	Medium
Cicchetti et al., 2006[79] United States	Infants ages 12 months in maltreating families (mean age 13.1 months, SD=0.81)	RCT Approximately 13 months (child age 26 months)	G1: CPP G2: Active control G3: Usual care	G1: 53 G2: 49 G3: 35 Overall N=137	Medium

Abbreviations: CPP = Child=Parent Psychotherapy; G = group; N = number; RCT = randomized controlled trial; SD = standard deviation.

In an initial RCT evaluating the CPP approach, conducted by Toth and colleagues,[80] preschool-age maltreated children and their mothers received either CPP (N=23) or an active control (N=34). The study also included a usual care group (N=30). The authors examined child mental representations of the child-parent attachment relationship. We summarize the study results in Table 17 and provide study details in the evidence tables (Appendix E). Across study conditions, children's mental representations were predominantly maladaptive and negative at baseline. Across all study groups (including a nonmaltreated nonrandomized comparison group), a significant main effect of time emerged for improvements in adaptive and maladaptive maternal representations and positive self-representations (all $p<0.001$). At postintervention, children whose mothers participated in CPP exhibited a significantly greater decline in negative self-representations compared with children in the control and the usual care arms of the study ($p<0.01$). The study found no significant group differences for adaptive maternal representation and false self-representation change scores (p=NR). Nonsignificant trends also emerged, with children in the CPP condition endorsing more positive self-representations than those in the control group ($p<0.10$) and less maladaptive maternal representations ($p<0.10$) compared with children in the usual care group.

A second RCT also conducted by Cicchetti and colleagues,[79] compared attachment behavior among mother-infant dyads who received CPP (N=53) with mothers who participated in the active control condition (N=49). This RCT also included a usual care group (N=35). We summarize study results in Table 17 and provide study details in the evidence tables (Appendix E). At postintervention (child age 26 months), ITT analyses showed consistently positive child attachment behaviors in both conditions compared with usual care: lower rates of stable disorganized attachment (large and medium effect sizes, respectively), higher rates of changing from an insecure to secure attachment (large effect size), and higher rates of secure attachment (large effect size). The authors report a range of large effect sizes for contrasts in attachment behavior between the usual care condition and each intervention group and also between the usual care condition and a nonmaltreated (nonrandomized) comparison group. No significant differences were found between CPP and the control conditions on any attachment outcome (p=NR). The authors also found no significant effects of either CPP or the control condition on maternal variables hypothesized to play a mediating role in intervention efficacy (p=NR). These maternal variables were parenting attitudes, child-rearing stress, and social support; for CPP,

maternal variables of interest also included mothers' representations of their own mothers and maternal sensitivity.

Table 20. Results: Child-Parent Psychotherapy versus active control versus usual care

First Author et al., Year	Comparison Groups	Health Caregiver-Child Relationship Outcomes
Toth et al, 2002[80]	G1: CPP G2: Active control G3: Usual care	**Greater decline in negative self-representations** (MacArthur Story Stem Battery; Narrative Coding Manual-Rochester Revision) G1 $^{+}$>G2^{ns}, p<0.01 G1 $^{+>}$G3^{ns}, p<0.01 **Trend towards greater increase in positive self-representations** (MacArthur Story Stem Battery; Narrative Coding Manual-Rochester Revision) G1^{+} >G2 ^{ns}, p<0.10, trend **Trend towards greater decrease in maladaptive maternal representations** (MacArthur Story Stem Battery; Narrative Coding Manual-Rochester Revision) G1^{+} >G3 ^{ns}, p<0.10, trend **Changes in adaptive maternal representation and false self-representation** (MacArthur Story Stem Battery; Narrative Coding Manual-Rochester Revision) No differences between G1, G2, and G3 p=NR (ns)
Cicchetti et al, 2006[79]	G1: CPP G2: Active control G3: Usual care	**Higher rates of secure attachment *** (Strange Situation) G1>G3, p=<0.01 G2>G3, p=<0.01 both, h=1.16 to 1.39[b] No difference between G1 and G2 p=NR (ns) **Higher rates of becoming securely attached*** (Strange Situation) G1>G3, p<0.01, h=1.34[b] G2>G3, p<0.01, h=1.16[b] No difference between G1 and G2, p=ns (NR) **Lower rates of stable disorganized attachment*** (Strange Situation) G1>G3, p=0.01, h=0.83[b] G2>G3, p=0.025, h=0.64[b] No difference between G1 and G2, p=NR (ns) **Change in maternal variables** (Perceptions of Adult Attachment Scale; Maternal Behavior Q-Set; Adult-Adolescent Parenting Inventory; Social Support Behaviors Scale; Parenting Stress Index) No difference between G1 and G2; all p=ns (NR)
SOE Summary	G1: CPP G2: Active control G3: Usual care	G1 vs. G2, Insufficient G1>G3, Low

[a]We present detailed strength of evidence grading tables in Appendix F.

[b]Cohen's h is an effect size index of the difference between proportions: 0.20 = small; 0.50 = medium; 0.80 = large.

Abbreviations: CPP = Child-Parent Psychotherapy; G = group; NR = not reported; NS = not significant; SOE = strength of evidence. * = ITT analysis

Incredible Years

Incredible Years (IY) is a psychoeducational, didactic group-based intervention focused on strengthening parental competencies from birth to preadolescence. The number of sessions for standard IY varies by age of child; the number of sessions is 18 to 20 for parents of preschool-age children and 12 to 16 for parents of early school-age to preadolescent children. The trials included here, however, restricted the number of sessions to low-intensity (12 sessions). We identified two RCTs (Table 18) comparing IY with a wait list control group.[81, 82] We also identified a third RCT comparing an adaptation of IY, modified for use with biological-foster parent pairs, with usual care.[83]

Table 21. Incredible Years: Study characteristics

First Author et al., Year, Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Letarte et al., 2010[82]; Canada	Children, ages 5 to 10 years, and neglecting biological caregiver	RCT T1: approx 19 weeks (G1) or 16 weeks (G2) post-baseline	G1: IY G2: Wait list	G1: 36 G2: 9 Overall N=45 (37 mothers; 8 fathers)	Medium
Hughes et al., 2004[81] Canada	Children, ages 3 to 8 years, and CPS-involved biological caregiver	RCT 19 weeks	G1: IY G2: Wait list	G1: 14 G2: 14 Overall N=28	Medium
Linares et al., 2006[83]; United States	Children in foster care, ages 3 to 10 years, and their biological and foster caregivers	RCT T1: 12 weeks post-baseline T2: 12 weeks after intervention end	G1: IY Adaptation G2: Usual care	G1: 80 caregivers (40 bio/foster pairs), 40 children G2: 48 parents (24 bio/foster pairs), 24 children Overall N=128 caregivers; 64 children	Medium

Abbreviations: bio = biological; CPS = Child Protective Services; G = group; N = number; RCT = randomized controlled trial; T = time.

Incredible Years Versus Wait List

An RCT conducted by Letarte and colleagues (2010) in Canada examined the efficacy of IY (N=36) compared with a wait list control group (N=9) with biological parents of children ages 5 to 10 years being monitored by child protective services for child-neglecting behaviors.[82] The study examined self-reported parenting practices, parental self-efficacy, and parent perceptions of child behavior. We summarize study results in Table 19 and provide study details in the evidence tables (Appendix E). The authors report effect sizes using the eta square index, a measure that is influenced by whether group sample sizes are equal; thus, the effect sizes for group-difference results are interpreted with caution. At postintervention, parents who

Table 22. Results: Incredible Years versus wait list

First Author et al., Year	Comparison Groups	Mental and Behavioral Health Outcomes	Health Caregiver-Child Relationship Outcomes
Letarte et al., 2010[82]	G1: IY G2: Wait list	**Caregiver perception of intensity of child behavioral and conduct problems** (Eyberg Child Behavior Inventory -Intensity Subscale) G1>G2, p<0.001, Êta=0.21 **Caregiver perception of degree to which behavior is problematic** (Eyberg Child Behavior Inventory Problem Subscale) G1>G2, p<0.05, Êta=0.18	**Parenting behavior:** **Less reporting of harsh and inconsistent discipline** (Parenting Practices Interview Subscale) $G1^{+}>G2^{ns}$, p<0.05, Êta=0.21 [b] **Less reporting of physical punishment** (Parenting Practices Interview Subscale) $G1^{ns>}G2^{ns}$, p<0.05, Êta=0.13 [b] **Greater reporting of use of praise/incentives** (Parenting Practices Interview Subscale) G1+>$G2^{ns}$, p<0.05, Êta=0.18 [b] **Reporting of setting clear expectations for child** (Parenting Practices Interview Subscale) No difference between G1 and G2, p=0.54 **Greater reporting of appropriate discipline strategies** (Parenting Practices Interview Subscale) $G1^{+}>G2^{ns}$, p<0.001, Êta=0.28 [b] **Greater reporting of monitoring** (Parenting Practices Interview Subscale) $G1^{ns}>G2^{-}$, p<0.05, Êta=0.26 [b] **Greater use of positive verbal discipline** (Parenting Practices Interview Subscale) $G1^{+}$>G2, p<0.001, Êta=0.43 [b] **No significant difference between groups on parental self-efficacy** (Parenting Self-Agency Measures/Maternal Confidence in Toddlerhood Questionnaire) No difference between G1 and G2, p=0.48
Hughes et al, 2004[81]	G1: IY G2: Wait list	NA	**Parenting skills: Greater involvement during free-play interaction session** (Parenting Skills Observation Scale) G1>G2, p=0.03 **Involvement during structured interaction session** (Parenting Skills Observation Scale) No difference between G1 and G2, p=NS (NR) **Autonomy support during free-play interaction session** (Parenting Skills Observation Scale) G1 > G2, p=0.07, trend **Autonomy support during structured interaction session** (Parenting Skills Observation Scale) No difference between G1 and G2, p=NS (NR)

Table 19. Results: Incredible Years versus wait list (continued)

First Author et al., Year	Comparison Groups	Mental and Behavioral Health Outcomes	Health Caregiver-Child Relationship Outcomes
Hughes et al, 2004[81] (continued)			**Providing structure during free-play interaction session** (Parenting Skills Observation Scale) No difference between G1 and G2, p=NS (NR) **Providing structure during structured interaction session** (Parenting Skills Observation Scale) No difference between G1 and G2, p=NS (NR) **Child autonomous behavior:** **During free-play interaction session** (Child Autonomy Observational Scale) No difference between G1 and G2, p=NS (NR) **During structured interaction session** (Child Autonomy Observational Scale) No difference between G1 and G2, p=NS (NR)
SOE Summary[a]	G1: IY G2: Wait list	Low, G1>G2	Low G1>G2

[a]We present detailed strength of evidence grading tables in Appendix F.

[b] We use the interpretation of Êta effect size (i.e., small, medium, or large effect) provided by the authors of the study..

Abbreviations: G = group; IY = incredible year; NS = not sufficient; NR = not reported; SOE = strength of evidence.

participated in IY reported significant improvements in the intensity and degree of child problem behaviors, reported use of positive parenting practices (all small effect sizes for these within-group changes). Within-group changes for parents in the control group showed a nonsignificant increase in the frequency of parent-reported problem behaviors (p=NR) and no change in the number of problems from baseline to post (p=NS; NR). Additionally, no significant within-group changes emerged for the control group on any of the parenting measures; however, the control group scores on the monitoring subscale decreased significantly from pre to post (small effect size). The study found a significant between-group difference in frequency and number of child behavior problems between conditions, favoring the intervention arm (small effect sizes). Between-group comparisons showed IY participants had greater improvements than the control group on six of eight measures of parenting practices (all small effect sizes). No significant between-group differences were found for clear expectations or a measure of parenting self-efficacy (p = 0.54 and p = 0.48, respectively).

In another RCT study conducted in Canada, Hughes and Gottlieb[81] tested the efficacy of IY (N=14) against a wait list control group (N=14) with biological caregivers of children ages 5 to 10 years who were active child protective services cases in need of parent training. The study examined parenting skills demonstrated during structured and free-play interaction sessions with the children. We summarize study results in Table 19 and provide study details in the evidence tables (Appendix E). This study found a significant postintervention difference between groups on one of eight subscales of an observational parent-child interaction measure (parental involvement; p=0.03). The free-play interaction yielded a nonsignificant trend in favor of the IY

group for parental autonomy support (behavior that enhances a child's sense of value and personal control including showing respect for child's ideas, providing feedback, offering choices, flexibility) (p=0.07) and no significant group difference (p=NR) for either parental structuring of play (setting limits and boundaries including eliminating distractions, modeling, providing clear expectations) or child autonomy (eight autonomous indicators including curiosity, interest, persistence, willing cooperation, and persuasive resistance). No significant group differences emerged for any parenting outcome or child autonomy during a structured portion of the parent-child interaction session (p=NR).

Incredible Years Adaptation Versus Usual Care

Linares and colleagues developed an adaptation of the IY program for use with biological and foster parent pairs. This IY Adaptation comprises a slightly modified version of the IY parent-group curriculum that addresses issues relevant for children in foster care and a new coparenting component developed by the authors. The study examined changes in caregiver reported discipline practices as well as caregiver and teacher report of child behavioral problems. We summarize study results in Table 20 and provide study details in the evidence tables (Appendix E). Compared with caregivers in usual care, biological-foster parent pairs who participated in the IY Adaptation were more likely to endorse positive discipline practices ($p<0.05$; $d=0.40$) and to report coparenting flexibility ($p<0.05$; d=0.42), coparenting problem solving ($p<0.05$; d=0.52), and the total coparenting score ($p<0.05$; d=0.48). The study did not find significant differences for a mutual support subscale (d=0.34) as an index of collaborative coparenting; nor did the study find a group difference on the other subscales of the parenting measure used in the study: appropriate discipline (d=0.23), clear expectations (d=0.04), and harsh discipline (d=0.09). In addition, no group differences emerged in child externalizing behavior. At 3-month followup, the significant group difference in positive discipline was sustained ($p<0.01$; d=0.59) and a significant effect for the IY Adaptation compared with usual care in clear expectations emerged ($p<0.05$; d=0.54). However, the study conditions did not significantly differ in reporting of appropriate discipline or harsh discipline practices, parent report of externalizing behavior and conduct problems, or teacher report of problem behavior. Additionally, the group differences in coparenting behaviors reported at the postintervention were not sustained over time (p=NR). Biological caregivers retained improvements in self-reported positive discipline practices ($p<0.05$; d=NR) more so than foster parents.

Table 23. Results: Incredible Years Adaptation versus usual care

First Author et al., Year	Comparison Groups	Mental and Behavioral Health Outcomes	Health Caregiver-Child Relationship Outcomes
Linares et al, 2006[83]	G1: IY Adaptation G2: Usual care	**Caregiver perception of child behavioral problems**[a] (Child Behavior Checklist -Externalizing score) No difference between groups at T1, T2, p=NS (NR) **Caregiver perception of child behavioral and conduct problems**[a] (Eyberg Child Behavior Inventory) No difference between groups at T1, T2, p=NS (NR)	**Parenting behavior:**[a] **Greater reporting of positive discipline strategies** (Parenting Practices Interview Subscale) T1: G1>G2, p<0.05, d=0.40[b] T2: G1>G2, p<0.01, d=0.59[b] **Appropriate discipline strategies** (Parenting Practices Interview Subscale) T1, T2: No difference between groups, p=NS (NR)

Table 20. Results: Incredible Years Adaptation versus usual care (continued)

First Author et al., Year	Comparison Groups	Mental and Behavioral Health Outcomes	Health Caregiver-Child Relationship Outcomes
Linares et al, 2006[83] (continued)		**Teacher report of disruptive classroom behaviors**[a] (Sutter-Eyberg Student Behavior Inventory-Revised) No difference between groups at T1, T2, p=NS (NR)	**Greater reporting of setting clear expectations for child** (Parenting Practices Interview Subscale) T1: No difference between groups, p=ns (NR) T2: G1>G2, p<0.05, d=0.54 [b] **Reporting of harsh discipline** (Parenting Practices Interview Subscale) T1, T2: No difference between groups, p=NS (NR) **Collaborative coparenting behavior:*** **Greater reporting of flexibility** (Family Functioning Style Subscale) T1: G1>G2, p<0.05, d=0.42[b] T2: No difference between groups, p=NS (NR) **Greater reporting of mutual social support** (Family Functioning Style Subscale) T1, T2: No difference between groups, p=NS (NR) **Greater reporting of problem solving** (Family Functioning Style Subscale) T1: G1>G2, p<0.05, d=0.52[b] T2, No difference between groups p=NS (NR) **Total coparenting score** (Family Functioning Style Subscale) T1: G1>G2, p<0.05, d=0.48[b] T2: No difference between groups, p=NS (NR)
SOE Summary[c]	G1: IY Adaptation G2: Usual care	G1 vs. G2, Insufficient	G1>G2, Low

[a]ITT Analyses

[b] Cohen's *d* effect size index of the difference between groups means: 0.20 = small; 0.50 = medium; 0.80 = large.

[c] We present detailed strength of evidence grading tables in Appendix F.

Abbreviations: G = group; IY = Incredible Years; NS = not sufficient; NR = not reported; SOE = strength of evidence; T = time.

Keeping Foster and Kinship Parents Trained and Supported

Keeping Foster and Kinship Parents Trained and Supported (KEEP) is a medium-intensity, group-based parent training intervention for foster and kin parents that focuses on teaching parents positive reinforcement discipline strategies to improve child behavior problems and

placement stability for high-risk foster children ages 5 to 12 years. We identified one RCT (Table 21) comparing KEEP with usual care.[84]

Table 24. Keeping Foster and Kinship Parents Trained and Supported: Study characteristics

First Author et al., Year Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Chamberlain 2008[84] United States	Foster children ages 5 to 12 years. placed>30 days	RCT 5 months	G1: KEEP G2: Usual care	G1: 359 G2: 341	Medium

Abbreviations: G = group; KEEP = Keeping Foster and Kinship Parents Trained and Supported; RCT = randomized controlled trial.

Keeping Foster and Kinship Parents Trained and Supported Versus Usual Care

An RCT comparing KEEP to routine foster care for a sample of 700 children ages 5 to 12 years and their foster caregivers randomly assigned foster and kin caregivers to KEEP (N=359) and usual care (N=341).[84] The study examined parent daily report of child problem behaviors and use of positive reinforcement, assessed 5 months postbaseline. Proportion of positive reinforcement (R+) was calculated as a ratio of R+ and discipline behaviors aggregated from the parent report data and an intensive, 2-hour interview with the foster parent. We summarize study results in Table 22 and provide study details in the evidence tables (Appendix E). Results controlled for baseline scores and indicated significant improvement in problem behaviors for the KEEP group relative to routine foster care (p=NR(sig)), as well as an increase in positive reinforcement as a proportion of total foster parent discipline; both outcomes were reflected in small effect sizes.

Table 25. Results: Keeping Foster and Kinship Parents Trained and Supported versus usual care

First Author et al., Year	Comparison Groups	Mental and Behavioral Health Outcomes	Health Caregiver-Child Relationship Outcomes
Chamberlain, 2008[84]	G1: KEEP G2: Usual care	**Improvement in problem behaviors at endpoint** (Parent Daily Report) G1>G2, p=NR (sig), d=0.26[a]	**Increased proportion positive reinforcement at endpoint** (Parent Daily Report) G1>G2, p=NR (sig), d=0.29[a]
SOE Summary[b]	G1: KEEP G2: Usual care	G1>G2, Medium	G1>G2, Medium

[a] Cohen's *d* effect size index of the difference between groups means: 0.20 = small; 0.50 = medium; 0.80 = large.

[b]We present detailed strength of evidence grading tables in Appendix F.

Abbreviations: KEEP = Keeping Foster and Kinship Parents Trained and Supported; NR = not reported; sig = significant; SOE = strength of evidence.

Multifamily Group Therapy

Multifamily Group Therapy (MFGT) is a high-intensity, family-based approach involving two or more families focused on family-related problems and concerns. We identified one RCT, reported in two articles,[88, 89] comparing MFGT with conventional (single-unit) family therapy as an active control (Table 23).

Table 26. Multifamily Group Therapy: Study characteristics

First Author et al., Year Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Meezan & O'Keefe, 1998[88] United States	Families with children ages 2 to 11 years and open CPS case	RCT Intervention end (8 months) or earlier	G1: MFGT G2: Active control	G1: 40 G2: 38 Overall N=78	Medium
Meezan & O'Keefe, 1998[89] United States	Families with children ages 2 to 11 years and open CPS case	RCT Intervention end (8 months) or earlier	G1: MFGT G2: Active control	G1: 37 to 41 G2: 27 to 37 Overall N=64 to 78	Medium

Abbreviations: CPS = Child Protective Services; MFGT = Multifamily Group Therapy; RCT = randomized controlled trials.

Multifamily Group Therapy Versus Traditional Group Therapy

In an RCT, Meezan & O'Keefe[88, 89] examined the efficacy of MFGT (N=40) compared with conventional family therapy (N=38) for families with children ages 2 to 11 years with open Child Protective Services (CPS) cases (Table 24). Investigators used several validated measures to assess mental and behavioral health outcomes; however, the amount of loss to followup was beyond our threshold for medium risk of bias (≥30%) on some measures. Parents who participated in the MFGT condition reported improved parent-child interactions (e.g., use of consistent discipline, maintaining appropriate authority roles) compared with traditional family therapy families (p=0.03). MFGT families were rated as having improved parent-child interactions compared with traditional family therapy families (p=0.03). Parents who had participated in MFGT reported less abusive behaviors (p=0.001), less distress (p=0.01), fewer problems with others (p=0.004), and less loneliness (p=0.009) and unhappiness (p=0.03). Data trends indicated an advantage of MFGT over traditional family therapy for ego strength (p=0.06), problems with self (p=0.09), and problems with family (p=0.07). There were no differences between groups regarding family support, parental rigidity, family adaptation, family cohesion, inappropriate expectations for the children, and empathy for the children (all, p=NS).

Table 27. Results: Multifamily Group Therapy versus family therapy

First Author et al., Year	Comparison Groups	Health Caregiver-Child Relationship Outcomes
Meezan & O'Keefe, 1998[88]	G1: MFGT G2: Active control	**Improved parent-child interactions** (Family Assessment Form) G1>G2 p=0.03 **Improved family support** (FAF subscale) No difference between G1 and G2, p=NS
Meezan & O'Keefe, 1998[89]	G1: MFGT G2: Active control	**Appropriate discipline and child abuse potential** (Child Abuse Potential Inventory-Total) G1>G2, p=0.001 **Distress** (Child Abuse Potential Inventory) G1>G2, p=0.01 **Ego strength** (Child Abuse Potential Inventory) G1>G2, p=0.06, trend

Table 28. Results: Multifamily Group Therapy versus family therapy

First Author et al., Year	Comparison Groups	Health Caregiver-Child Relationship Outcomes
Meezan & O'Keefe, 1998[89] (continued)		**Problems-self** (Child Abuse Potential Inventory) G1>G2, p=0.09, trend **Problems-family** (Child Abuse Potential Inventory) G1>G2, p=0.07, trend **Problems-others** (Child Abuse Potential Inventory) G1>G2, p=0.004 **Loneliness** (Child Abuse Potential Inventory) G1>G2, p=0.009 **Rigidity** (Child Abuse Potential Inventory) No difference between G1 and G2, p=NS **Unhappiness** (Child Abuse Potential Inventory) G1>G2, p=0.03 **Adaptation, cohesion** (Family Adaptability and Cohesion Evaluation Scale II) Both, no differences between G1 and G2, all p=NS **Inappropriate expectations for children, empathy for children** (Adult-Adolescent Parenting Inventory) Both, no differences between G1 and G2, ps=NS
SOE Summary[a]	G1: MFGT G2: family therapy	G1 > G2, Low

[a]We present detailed strength of evidence grading tables in Appendix F.

Abbreviations: G = group; MFGT = Multifamily Group Therapy; NS = not significant.

Nurse Home Visitation Intervention

MacMillan and colleagues derived their Nurse Home Visitation (NHV) intervention from the preventive intervention developed by Olds and colleagues (the Nurse Family Partnership model).[87] Like the Nurse Family Partnership model, the NHV Intervention is a high-intensity approach comprising components that focus on intensive family support, parent education about infant and child development, and referrals to health and social services specific to the family's situation. We identified one RCT comparing MacMillan and colleague's variant of an NHV model with a usual care group (Table 26).[86]

Table 29. Nurse Home Visitation Intervention: Study characteristics

First Author et al., Year Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
MacMillan et al., 2005 Canada	Physically abused or neglected children ages 13 years and younger and their families	RCT T1: 1 year postbaseline T2: 2 years postbaseline T3: 3 years postbaseline	G1: NHV G2: Usual care	G1: 89 G2: 74 Overall N=163	Medium

Abbreviations: N = number; RCT = randomized controlled trial; T = time.

Nurse Home Visitation Intervention Versus Usual Care

In an RCT conducted in Canada, MacMillan and colleagues[86] examined the efficacy of an NHV intervention (N=89) compared with a usual care group (N=74) for children (ages 13 years and younger) and their families. All children had a history of recent physical abuse or neglect (within the last 3 months). The study outcomes were child behavior problems, parental self-report of risk factors for child abuse, parental attitudes towards parenting, developmentally supportive home environment, and family functioning. We summarize study results in Table 27 and provide study details in the evidence tables (Appendix E). There were no significant differences between the NHV Intervention and usual care groups on any subscales of a child behavior problem screening instrument (all ps=NS). There were no significant differences across groups in parent self-reported risk factors for child abuse, child rearing attitudes, quality of the child's home environment, or family functioning (all ps=NS).

Table 30. Results: Nurse Home Visitation Intervention versus usual care

First Author et al., Year	Comparison Groups	Mental and Behavioral Health Outcomes	Health Caregiver-Child Relationship Outcomes
MacMillan et al., 2005[86]	G1: NHV G2: Usual care	**Improvement in child behavioral problems** (Revised Behavioral Problems Checklist) Subscales: **Attentional problems** No difference between G1 and G2, p=NS **Anxiety/withdrawal** No difference between G1 and G2, p=NS **Psychotic behavior** No difference between G1 and G2, p=NS **Conduct disorder symptoms** No difference between G1 and G2, p=NS **Socialized aggression** No difference between G1 and G2, p=NS **Excessive motor tension** No difference between G1 and G2, p=NS	**Improvements in self-reported risk factors for child abuse** (Child Abuse Potential Inventory) No difference between G1 and G2, p=NS **Improvement in child rearing attitudes** (Adult Adolescent Parenting Inventory) No difference between G1 and G2, p=NS **Improvements in the quality of the child's environment** (HOME) No difference between G1 and G2, p=NS **Improvements in family functioning** (McMaster Family Functioning-General Functioning Scale) No difference between G1 and G2, p=NS

Table 31. Results: Nurse Home Visitation Intervention versus usual care

First Author et al., Year	Comparison Groups	Mental and Behavioral Health Outcomes	Health Caregiver-Child Relationship Outcomes
SOE Summary[a]	G1: NHV G2: Usual care	G1 vs. G2, insufficient	G1 vs. G2, insufficient

[a]We present detailed strength of evidence grading tables in Appendix F.

Abbreviations: G = group; HOME = Home Observation for Measure of the Environment; NS = not significant; SOE = strength of evidence.

Project Support

Project Support is a high-intensity home-visiting intervention that provides parent training and instrumental/social support to maltreating parents to address child behavioral problems and foster a more positive and warm parent-child relationship. We identified one trial (Table 29) comparing Project Support with usual care.[94]

Table 32. Project Support: Study characteristics

First Author et al., Year Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Jouriles et al., 2010 United States	Children ages 3 to 8 years in maltreating families (mean age 5.4 years, SD=1.5)	RCT T1: 4 months postbaseline T2: 8 months (intervention end T3: 12 months post-baseline T2: 16 months post-baseline	G1: Project Support G2: Usual care	G1: 17 G2: 18 Overall N=35	Medium

Abbreviations: G = group; N = number; SD = standard deviation; T = time.

Project Support Versus Usual Care

In an RCT conducted by Jouriles and colleagues,[94] children ages 3 through 8 years with a substantiated history abuse or neglect and their families were randomly assigned to receive Project Support (N=17) or usual care (N=18). The study outcomes comprised maternal psychological distress, perceived inability to manage childrearing responsibilities, report of harsh parenting, and re-referral to CPS for subsequent abuse. We summarize study results in Table 30 and provide study details in the evidence tables (Appendix E). Across the multiple assessment time points (which included a mid-point assessment during the intervention period), mothers who participated in Project Support reported fewer psychological distress symptoms than at baseline ($p<0.01$); this pattern of decline for the usual care group approached, but did not reach, statistical significance ($p=0.07$). The decline in mothers' psychological distress from baseline to 8 months postintervention did not differ across conditions (p=NS). Mothers' inability to manage childrearing responsibilities declined more for mothers who participated in Project Support than those who received usual care ($p<0.05$, large effect size). The study found mothers in the usual care group did not experience declines in their perceived inability to manage childrearing responsibilities ($p=0.72$). Mothers in the Project Support group reported a greater decline in harsh parenting than did mothers in the usual care group ($p<0.05$, large effect size), and the

decline in harsh parenting among Project Support participants was significant (p=0.01). Mothers who participated in the usual care group did not show a significant decline in harsh parenting (p=0.72). By 16 months' postbaseline, the intervention effects diminished for both groups for maternal psychological distress (p<0.01), perceived inability to manage childrearing responsibilities (p=0.01), and harsh parenting (p=0.001); scores on these outcomes moved closer to baseline scores over time.

Table 33. Results: Project Support versus usual care

First Author et al., Year	Comparison Groups	Healthy Caregiver-Child Relationship Outcomes
Jouriles et al., 2010	G1: Project Support G2: Usual Care	**Greater declines in perceived inability to manage childrearing responsibilities** (Parenting Locus of Control Scale) $G1^{+}>G2^{ns}$, p<0.05, d=1.02 **Greater declines in harsh parenting behaviors** (Revised Conflict Tactics Scales) $G1^{+}>G2^{ns}$, p<0.05, d=0.86[a] **Greater declines in psychological distress symptoms** (Symptom Checklist-90-Revised) No difference between $G1^{+}$ and $G2^{ns}$ p=NR (NS)
SOE Summary[b]	G1: Project Support G2: Usual care	G1>G2, Low

[a]We present detailed strength of evidence grading tables in Appendix F.

[b]Cohen's *d* effect size index of the difference between groups means: 0.20 = small; 0.50 = medium; 0.80 = large.

Abbreviations: G = group; NR = not reported; NS = not significant; SOE = strength of evidence.

Key Points: Trauma-Focused Treatments

Overview:

- Eight trials of trauma-focused treatments produced low or insufficient evidence on child well-being outcomes (Table 31).[100, 101, 105, 106, 110-113]
- Two trials employed active control comparators representative of conventional practices in the field.[101, 113]
- Three trials employed active control comparators that were derived approaches.[100, 105, 112]
- All eight trials reported improvements in mental and behavioral health outcomes.[100, 101, 105, 106, 110-113]
- One of eight trials reported improvements in caregiver-child relationship outcomes.[100, 101]
- No trials assessed school-based functioning outcomes.

Table 34. Trauma-focused treatments: Strength of evidence for child well-being outcomes[a]

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence[b] Magnitude of Effect[c]	Study Population
Trauma-Focused Cognitive Behavioral Therapy	Active Control[d]	Mental and behavioral health	2,[101, 112] 315	Low Small to Medium (d=0.30 to 0.70)	Early childhood to early adolescence, exposed to sexually abused, any nonmaltreating caregiver
		Healthy caregiver-child relationship	1,[101] 229	Low Small to Medium (d=0.38 or 0.57)	
Fostering Healthy Futures	Inactive control	Mental and behavioral health	1,[106] 156	Low Small to Medium (d=0.30 to 0.51)	Middle childhood to early adolescence, no caregiver included
Group Psychotherapy	Individual psychotherapy	Mental and behavioral health	1,[110] 71	Low, G1<G2 Small to medium (d=0.36 to 0.79)	Middle childhood to early adolescence, any caregiver
Combined Parent-Child Cognitive Behavioral Therapy	Active Control[e]	Mental and behavioral health	1,[100] 75	Low Medium (d=0.61)	Middle childhood to early adolescence, exposed to physical abuse, maltreating parents
		Healthy caregiver-child relationship	1,[100] 75	Insufficient	
Group Psychotherapy	Individual psychotherapy	Mental and behavioral health	1,[110] 71	Low, G1<G2 Small to medium (d=0.36 to 0.79)	Middle childhood to early adolescence, any caregiver
Trauma-Focused Cognitive Behavioral Therapy Group Adaptation	Active control[f]	Mental and behavioral Health	1,[113] 44	Insufficient	Early to middle childhood, exposed to sexual abuse, any nonmaltreating caregiver
		Healthy caregiver-child relationship	1,[113] 44	Insufficient	
Play Therapy + Milieu Therapy	Milieu therapy	Mental and behavioral health	1,[111] 41	Insufficient	Early childhood, no caregiver included
		Healthy development	1,[111] 41	Insufficient	
Eye Movement Desensitization and Reprocessing	Active Control[e]	Mental and behavioral health	1,[105] 14	Insufficient	Early adolescence, no caregiver included

[a]We order the results in the summary tables by strength of evidence, taking into consideration the size of the body of evidence (e.g., number of trials and participants), magnitude of effect, and duration of intervention outcomes.

[a]All SOE results are G1>G2 unless noted otherwise.

[c]For estimation of the magnitude of effect, we include only the statistically significant ($p<0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as: Cohen's d = 0.20, 0.50, and 0.80; Cohen's h = 0.20, 0.50, and 0.80; and correlation coefficient r = 0.10, 0.30, and 0.50.[150] We include an effect size range when more than two effect sizes are reported. Authors did not report effect sizes for some measures.

[d]One comparator is a conventional approach, the other a derived approach.

[e]Active comparator is an approach derived from an intervention wherein the degree to which core components of the original model are implemented is unclear and/or core components are omitted or substantively modified.

[f]Active comparator is an approach representative of a conventional practice in the field.

Combined Parent-Child Cognitive Behavioral Therapy Versus Active Control

- **Mental health and behavioral outcomes**: Combined Parent-Child Cognitive Behavioral Therapy resulted in greater declines in trauma symptoms but no statistically significant differences in child internalizing or externalizing behaviors compared with an active control group (derived approach; parent-directed cognitive-behavioral therapy); results faded by followup (low strength of evidence).[100]
- **Healthy caregiver-child relationship**: Combined Parent-Child Cognitive Behavioral Therapy improved parenting practices and reduced use of corporal punishment (per parent report) compared with the active control group described previously. These improvements were not sustained at followup. In the same trial, child report of positive parenting practices and use of corporal punishment showed no difference at either time point across treatment conditions (insufficient evidence).[100]

Eye Movement Desensitization and Reprocessing Versus Active Control

- **Mental health and behavioral outcomes**: No statistically significant difference in child trauma symptoms and child externalizing behaviors were found when comparing Eye Movement Desensitization and Reprocessing with an active control group (derived approach; modified Trauma-Focused Cognitive Behavioral Therapy) (insufficient evidence).[105]

Fostering Healthy Futures Versus Inactive Control

- **Mental health and behavioral outcomes**: Children in the Fostering Healthy Futures group showed greater improvements in trauma symptoms and behavior problems compared with an inactive control group (assessment-only condition) group (low strength of evidence).[106]

Group Psychotherapy Versus Individual Psychotherapy

- **Mental health and behavioral outcomes**: A sexual abuse-specific Individual Psychotherapy approach resulted in greater improvements in re-experiencing persistent avoidance trauma symptoms compared with a sexual abuse-specific Group Therapy approach, but no statistical significant difference was found in other trauma symptoms or functional impairment between treatment groups (low strength evidence).[110]

Play Therapy Plus Milieu Therapy Versus Milieu Therapy Alone

- **Mental health and behavioral outcomes**: No statistically significant difference in child anxiety or aggressive behavior was found when Play Therapy Plus Milieu Therapy (a therapeutic nursery) was compared with Milieu Therapy alone (insufficient evidence).[111]
- **Healthy development**: No statistically significant difference in intellectual functioning was found when Play Therapy Plus Milieu Therapy was compared with Milieu Therapy alone (insufficient evidence).[111]

Trauma-Focused Cognitive Behavioral Therapy Versus Active Control

- **Mental health and behavioral outcomes**: In two trials, Trauma-Focused Cognitive Behavioral Therapy resulted in greater overall improvements in behavior compared with active control group conditions. One trial used conventional child-centered therapy as the

comparative condition;[101] the other trial used a derived comparator developed by the study authors to control for nonspecific aspects of the experimental intervention.[112] A statistically significant difference was found between treatment conditions for trauma symptoms and depression in one trial,[101] and for internalizing symptoms and sexual behavior in the other (low strength of evidence).[112]

- **Healthy caregiver-child relationship**: Trauma-Focused Cognitive Behavioral Therapy resulted in greater improvements in parent depression and positive parenting practices compared with an active control group in one trial (low strength of evidence).[101]

Trauma-Focused Cognitive Behavioral Therapy Group Adaptation Versus Active Control

- **Mental health and behavioral outcomes**: No statistically significant difference in trauma symptoms, behavioral problems, or sexual behavior was found when comparing the group adaptation of Trauma-Focused Cognitive Behavioral Therapy with an active control (conventional supportive group therapy) (insufficient strength of evidence).[113]
- **Healthy caregiver-child relationship**: Trauma-Focused Cognitive Behavioral Therapy resulted in greater declines in maternal intrusive thoughts (distress) compared with the active control described previously; no statistically significant difference was found between conditions in maternal avoidant thoughts (distress), maternal trauma symptoms, and parenting practices (insufficient strength of evidence).[113]

Detailed Synthesis: Trauma-Focused Treatments

Combined Parent-Child Cognitive Behavioral Therapy

Combined Parent-Child Cognitive Behavioral Therapy (CPC-CBT) addresses the child's response to physical abuse and treats the offending parent. This medium-intensity group-based approach focuses on child gradual exposure and construction of a trauma narrative (child group), a parent abuse clarification process (parent group), and joint trauma narrative/abuse clarification and negotiation/rehearsal of a safety plan (joint work). We identified one trial (Table 32) comparing CPC-CBT with a parent-directed cognitive behavioral group intervention developed by the study authors as an active control condition (the authors described the comparator as similar to but more comprehensive than usual parenting services offered in the community).[100]

Table 35. Combined Parent-Child Cognitive Behavioral Therapy: Study characteristics

First Author et al., Year Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Runyon et al., 2010; United States	Children ages 7 to 13 years and physically abusive parent	RCT T1: approximately 16 weeks postbaseline T2: 12 weeks after intervention end	G1: CPC-CBT G2: Active control	G1: 40 children G2: 35 children Overall N=75	Medium

Abbreviations: CPC-CBT = Combined Parent-Child Cognitive Behavioral Therapy; N = number; RCT = randomized controlled trial; SD = standard deviation; T = time.

Combined Parent-Child Cognitive Behavioral Therapy Versus Active Control

Runyon and colleagues conducted an RCT[100] evaluating CPC-CBT (N=40) with an active control (N=35) targeting parents who within the past 4 months had a substantiated allegation of child physical abuse or who endorsed the use of physical punishment on a standardized measure. Additionally, eligibility for the study was restricted to children who met trauma symptom criteria of either endorsement of four post-traumatic stress disorder symptoms or elevated externalizing behavior scores, again on standardized measures. Siblings were included in the study if they met criteria. The study examined improvements in children's trauma symptoms and behavioral problems as well as child and parent reports of positive parenting skills and use of corporal punishment. We summarize study results in Table 33 and provide study details in the evidence tables (Appendix E).

Table 36. Results: Combined Parent-Child Cognitive Behavioral Therapy versus active control

First Author et al., Year	Comparison Groups	Mental and Behavioral Health Outcomes	Health Caregiver-Child Relationship Outcomes
Runyon et al., 2010[100]	G1: CPC-CBT G2: Active control	**Parent and child report of trauma symptoms** (Schedule for Affective Disorders and Schizophrenia for School-Aged Children Present and Lifetime Version) T1: $G1^{+}>G2^{+}$, p<.05, d=0.61[a] T2: No difference between G1 and G2, p=NS (NR) **Parent report of child internalizing behavior problems** (Child Behavior Checklist - Internalizing) T1, No difference between $G1^{+}$ and $G2^{+}$, p=NS (NR) T2: No difference between G1 and G2, p=NS (NR) **Parent report of child externalizing behavior problems** (Child Behavior Checklist - Externalizing) T1: No difference between $G1^{ns}$ and $G2^{+}$, p=NS (NR) No difference between G1 and G2, p=NS (NR)	**Child report of positive parenting** (Alabama Parenting Questionnaire-Child) T1 : No difference between $G1^{ns}$ and $G2^{ns}$, p=NS (NR) No difference between G1 and G2, p=NS (NR) **Child report of reduction in parents' use of corporal punishment** (Alabama Parenting Questionnaire-Child) T1: No difference between $G1^{+}$ and $G2^{+}$, p=NS (NR) No difference between G1 and G2, p=NS (NR) **Parent report of positive parenting** (Alabama Parenting Questionnaire-Parent) T1: $G1^{+}>G2^{ns}$, p<0.05, d=0.59 T2: No difference between G1 and G2, p=NS (NR) **Parent report of reduction in use of corporal punishment** (Alabama Parenting Questionnaire-Parent) T1: $G1^{+}<G2^{+}$, p<0.05, d=0.57 T2: No difference between G1 and G2, p=NS (NR)
SOE Summary[b]	G1: CPC-CBT G2: Active control	G1>G2, Low	G1 vs. G2, Insufficient

[a] Cohen's *d* effect size index of the difference between groups means: 0.20 = small; 0.50 = medium; 0.80 = large.

[b]We present detailed strength of evidence grading tables in Appendix F.

Abbreviations: CPC-CBT = Combined Parent-Child Cognitive Behavioral Therapy; G = group; NR = not reported; NS = not significant; T = time.

At treatment completion, parents in both the CPC-CBT and the control conditions reported significant reductions in child PTSD symptoms (within group change, p<0.001 for both conditions), with greater improvement in the CPC-CBT group (p<0.05, medium effect size). Similarly, parent report of internalizing on the CBCL decreased in both the CPC-CBT and control conditions (within group change p<0.01 for both conditions); however, there was no difference between treatment groups (p=NR). For externalizing behavior problems, only the control condition improved significantly (p<0.01), yet, the difference between groups was not significant (P=NR). At post-treatment, child report indicated no significant changes in parents' positive parenting skills for either group (p=NR); correspondingly, no group difference emerged (p=NR). In contrast, child report of parents' use of corporal punishment significantly decreased in both the CPC-CBT and control conditions (within group change, p<0.001 for control condition and p<0.01 for CPC-CBT); however, no between-group difference was found (p=NR). For parent report of positive parenting skills at post-treatment, the CPC-CBT group showed significant within group improvement (p<0.05) whereas the control group did not show improvement; this difference carried over to a significant difference between groups (p<0.05, medium effect size). Parents in both the CPC-CBT and comparator conditions were significantly less likely to endorse corporal punishment at post-treatment (p<0.01 and p<0.001, respectively). In this case, the control group reported significantly lower scores compared with the CPC-CBT group (p<0.05, medium effect size). The authors reported that post-treatment scores across all measures were maintained through the 3-month followup for both groups but within group p values were not reported and the between group differences were not significant (p=NR). The authors also reported that two families had new substantiated abuse allegations at followup but did not indicate the condition in which the families participated.

Eye Movement Desensitization and Reprocessing

EMDR is an information processing therapy that addresses a wide range of pathologies including traumatic stress disorders using elements from other approaches including psychodynamic, cognitive behavioral, interpersonal, and body-centered therapies. One procedural element is "dual stimulation" in which the client uses either bilateral eye movements, tones, or taps while attending momentarily to past memories, present triggers, or anticipated future experience. We identified one RCT (Table 34) comparing EMDR with an active control group. The comparator was a substantively modified version of TF-CBT in that only the child component was retained from the original model (the standard version includes components that involve the caregiver; see Table 1 for a description of standard TF-CBT). Additionally, it is not clear the extent to which other core components of TF-CBT were implemented with fidelity in this trial. modified.[105]

Table 37. Eye Movement Desensitization and Reprocessing: Study characteristics

First Author et al., Year Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Jaberghaderi et al., 2004[105] Iran	Iranian girls ages 12 to 13 years	RCT 8 months	G1: EDMR G2: Active control	G1: 7 G2: 7 Overall N=14	Medium

Abbreviations: EDMR = Eye Movement Desensitization and Reprocessing; G = group; N = number; RCT = randomized controlled trial.

Eye Movement Desensitization Reprocessing Versus Active Control

Jaberghaderi and colleagues[105] conducted an RCT comparing EMDR (EMDR; N=7), a low-intensity treatment, with an active control (N=7). The sample comprised Iranian girls ages 12 to 13 years who reported prior sexual abuse victimization (i.e., within past 6 months but not ongoing). The study restricted its sample to adolescent girls reporting a clinically significant level of trauma symptoms. The study outcomes were parent and child report of child trauma symptoms and teacher report of child behavior problems. We summarize study results in Table 35.

Table 38. Results: Eye Movement Desensitization and Reprocessing versus active control

First Author et al., Year	Comparison Groups	Mental and Behavioral Health Outcomes
Jaberghaderi et al., 2004[105]	G1: EMDR G2: Active control	**Child report of trauma symptoms** (Child Report of Post-traumatic Symptoms) No difference between G1^{+} and G2^{ns}, p=0.15 **Parent report of trauma symptoms** (Parent Report of Post-traumatic Symptoms) No difference between G1^{+} and G2^{+}, p=0.96 **Teacher report of problem behaviors** (Rutter Teacher Scale) No difference between G1^{+} and G2^{+}, p=0.42
SOE Summary[a]	G1: EMDR G2: Active control	G1 vs. G2, Insufficient

[a]We present detailed strength of evidence grading tables in Appendix A.

Abbreviations: EDMR = Eye Movement Desensitization and Reprocessing; G = group; NS = not significant; SOE = strength of evidence.

Youth in the EMDR condition reported fewer post-traumatic stress symptoms at the end of treatment ($p<0.05$) whereas individuals in the control group did not show significant declines in symptoms ($p=0.116$). However, the difference between groups did not reach statistical significance (p=NS, NR). Parent report of child trauma symptoms declined from pre- to post-test for the EMDR ($p<0.05$) and the control group ($p<0.05$). However, the difference between groups was not significant ($p=0.96$). Additionally, teacher report of child problem behaviors declined for both the EMDR and control conditions ($p<0.05$ for both conditions); again, there was no difference between groups ($p=0.42$). The use of the substantively modified comparative intervention makes it difficult to interpret the findings; additionally, the setting (Iran) limits the generalizability of the findings.

Fostering Healthy Futures

Fostering Healthy Futures is a high-intensity intervention that comprises skills group and mentoring components to promote children's adaptive functioning. The skills group component, which drew from other intervention approaches in the field, integrates traditional cognitive-behavioral activities with process-oriented materials; the mentoring component was individually tailored to provide children with an empowering relationship, support skills learned in group, and engage in positive activities to promote a positive future orientation. We identified one RCT comparing Fostering Healthy Futures to an inactive control group (assessment-only condition) (Table 36).[106]

Table 39. Fostering Healthy Futures: Study characteristics

First Author et al., Year Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Taussig & Culhane, 2010[106] United States	Children in foster care (ages 9 to11 years)	RCT Post intervention: 11 to 13 months Followup: 6-month post intervention followup	G1: Fostering Healthy Futures G2: Inactive control	G1: 79 G2: 77 Overall N=156	Medium

Abbreviations: G = group; N = number; RCT = randomized controlled trial.

Fostering Healthy Futures Versus inactive control

In an RCT, Taussig and Culhane[106] examined the efficacy of Fostering Healthy Futures (N=79) compared with an inactive control group (N=77) for children ages 9 to 11 years in foster care. The study examined children's trauma symptoms, behavioral problems, coping skills, self-perceptions, and life satisfaction. We summarize study results in Table 37 and provide study details in the evidence tables (Appendix E). Immediately after the intervention, Fostering Healthy Futures children reported higher quality of life scores than the children in the control group (p=0.006, small effect size); no other significant differences emerged immediately following the intervention. At followup the Fostering Healthy Futures children showed improvements in a composite mental health index representing child, teacher, and caregiver report of trauma symptoms and behavior problems/concerns (p=0.003, medium effect size); additionally, children reported fewer dissociative symptoms (p=0.002, small effect size). Fostering Healthy Futures children reported fewer trauma symptoms at followup as well (p=0.07, small effect size). There were no differences between groups on measures of coping and self-perception.

Table 40. Results: Fostering Healthy Futures versus inactive control

First Author et al., Year	Comparison Groups	Mental and Behavioral Health Outcomes
Taussig & Culhane, 2010*[106]	G1: Fostering Healthy Futures G2: Inactive Control	<u>**Initial outcomes**</u> **Multi-informant mental health index** (composite of Trauma Symptoms Checklist; Child Behavior Checklist—Internalizing Scales and Teacher Report Form of behavior problems) T1: No difference between G1 and G2, p=0.66 T2: G1>G2, p=0.003, d=-0.51[a] (95% CI, -0.84 to -0.19) **Improvements in trauma symptoms** (Trauma Symptoms Checklist – Post-Traumatic Stress Scale) T1: No difference between G1 and G2, p=0.53 T2: G1>G2, p=0.07, d=0.30[a] (95% CI, -0.63 to 0.02) **Quality of life** (Life Satisfaction Survey) T1: G1>G2, p=0.006 d=0.42 [a] (95% CI, 0.12 to 0.71) T2: No difference between G1 and G2, p=0.38 **Improvements in dissociation** (Trauma Symptoms Checklist – Dissociation Scale) T1: No difference between G1 and G2, p=0.44 T2: G1>G2, p=0.02, d=-0.39 [a] (-0.70 to -0.08)

Table 41. Results: Fostering Healthy Futures versus inactive control

First Author et al., Year	Comparison Groups	Mental and Behavioral Health Outcomes
Taussig & Culhane, 2010*[106] (continued)		**Positive and negative coping** (both, Coping Inventory), **Global self-worth, social acceptance** (both, Self Perception Profile for Children), T1, T2: No differences between G1 and G2
SOE Summary[b]	G1: Fostering Healthy Futures G2: Inactive Control	G1>G2, Low

[a] Cohen's *d* effect size index of the difference between groups means: 0.20 = small; 0.50 = medium; 0.80 = large.

[b]We present detailed strength of evidence grading tables in Appendix F. * = ITT analysis

Abbreviations: CI = confidence interval; G = group; SOE = strength of evidence; T = time.

Group Psychotherapy

Group Psychotherapy is a high-intensity, psychoanalytically-based group treatment for sexually abused girls. The treatment focuses on relationships among participants in the group, relationships between participants and the group facilitators (male and female co-therapists), and linking these relationships to past and current relationships, losses, and disruptions.[110] The comparative approach, also psychoanalytically-based, was child-centered Individual Psychotherapy (generally allowing the child to raise topics, although the therapist covered all topics). The two approaches shared generic and abuse-specific components including maintaining the therapeutic alliance, management of anxieties, and appropriate handling of postabuse and current concerns. Both approaches also included a caregiver-directed component comprising social work support (delivered in either a group or individual mode aligned with that of the child-directed component).We identified a single RCT examining the effectiveness of this Group Psychotherapy approach versus an Individual Psychotherapy approach (Table 39).[110]

Table 42. Group Psychotherapy: Study characteristics

First Author et al., Year Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Trowell et al., 2002[110] England	Symptomatic sexually abused girls ages 6 to 14 years	RCT T1: 1 year after start of therapy T2: 2 years after start of therapy	G1: Group Psychotherapy G2: Individual Psychotherapy	G1: 36 children G2: 35 children Overall N=71	Medium

Abbreviations: G = group; N = number; RCT = randomized controlled trial; SOE = strength of evidence; T = time.

Group Psychotherapy Versus Individual Psychotherapy

Trowell and colleagues (2002)[110] conducted an RCT comparing the relative efficacy of Group Psychotherapy (N=36) with Individual Psychotherapy (N=35) in addressing trauma and other symptoms of emotional or behavioral disturbance in sexually abused girls (Table 40). Nearly three-quarters of the sample had a DSM-IV diagnosis of PTSD (73%); the other main DSM-IV diagnoses in the sample were separation anxiety disorder (58%), major depressive disorder (57%), and general anxiety disorder (37%).

Table 43. Results: Group Psychotherapy versus Individual Psychotherapy

First Author et al., Year	Comparison Groups	Mental and Behavioral Health Outcomes
Trowell[110]	G1: Group Psychotherapy G2: Individual Psychotherapy	**Re-experience of traumatic events scale** (Orvaschel PTSD Scale) G1 < G2 T1: p=NR (sig), d=0.60 [a] T2: p=NR (sig), d=0.79 [a] **Persistent avoidance of stimuli** (Ovaschel PTSD Scale) G1 < G2 T1: p=NR (sig), d=0.66 [a] T2: p=NR (sig), d=0.36 [a] **Persistent symptoms of increased arousal** (Orvaschel PTSD Scale) No difference between G1 and G2 T1 and T2: p=NS (NR) **Impairment index** (Kiddie Global Assessment Scale) No difference between G1 and G2 T1 and T2: p=NS (NR)
SOE Summary[a]	G1: Group Psychotherapy G2: Individual Psychotherapy	G1 < G2, Low

[a] Cohen's *d* effect size index of the difference between groups means: 0.20 = small; 0.50 = medium; 0.80 = large.

[b] We present detailed strength of evidence grading tables in Appendix A.

Abbreviations: G = group; NR = not reported; NS = not significant; PTSD = post-traumatic stress disorder; SOE = strength of evidence; T = time.

The authors set a criterion of medium to large effect sizes (≥0.5) for reporting findings. At the first followup, 1 year after the start of therapy, children who participated in the individual psychotherapy condition exhibited significantly greater improvements in PTSD symptomatology compared with those in group psychotherapy: re-experiencing of traumatic events (p=NR; medium effect size) and persistent avoidance of stimuli dimensions (p=NR; medium effect size). These group-difference findings were sustained at the second followup (2 years post-entry into treatment) for re-experiencing symptoms (p=NR; medium effect size), again with greater improvements exhibited by children who participated in the individual compared with the group treatment condition. No significant between-group differences were found for the PTSD dimension of 'persistent symptoms of increased arousal' or for the K-GAS impairment index (p=NR; small effect size).

Play Therapy

The version of Play Therapy included in this review is a medium-intensity, directive play therapy treatment that addresses the trauma of abuse and/or neglect by building a therapeutic alliance between the therapist and young child and providing a corrective emotional experience with an attachment figure to support improved self-concept and adaptive coping skills. We identified one study comparing children who received Play Therapy in addition to participation

in a therapeutic nursery with children who only received the therapeutic nursery intervention (referred to as Milieu Therapy; Table 41).[111]

Table 44. Play Therapy: Study characteristics

First Author et al., Year, Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Reams et al., 1994[111] United States	Maltreated preschoolers	RCT 25 weeks (10 weeks post-therapy)	G1: Play Therapy + Milieu Therapy G2: Milieu Therapy alone	G1: 26 G2:15	Medium

Abbreviations: G = group; RCT = randomized controlled trial.

Play Therapy Plus Milieu Therapy versus Milieu Therapy Alone

An RCT by Reams and colleagues[111] compared the efficacy of time-limited individual Play Therapy for preschoolers participating in milieu therapy (a therapeutic nursery) (N=26) compared with milieu therapy alone (N=15). The study examined child anxiety and behavior problems (aggression and hyperactivity). We summarize study results in Table 42 and provide study details in the evidence tables (Appendix E). Investigators used several validated measures to assess mental and behavioral health outcomes; however, the amount of loss to followup was beyond our threshold for medium risk of bias (≥ 30%) on some measures. After including pretreatment scores into account in the analysis, no differences between groups were found on measures of anxiety and aggressive/hyperactive behavior (Preschool Behavior Questionnaire, p=NR (NS)). Researchers attributed the lack of findings to the fact that these children had already been receiving treatment via the therapeutic preschool for more than 1 year on average.

Table 45. Results: Play therapy

First Author et al., Year	Comparison Groups	Mental and Behavioral Health Outcomes	Healthy Development
Reams et al., 1994[111]	G1: Play Therapy + Milieu Therapy G2: Milieu Therapy alone	**Changes in anxiety** (Preschool Behavior Questionnaire) T1, T2: No differences between G1 and G2, p=NR (NS) **Changes in Aggression/Hyperactive Behavior** (Preschool Behavior Questionnaire) T1, T2: No differences between G1 and G2, p=NR (NS)	**Changes in level of intellectual functioning** (Peabody Picture Vocabulary Test – Revised Version) T1, T2: No differences between G1 and G2, p=NR (NS)
SOE Summary[a]	G1: Play Therapy + Milieu Therapy G2: Milieu Therapy alone	Insufficient	Insufficient

[a]We present detailed strength of evidence grading tables in Appendix F.

Abbreviations: G = group; NR = not reported; NS = not significant; SOE = strength of evidence; T = time.

Trauma-Focused Cognitive Behavioral Therapy

Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) is a low-to-medium intensity (that is, 12 to 16 weekly sessions) treatment that directly addresses trauma and other symptoms

children commonly experience following sexual abuse. A structured treatment, TF-CBT incorporates individual child, individual parent, and conjoint (parent-child) sessions. The intervention focuses on reducing the child's maladaptive responses to exposure to a traumatic event, namely sexual abuse, by using psychoeducation, feelings identification, exposure, enhancement of safety skills, and by increasing the parent's efficacy in coping with the child's challenging behaviors. We identified two RCTs comparing TF-CBT with active controls developed by the study authors (Table 43). One trial used a conventional practice (child-centered therapy[101]) and the other used a derived comparator designed to control for nonspecific aspects of the experimental intervention (referred to as non-directive supportive therapy).[112] We also identified one RCT that compared a group adaptation of TF-CBT with an active control, again developed by the authors. In this case, the comparator was a version of conventional supportive group practice.

Table 46. Trauma-Focused Cognitive Behavioral Therapy: Study characteristics

First Author et al., Year Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Cohen et al, 1996[112] United States	Sexually abused preschoolers (ages 2 to 7 years)	RCT 12 weeks over 12 to 16 weeks	G1: TF-CBT G2: Active control	G1: NR G2: NR Overall N=86	Medium
Cohen et al, 2004[101] United States	Sexually abused children (ages 8 to 14 years; mean age=10.76)	RCT 12 weeks	G1=TF-CBT G2=Active control	G1=114 G2=115 Overall N=229	Medium
Deblinger et al, 2001[113] United States	Sexually abused young children (ages 2 to 8 years; mean age 5.45)	RCT 11 weeks Followup: 3 months	G1=TF-CBT Group Adaptation G2= Active control	G1=22 G2=22 Overall N=44	Medium

Abbreviations: G = group; N = number; NR = not reported; RCT = randomized controlled trial; TF-CBT = Trauma-Focused Cognitive-Behavioral Therapy.

Trauma-Focused Cognitive Behavioral Therapy Versus active control

Two trials conducted by Cohen and colleagues[101, 112] found Trauma-Focused Cognitive Behavioral Therapy resulted in improvements in children's behavior problems compared with active control conditions among children exposed to sexual abuse. Both trials also examined child sexual behavior and internalizing symptoms but found inconsistent results across trials. The first trial was conducted with preschool-age children who had been sexually abused and their parents (N=86). Children were randomly assigned to either TF-CBT or an active control (a derived approach referred to as non-directive supportive therapy). The control condition provided supportive therapy to reduce isolation and hopelessness while improving emotion identification but did not explicitly address sexual abuse. The study examined children's social competence, behavior, internalizing and externalizing symptoms, and sexual behavior. We summarize study results in Table 44 and provide study details in the evidence tables (Appendix E). The study outcomes included improvements in overall behavior problems ($p<0.01$), improvements in internalizing symptoms ($p<0.002$) and improvements in sexual behavior problems ($p<0.05$) for children in the TF-CBT condition. The study found no significant differences between the TF-CBT and the control groups in social competence or externalizing behavior outcomes.

Table 47. Results: Trauma-Focused Cognitive Behavioral Therapy versus active control

First Author et al., Year	Comparison Groups	Mental and Behavioral Health Outcomes	Health Caregiver-Child Relationship Outcomes
Cohen et al, 1996[112]	G1: TF-CBT G2: Active control	**Improvements in social competence** (Child Behavior Checklist Social Competence) No differences between $G1^{ns}$ and $G2^{ns}$, p=NS, NR **Improvements in behavior** (Child Behavior Checklist Behavioral Profile-Total) $G1^{+}>G2^{ns}$, p<0.01 **Improvements in internalizing symptoms** (Child Behavior Checklist - Internalizing) $G1^{+}>G2^{ns}$, p<0.002 **Improvements in externalizing symptoms** (Child Behavior Checklist Externalizing) No differences between $G1^{+}$ and $G2^{ns}$, p=NS, NR **Improvements in sexual behaviors** (Child Sexual Behavior Inventory) $G1^{+}>G2^{ns}$, p<0.05	NA
Cohen et al, 2004[101]	G1:TF-CBT G2: Active control	**Decrease in re-experiencing of traumatic event** (Schedule for Affective Disorders and Schizophrenia for School-Aged Children Present and Lifetime Version – Re-experiencing) G1>G2, p<0.01, d=0.49[a] **Decrease in avoidance of reminders of traumatic event** (Schedule for Affective Disorders and Schizophrenia for School-Aged Children Present and Lifetime Version- Avoidance) G1>G2, p<0.001, d=0.70 [a] **Decrease in hypervigilance** (Schedule for Affective Disorders and Schizophrenia for School-Aged Children Present and Lifetime Version- Hypervigilance) G1>G2, p<0.01, d=0.40 [a] **Improvements in behavior** (Child Behavior Checklist Total) G1>G2, p<0.05, d=0.33 [a] **Improvements in social competence** (Child Behavior Checklist Competence) No differences between G1 and G2, p=NS, NR	**Parent self-report of depression** (Becks Depression Inventory) G1>G2, p<0.05, d=0.38 **Improved parenting practices** (Parenting Practices Questionnaire) G1>G2, p<0.001, d=0.57

Table 41. Results: Trauma-Focused Cognitive Behavioral Therapy versus active control (continued)

First Author et al., Year	Comparison Groups	Mental and Behavioral Health Outcomes	Health Caregiver-Child Relationship Outcomes
Cohen et al, 2004[101] (continued)		**Improvements in internalizing problems** (Child Behavior Checklist Internalizing) No differences between G1 and G2, p=NS **Improvements in externalizing** (Child Behavior Checklist Externalizing) No differences between G1 and G2, p=NS **Improvements in depression** (Children's Depression Inventory) G1>G2, p<0.05, d=0.30 [a] **Improvements in sexual behaviors** (Children's Depression Inventory) No differences between G1 and G2, p=NS, NR **Improvements in proneness to anxiety** (State-Trait Anxiety Inventory for Children Trait) No differences between G1 and G2, p=NS, NR **Improvements in fleeting anxiety** (State-Trait Anxiety Inventory for Children State) No differences between G1 and G2, p=NS, NR	
SOE Summary[a]	G1:TF-CBT G2: Active control	G1>G2, Low	G1>G2, Low

[a] Cohen's *d* effect size index of the difference between groups means: 0.20 = small; 0.50 = medium; 0.80 = large.

[b]We present detailed strength of evidence grading tables in Appendix F.

Abbreviations: G = group; NA = not applicable; NR = not reported; NS = not significant; SOE = strength of evidence; TF-CBT = Trauma-Focused Cognitive-Behavioral Therapy.

In the second RCT,[101] older children with histories of sexual abuse were randomly assigned to either TF-CBT (N=114) or an active control (conventional child-centered therapy) (N=115). The control condition focused on developing a trusting therapeutic alliance, with the child and parent allowed to direct the therapy goals; two sessions were directed towards processing the sexual abuse if the clients did not spontaneously talk about the abuse. The study examined trauma symptoms, social competence, behavior problems, sexual behavior problems, depression, and anxiety outcomes; the study also included parent depression and parenting practices outcomes. We summarize study results in Table 44 and provide study details in the evidence tables (Appendix E). The results of this RCT included decreases in re-experiencing of the abuse (p<0.01, small effect size), decreases in avoidance of reminders of the abuse (p<0.001, medium effect size), decreased hypervigilance (p<0.01, small effect size) and overall improvements in

behavior ($p<0.05$, small effect size) and depression ($p<0.05$, small effect size) for children who participated in the TF-CBT rather than Child-Centered Therapy. There were no significant differences between treatment groups in terms of internalizing problems, externalizing problems, social competence, sexual behavior problems, proneness to anxiety, and fleeting/state-related anxiety. In addition, parent participants in TF-CBT reported less depression ($p<0.05$, small effect size) and improved parenting practices $p<0.001$, medium effect size) than the parents in the control arm.

Trauma-Focused Cognitive-Behavioral Therapy Group Adaptation Versus Active Control

Deblinger and colleagues[113] conducted an RCT that examined the effectiveness of a group adaptation of the TF-CBT treatment model for young, sexually abused children and their parents compared with an active control group representative of conventional supportive group therapy. The TF-CBT parent group was delivered in fewer sessions than standard TF-CBT (11 sessions) and was oriented towards helping parents cope with their own reactions and communicate with their children about the abuse; the parent group also helped with behavior management skills. The supportive parent group focused on topics individual group members selected with an emphasis on active listening, unconditional positive regard and reflecting feelings. The children's TF-CBT and supportive educational groups were similar in content but differed in the methods used to deliver information and skills, with the former using an interactive behavioral therapy format and the latter using a didactic format. The parent and child groups in each condition ran concurrently. The study examined trauma symptoms, behavior problems, and sexual behavior problems outcomes as well as maternal emotional well-being outcomes (trauma symptoms and maternal distress) and parenting practices. We summarize study results in Table 45 and provide study details in the evidence tables (Appendix E). The study found no significant differences between groups in children's PTSD symptoms, behavior problems or sexual behavior problems. The mothers in the TF-CBT group reported significantly fewer intrusive thoughts about the abuse at the conclusion of the treatment ($p<0.05$), but there were no significant differences in maternal PTSD symptoms, improved parenting practices or maternal avoidant thoughts about the abuse across parent group conditions.

Key Points: Enhanced Foster Care Interventions

Overview:

- Two trials of enhanced early intervention foster care produced low evidence on child well-being outcomes (Table 46).[114-116, 118-120, 122, 123, 125, 126, 148]
- Although both trials were focused on young children, they differed greatly in setting and context: one trial investigated the effect of an enhanced foster care intervention with previously institutionalized young children while the other trial was in the context of the child welfare system in the United States.
- Both trials reported improvement in mental and behavioral health outcomes, caregiver-child relationship outcomes, and developmental outcomes
- Neither trial assessed school-based functioning outcomes.

Table 48. Results: Trauma-Focused Group Adaptation versus active control

First Author et al., Year	Comparison Groups	Mental and Behavioral Health Outcomes	Health Caregiver-Child Relationship Outcomes
Deblinger et al, 2001[113]	G1=TF-CBT Group Adaptation G2= Supportive Groups	**Changes in PTSD symptoms** No differences between G1 and G2, p=NS, NR **Changes in behavior** (Child Behavior Checklist) No differences between G1 and G2, p=NS, NR **Changes in sexual behaviors** (Child Sexual Behavior Inventory) No differences between G1 and G2, p=NS, NR	**Maternal PTSD symptoms** (Symptom Checklist-90-Revised) No differences between G1 and G2, p=NS, NR **Improved parenting practices** (Parenting Practices Questionnaire) No differences between G1 and G2, p=NS, NR **Maternal distress-intrusive thoughts** (Impact of Events Scale) G1>G2, p<0.05 **Maternal distress-avoidant thoughts** (Impact of Events Scale) No differences between G1 and G2, p=NS, NR
SOE Summary[a]	G1=TF-CBT G2= Active control	Insufficient (no difference)	Insufficient (no difference)

[a]We present detailed strength of evidence grading tables in Appendix F.

Abbreviations: G = group; NR = not reported; NS = not significant; PTSD = Post-traumatic stress disorder; TF-CBT = Trauma-focused cognitive-behavioral therapy.

Table 49. Enhanced Foster Care Interventions: strength of evidence for child well-being outcomes[a]

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence[b] Magnitude of Effect[c]	Study Population
Multidimensional Treatment Foster Care for Preschoolers	Usual care	Mental health and behavior	1,[126, 148] 117	Low Medium (d=0.64 to 0.68)	Early to middle childhood, foster parent
		Healthy caregiver-child relationship	1,[123, 125] 117	Low	
		Healthy development	1,[122] 23	Low	
Bucharest Early Intervention Project	Usual care (institutional Care in Romania)	Mental health and behavior	1,[114-116] 136	Low Odds Ratio 2.8 [95%CI 1.2 to 6.4]	Institutionalized children, foster caregivers
		Healthy caregiver-child relationship	1,[120]136	Low	
		Healthy development	1,[118, 119] 136	Low Effect Size[d] =0.47 or 0.62	

[a]We order the results in the summary tables by strength of evidence, taking into consideration the size of the body of evidence (e.g., number of trials and participants), magnitude of effect, and duration of intervention outcomes.

[a]All SOE results are G1>G2 unless noted otherwise.

[c]For estimation of the magnitude of effect, we include only the statistically significant ($p<0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as: Cohen's d = 0.20, 0.50, and 0.80

[d]Effect size measure is not specified, therefore we did not classify the magnitude of effect as small, medium, or large.

Bucharest Early Intervention Project Versus Institutional Care

- **Mental and behavioral health**: The Bucharest Early Intervention Project intervention resulted in improvements in numerous outcomes compared with usual (institutional) care: child attention, affect (capacity for positive emotional expression), internalizing disorders, and anxiety disorders, and stereotypes associated with severe deprivation and social isolation (low strength of evidence).[114-116]
- **Healthy caregiver-child relationship**: The Bucharest Early Intervention Project intervention resulted in improvements in child attachment behavior compared with children who remained in usual care (low strength of evidence).[120]
- **Healthy development**: The Bucharest Early Intervention Project intervention resulted in improved cognitive functioning compared with usual care (low strength of evidence).[118]

Multidimensional Treatment Foster Care for Preschoolers Versus Usual Care

- **Mental and behavioral health**: Children who participated in the Multidimensional Treatment Foster Care for Preschoolers intervention exhibited more normative cortisol levels compared with children in usual care (low strength of evidence).[122, 126, 148]
- **Healthy caregiver-child relationship**: The Multidimensional Treatment Foster Care for Preschoolers intervention resulted in improved child attachment behaviors and reduced caregiver stress related to child problem behaviors compared with usual care (low strength of evidence).[123, 125]
- **Healthy development**: The Multidimensional Treatment Foster Care for Preschoolers intervention resulted in more positive electrophysiological indicators of cognitive functioning compared with usual care; however, no statistically significant difference was found between Multidimensional Treatment Foster Care for Preschoolers and usual care in behavioral assessment of cognitive functioning (low strength of evidence).[122]

Detailed Synthesis: Enhanced Foster Care Interventions

Bucharest Early Intervention Project

Bucharest Early Intervention Project (BEIP) is a landmark research trial testing an enhanced foster care intervention designed to ameliorate the effects of institutionalization (i.e., early social deprivation; Table 47). The investigators collaborated with the Romanian government and child protection authorities to implement a high-intensity model of enhanced supports to foster parents adopting infants and toddlers from institutional care in Bucharest, Romania. The intervention was delivered via a team of social workers trained in infant mental health who focused on supporting the parent-child attachment relationship in their counseling work with parents. More specifically, the foster care intervention provided (a) frequent in-home monitoring of child adjustment, in-home developmental stimulation, and behavioral intervention provided by the social work team, (b) service referrals, and (c) foster parent support groups. The intervention model is based on a similar multipronged approach developed by one of the study authors and implemented in the United States.[121]

A collaborative, multidisciplinary team of researchers conducted this longitudinal single RCT. Results relevant to KQ 1 are in reported in six articles.[114-116, 118-120]

Table 50. Bucharest Early Intervention Project vs. institutional care: Study characteristics

First Author et al., Year Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Bos et al., 2010,[114] Ghera et al., 2009,[115] Marshall et al., 2008,[119] Nelson et al., 2007,[118] Zeanah et al., 2009[116] Romania	Institutionalized children (Mean age=23.1, SD=6.8, Range 6 to 30 months)	RCT 54 months [a]	G1:Foster care G2: Institutional care	G1: 68 G2: 68	Low

Abbreviations; RCT = randomized controlled trial; SD = standard deviation.

[a] Ghera et al., 2009, Marshall et al., 2009, and Smyke, 2010 assess outcomes at 42 months

[b] Marshall et al, 2008 G1: 56, G2: 41

Bucharest Early Intervention Project Versus Institutional Care

Initially, 187 children residing in one of six institutions for young abandoned children received pediatric and neurological exams, growth measurement, auditory testing, and assessment for physical abnormalities. As a result, 51 children were determined ineligible for the study due to medical reasons, such as genetic syndromes, observable characteristics of fetal alcohol syndrome, and microcephaly. The remaining 136 children were randomly assigned to the BEIP foster care intervention (n=68) or remained in institutional care (n=68). The primary inclusion criterion was for children to have entered their resident institution prior to 31 months of age. Primary outcomes, examined at 30, 42, and 54 months included psychiatric disorders, affective expression, attachment classification, developmental and intellectual functioning, and brain maturation. We summarize study results in Table 48 and provide study details in the evidence tables (Appendix E).

Mental and behavioral health outcomes were evaluated in three articles. Ghera and colleagues examined children's attention, positive affect, and negative affect at ages 30 and 42 months.[115] In this intent-to-treat design, children in the institutional care group were retained for analysis whether they remained in or exited institutional care. At 30 months, attention levels in the two groups did not differ significantly ($p>0.05$), although by 42 months the foster care group children's attention levels were significantly higher than institutional care group children ($p=0.01$). Children in the foster care group condition displayed more positive affect at 30 and 42 months ($p<0.001$ at both times). At neither time point did negative affect vary significantly between groups ($p>0.05$).

Zeanah and colleagues[116] examined psychiatric disorders in the foster care and institutional care groups at 54 months using a caregiver report measure that queried the presence, frequency, duration, and age at onset of symptoms corresponding to those in the American Psychiatric Association Diagnostic and Statistical Manual.[157] Scoring algorithms correspond to DSM diagnoses and to composite, categorical diagnoses, such as internalizing and externalizing disorders. Logistic regression analysis resulted in odds ratios that expressed disorder prevalence in terms of odds ratios that indicated prevalence of diagnostic categories in the institutional care group relative to the foster care group. A trend ($p=0.10$) suggested that children in institutional care may experience disorders, of any type, at higher rates than children in the foster care group

Table 51. Results: Bucharest Early Intervention Project versus institutional care in Romania

First Author et al., Year	Comparison Groups	Mental and Behavioral Health Outcomes	Health Caregiver-Child Relationship Outcomes	Healthy Development Outcomes
Ghera et al., 2009	G1:Foster care G2: Institutional care group	**Attention** (Lab-TAB) T1: No difference between groups G1 and G2, p>0.05 T2: G1^{+}>G2, p=0.01 **Positive Affect** T1: G1^{+}>G2, p<0.001 T2: G1^{+}>G2, p<0.001 **Negative Affect** T1, T2: No difference between groups G1 and G2, p>0.05	NA	NA
Zeanah et al., 2009	G1:Foster care G2: Institutional care	**Psychiatric Disorder** (Preschool Age Psychiatric Assessment) **Any Disorder** G1>G2, p=0.10, trend **Any Externalizing**, No difference between G1 and G2, p=0.69 **Any Internalizing** G1> G2, p=0.01, OR 2.8 [a] (95% CI, 1.2 to 6.4) **ADHD** No difference between G1 and G2, p=0.57 **Opp. Defiant or Conduct D/O** No difference between groups G1 and G2, p=0.57 **Depression:** No difference between G1 and G2, p=0.50 **Any Anxiety:** G1>G2, p=.01, OR 2.9 [a] (95% CI, 1.2 to 6.6) **Comorbid D/O≥2**: No difference between G1 and G2, p=0.53	NA	NA
Bos et al., 2010[114]	G1:Foster care G2: Institutional care	**Presence of Stereotypes** (Preschool Age Psychiatric Assessment) T1: G1>G2, p=0.003 T2: G1>G2, p=0.001 T3: G1>G2, p=0.04	NA	NA

Table 45. Results: Bucharest Early Intervention Project versus institutional care in Romania (continued)

First Author et al., Year	Comparison Groups	Mental and Behavioral Health Outcomes	Health Caregiver-Child Relationship Outcomes	Healthy Development Outcomes
Smyke et al., 2010[120]	G1:Foster care G2: Institutional care	NA	**Attachment at 42 months** (Strange Situation) **Distribution of Attachment Types:** G1>G2, p<0.001 **Organized v. Atypical** G1>G2, p<0.01 **Secure v. Insecure** G1>G2, p<0.001 **Mean Attachment Security Rating** (Observation, score 0 to 9) G1>G2, p<0.001	
Nelson et al., 2007[118]	G1:Foster care G2: Institutional care	NA	NA	**Developmental/Intellectual Quotient** (Bayley Scales of Infant Development, Wechsler Preschool and Primary Scale of Intelligence) T1: G1>G2, p=0.001, ES=0.62 T2: G1>G2, p=0.015, ES=0.47
Marshall et al., 2008[119]	G1:Foster care G2: Institutional care	NA	NA	**EEG signal power and coherence** EEG Power (Absolute) No difference between groups G1 and G2, p=NR, NS. **EEG Coherence** No difference between groups G1 and G2. p=NR, NS.
SOE Summary[a]	G1:Foster care G2: Institutional care	G1>G2, Low	G1>G2, Low	G1>G2, Low

[a] Odds ratio indicator of probability: no association is represented by 1, the greater the departure from 1 the stronger the relationship.

[b]We present detailed strength of evidence grading tables in Appendix F.

Abbreviations: ADGD = attention deficit hyperactivity disorder; G = group; Lab-TAB = Laboratory Temperament Assessment Battery; NA = not applicable; OR = odds ratio; SOE = strength of evidence; T = time.

by 54 months of age. Externalizing disorders did not occur at significantly different rates (p=0.69), although internalizing disorders were more common in institutional care group children (p=0.01). The institutional care group children were also more likely to meet criteria for

an anxiety disorder (p=0.01). No significant group differences were observed for attention deficit hyperactivity disorder (ADHD, p=0.57). Prevalence differences were absent for disruptive disorders (oppositional defiant disorder, conduct disorder, p=0.57) and depressive disorder (p=0.50). The intervention and control groups did not differ significantly in terms of diagnostic comorbidity (p=0.53 for the presence of two or more diagnoses). In another article examining psychiatric problems, Bos et al.[114] reported reductions in stereotypic behaviors often observed in contexts of deprivation and institutionalization, with improvements favoring the foster care group at ages 30 months (p=0.003), 42 months (p=0.001), and 54 months (p=0.04).

In the area of caregiver-child relationships, children's attachment behavior was examined at 42 months.[120] At this age, children in the foster care group displayed more positive change in their primary attachment relationships with an overall shift toward secure attachment (p<0.001). Analyses that applied more stringent attachment classification (i.e., secure, avoidant, and ambivalent classifications) and atypical (i.e., disorganized-controlling) continued to favor foster care group children (p<0.01), as did the contrast between secure attachment when compared with all other types (p<0.001).

Other researchers investigated the efficacy of BEIP in promoting children's cognitive development. Nelson and colleagues[118] compared children's mental development scores (Developmental Quotient or DQ, measured using the Bayley Scales of Infant Development-II Mental Development Index) and intellectual ability (Intellectual Quotient or IQ, measured using the Wechsler Preschool and Primary Scale of Intelligence- Revised) at 42 and 54 months. At both ages, the foster care group outperformed the institutional care group (p=0.001, 42 months; p=0.015, 54 months). As an effect size, the difference was in the moderate to large range at 42 months (ES=0.62) and moderate at 54 months (ES=0.47). Regression analyses of 42-month DQ and 54-month IQ on baseline DQ score allowed estimation of time of how time in institutional care influences cognitive functioning. By 42 months of age, each additional month of institutional care was associated with a DQ decrement of 0.85 points, corresponding to roughly two-thirds of a standard deviation annually. One month of care was associated at 54 months with a decrement of 0.59 IQ points, approximately one-half standard deviation in a year's time.

Marshall and colleagues[119] further investigated the effect of BEIP on children's cognitive functioning at the neurophysiological level, comparing electroencephalogram (EEG) band power and coherence (as indices of neurological maturation and cortical functioning) across the study conditions at the 42-month followup. EEG band power reflects the rhythmicity of the EEG signal across different frequency bands. EEG coherence signifies the degree of synchronization between measurements from two different cortical areas; decreased coherence is thought to reflect greater brain complexity and differentiation. Foster care group and institutional care group children were assessed at the 18-, 30-, and 42-month follow-up time points; however, data in the article are reported for only the 42-month findings. Analyses revealed no significant differences between foster care group and institutional care group for band power (p=NS, NR for theta, alpha, and beta bands) or coherence (p=NS, NR). Additional analyses examined EEG band power and coherence differences and the effects of placement age. A group by hemisphere interaction indicated lower right hemisphere mean coherence for the foster care group (p<0.05). Post hoc analysis of the interaction of placement age, defined as greater or less than 24 months, with EEG outcomes revealed higher band power (p=0.06) and lower coherence in the foster care group than the institutional care group. Significant group differences occurred in the interaction of placement age, and these outcomes were not detected for children placed beyond 24 months. Contrary to expectations, the results did not support the existence of specific EEG patterns that

differentiated the foster care group from the institutional care group. Distinctions were evident for children placed in foster care earlier than 24 months and not for those placed beyond age 24 months. Although results of their analyses were mixed, the authors suggested that EEG measurements may be useful in detecting treatment outcome for foster children with an earlier age of placement.

Multidimensional Treatment Foster Care for Preschoolers

Multidimensional Treatment Foster Care for Preschoolers (MTFC-P) is an adaptation of the Multidimensional Treatment Foster Care model for adolescents for young children in foster care. It is a high-intensity intervention with multiple components directed at the child, foster or kin caregiver, and permanent placement resource (birth parents and adoptive relatives or nonrelatives). Intervention strategies are delivered by a treatment team and comprise: intensive preplacement foster parent training, ongoing supportive foster parent consultation and supervision, 24-hour crisis intervention, foster parent support groups, weekly therapeutic playgroup sessions for the child, child services from a behavioral specialist, medication management for child mental and behavioral health symptoms, and family therapy. We identified one RCT (Table 49) comparing MTFC-P to usual foster care services in four published articles.[122, 123, 125, 126]

Table 52. Multidimensional Treatment Foster Care for Preschoolers versus usual care: Study characteristics

First Author et al., Year Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Fisher et al.,, 2007,[123] Fisher et al., 2007,[126] Fisher & Stoolmiller, 2008,[125] and Bruce et al., 2009,[122] Fisher et al., 2011[148] United States	Ages 3 to 6 years foster children in new placement, expected duration>3 months	RCT 12 months [a]	G1: MTFC-P G2 Usual care	G1: 57 [a] G2: 60 [a]	Medium

Abbreviations: G = group; MTFC-P = Multidimensional Treatment Foster Care for Preschoolers; NR = not reported; RCT = randomized controlled trial.

[a] Bruce et al., 2009 timing of assessment is not specified, G1: 10, G2: 13

Multidimensional Treatment Foster Care for Preschoolers Versus Usual Care

One RCT examining the effectiveness of the MTFC-P approach span seven articles, four of which reported outcomes relevant to KQ 1. We summarize study results in Table 50 and provide study details in the evidence tables (Appendix E).

Fisher and colleagues examined the effect of MTFC-P on morning (AM) and evening (PM) cortisol levels and morning-to-evening (AM-PM) cortisol level changes in a sample of preschool-age children in foster care.[126] Cortisol is an indicator of neurobiological response to stress and serves as a proxy indicator of regulation and functioning of the hypothalamic-pituitary-adrenal (HPA) axis, itself activated by physical and psychological stressors. Under usual circumstances, absent such stressors, cortisol peaks in morning and late afternoon, with the

Table 53. Results: Multidimensional Treatment Foster Care for Preschoolers versus usual care

First Author et al., Year	Comparison Groups	Mental and Behavioral Health Outcomes	Health Caregiver-Child Relationship Outcomes	
Fisher & Kim, 2007[123]	G1: MTFC-P G2: Usual care	NA	**Improved Trajectory (Increase) in Secure Attachment Behavior** (Parent Attachment Diary) G1>G2, p<0.05 **Improved Trajectory (Decrease) in Avoidant Attachment Behavior** (Parent Attachment Diary) G1>G2, p<0.05 **Improved Trajectory (Decrease) in Resistant Attachment Behavior** (Parent Attachment Diary) No difference between G1[+] and G2[+], p=NS(NR)	
Fisher et al., 2007[126]	G1: MTFC-P G2: usual care	**Decrease AM-PM Change in Diurnal Salivary Cortisol** G1[ns]>G2: p=0.040, d=-0.64[a] **Decrease AM Cortisol level** G1[ns] >G2, p=0.027, d=-0.66 [a] **Decrease PM Cortisol level** G1[+] >G2, p=0.019, d=-0.68 [a]	NA	
Fisher & Stoolmiller, 2008[125]	G1: MTFC-P G2: usual care	NA	**Decrease in Caregiver Stress Related to Child Problem Behaviors** (Parent Daily Report) T1: G1[+] >G2, p=0.009 T2: No difference between group G1 and G2, p=0.734	
Bruce et al., 2009[122]	G1: MTFC-P G2: usual care	NA	NA	**Cognitive Control and Response Monitoring** (Flanker Task) **Errors of Commission**, No difference between G1 and G2, p=NR(NS) **Reaction Time** No difference between G1 and G2, p=NS(NR)

Table 47. Results: Multidimensional Treatment Foster Care for Preschoolers versus usual care (continued)

First Author et al., Year	Comparison Groups	Mental and Behavioral Health Outcomes	Health Caregiver-Child Relationship Outcomes	
Bruce et al., 2009[122] (continued)				**EEG ERP in Response to Feedback Response Locked Components** G1>G2, , p<0.01 **Feedback Locked Components** G1>G2, p<0.01
Fisher et al., 2011[148]	G1: MTFC-P G2: RFC	More typical patterns of morning-to-evening cortisol levels following placement changes G1>G2, p<0.001	NA	NA
SOE Summary[b]	G1: MTFC-P G2: usual care	G1>G2, Low	G1>G2, Low	G1 vs. G2, Insufficient

[a] Cohen's *d* effect size index of the difference between groups means: 0.20 = small; 0.50 = medium; 0.80 = large.

[b]We present detailed strength of evidence grading tables in Appendix F.

Abbreviations: AM = ante meridiem; EEG = electroencephalogram; ERP = Event Related Potentials; G = group; MTFC-P = Multidimensional Treatment Foster Care for Preschoolers; NA = not applicable; NR = not reported; NS = not significant; PM = post meridiem; SOE = strength of evidence; T = time.

higher of the two peaks occurring in the morning. Children were randomly assigned to receive MTFC-P (n=57) or regular foster care (usual care; n=60). Caregivers were trained to collect salivary cortisol twice daily for two consecutive days in each of 12 months. At the outset of the study, group cortisol levels were quite similar. Changes over time were significant for each of the three measures with a pattern of relative stability for the MFTC-P group and significant decline for the usual care group for AM-PM change (p=0.040), AM level (p=0.027), and PM level (p=0.019). The changes observed in cortisol correspond to medium effect sizes (Cohen, 1988) and were calculated at –0.64, –0.66, and –0.68 for, respectively AM-PM, AM, and PM.

In a second paper examining mental and behavioral health outcomes, Fisher examined the impact of foster care placement changes on HPA axis functioning, namely cortisol production. This paper focused on a subset of subjects who had participated in an RCT of MTFC-P.[148] Seventy-one children (61% of the original sample) experienced a change in placement during the six months of the study duration. Fisher found that children who had been in MTFC-P experienced more typical morning-to-evening cortisol levels (e.g., higher in the morning and lower in the evening) following a placement change than children in regular foster care did following a placement change. Regular foster care subjects had relatively blunted cortisol patterns from morning to evening. This means that children who were in the MTFC-P likely experienced less physiological stress in relation to the placement changes than did children in regular foster care.

In other articles, Fisher and colleagues[123, 125] examined outcomes reflective of the caregiver-child relationship. In one article,[125] the metric for stress in response to child problem behaviors consisted of the proportion of child problem behaviors reported as stressful by the caregiver

relative the total number of possible behavioral issues on a daily report form. Outcomes collected over the course of 12 months were analyzed in terms of early (months 1 to 2) and late effects (months 3 to 12). The pattern for MTFC-P caregivers compared with their usual care counterparts was one of early decline in stress during the initial 2 study months (p=0.009) that remained stable over the ensuing 10 months (p=0.734). Initially, mean stress levels were similar between the two groups (p=0.336); however, as time progressed, stress in response to problem behavior exerted a greater influence for the usual care group (p=0.0096). Relative to usual care, foster parents receiving MTFC-P experienced an early decrease in stress related to the foster child's problem behaviors that was maintained thereafter. Overall stress levels were lower for MTFC-P than for usual care, where caregivers appeared to become more sensitive to stress as time progressed.

Another article examined treatment effects from the perspective of attachment behaviors as reported by caregivers on the Parent Attachment Diary (PAD).[123] During 12 months of quarterly assessments, children receiving MTFC-P increased their secure attachment behaviors (p<0.05) and decreased their accompanying avoidant attachment behaviors (p<0.05) relative to usual care children. Similar changes were not evident for change in resistant behaviors over time (p=NS(NR)). In other words, MTFC-P children experienced a shift in attachment behaviors that consisted of increasing secure behavior accompanied by decreasing avoidant behavior. Although based solely on caregiver ratings, the findings are consistent with MTFC-P increasing children's secure attachment behaviors over time and with significant improvement relative to their peers receiving usual care.

In a fourth article reporting on the MTFC-P trial, Bruce and colleagues examined developmental functioning via children's behavioral performance during cognitive tasks (cognitive control and response monitoring) and electrophysiological response (a substrate of cognitive processing) to cognitive tasks.[122] MTFC-P children (n=10) did not differ significantly from usual care children (n=13) on tasks of self-monitoring ("errors of commission") or reaction time to response (p=NR(NS)). Electrophysiological responses ("event related potentials") to external stimuli ("response locked" and "feedback locked" conditions) assessed by EEG monitoring during cognitive tasks improved for MTFC-P relative to usual care (Response Locked F=5.66, p<0.01; Feedback Locked, F=5.82, p<0.01).

Key Question 2. Comparative Effectiveness of Interventions for Improving Child Welfare Outcomes

Organization

As in KQ 1, we organize KQ 2 by intervention type. Each subsection presents the key points pertaining to the intervention type, which summarizes the main findings for each comparison and the strength of evidence grade. Following the key points, a detailed synthesis section provides information about the experimental intervention and comparator of each study and detail regarding study characteristics and results.

Description of Included Studies

We identified seven RCTs (reported in nine articles) that examined the child welfare outcomes of safety, placement stability, or permanency (Table 51).[85, 86, 90, 91, 94, 124, 127, 128] Five trials assessed parenting interventions[85, 86, 90, 91, 94] and two assessed enhanced foster care

interventions.[121, 124, 127, 128] The included studies used different measures of safety, placement stability, or permanency. Safety was assessed in terms of incidence, time to incidence, and/or severity of maltreatment recurrence based on reports to child protective services and/or hospital data. Placement stability was measured in terms of number of placement disruptions (a child being moved to another foster care placement) and/or length of time in a placement prior to disruption. Permanency outcomes were defined variously across studies. One trial assessed permanency outcomes in terms of number of placement failures, attempts at permanence placement, and placement successes.[124, 127, 128] Another trial reported positive exits sustained during the study period (i.e., reunification with the biological parent or another relative or adoption), which we considered a measure of permanency.[85] A third trial examined length of time in foster care (i.e., time to permanency) and frequency of different permanency outcomes (e.g., reunification, termination of parental rights, surrender, relative placement).[121]

Table 54. Number of trials and articles investigating child welfare outcomes by intervention type

Intervention	Trials (Articles)
Parenting Interventions	**Total 5**
Keeping Foster and Kinship Parents Trained and Supported[85]	1
Nurse Home Visitation Intervention[86]	1
Parent-Child Interaction Therapy Adaptation Package[90, 91]	2
Project Support[94]	1
Enhanced Foster Care Interventions	**Total 1**
Multidimensional Treatment Foster Care for Preschoolers[124, 127, 128]	1 [a]
New Orleans Intervention[121]	1
Total	**7**

[a] Reported in three articles

Key Points: Parenting Interventions

Overview:

- Five trials of parenting interventions produced low or insufficient evidence on child welfare outcomes (Table 52).[85, 86, 90, 91, 94]
- One trial was directed at foster and kinship parents and examined negative placement changes (a placement stability-related outcome) and positive placement exits (a permanency-related outcome);[85] four trials were directed at the maltreating caregiver and assessed maltreatment recurrence (safety outcome).[86, 90, 91, 94]
- Two trials assessed various permutations of an intervention that was adapted for the child welfare context augmented with or without a motivational intervention orientation compared with a standard parenting program and preservice orientation.[90, 91]

Table 55. Parenting Interventions: Strength of evidence for child welfare outcomes[a]

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of evidence[b] Magnitude of effect[c]	Study population
Parent-Child Interaction Therapy(PCIT) Adaptation Package[d]	PCIT Adaptation Package enhanced[e]	Safety	1,[91] 75	Insufficient	Early childhood to early adolescence, maltreating caregiver
	PCIT + standard orientation	Safety	1,[90] 70	Low Hazard Ratio=0.10	
	Usual care + standard orientation	Safety	2,[90,91] 153	Low	
	Usual care + Motivational Intervention	Safety	1,[90] 70	Low Hazard Ratio=0.11	
Keeping Foster and Kinship Parents Trained and Supported	Usual care	Placement Stability	1,[84] 700	Insufficient	Early childhood to early adolescence, foster caregiver
		Permanency	1,[84] 700	Low	
Nurse-Home Visitation Intervention	Usual care	Safety	1,[86] 163	Insufficient	Early childhood to early adolescence, maltreating parent
Project Support	Usual care	Safety	1,[94] 35	Insufficient	Early to middle childhood, maltreating parent

[a]We order the results in the summary tables by strength of evidence, taking into consideration the size of the body of evidence (e.g., number of trials and participants), magnitude of effect, and duration of intervention outcomes.

[b]All SOE results are G1>G2 unless noted otherwise.

[c]For estimation of the magnitude of effect, we include only the statistically significant ($p<0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis.

[d]"Package" refers to the inclusion of a supplemental motivational intervention orientation.

[e]"Enhanced " refers to the provision of individualized services to the parents.

Keeping Foster and Kinship Parents Trained and Supported Versus Usual Care

- **Permanency**: Keeping Foster and Kinship Parents Trained and Supported resulted in a greater proportion of positive exits from foster care (reunification with biological parent or another relative or adoption for the duration of the study period) compared with usual care group (low strength of evidence).

Nurse Home Visitation Intervention Versus Usual Care

- **Safety**: No statistically significant difference in maltreatment recurrence, based on child protective services records, was found comparing a Nurse Home Visitation Intervention with usual care; however, hospital records showed fewer cases of maltreatment recurrence in the usual care condition compared with the experimental intervention (insufficient evidence).

Parent-Child Interaction Therapy Adaptation Package Versus Parent-Child Interaction Therapy Adaptation Package Enhanced

- **Safety***:* The Parent-Child Interaction Therapy Adaptation Package is an adaptation of standard Parent-Child Interaction Therapy to address physically abusive or neglectful parenting; the package includes a supplemental motivational intervention orientation component. No statistically significant difference in maltreatment recurrence was found comparing Parent-Child Interaction Therapy Adaptation Package with an enhanced model that included individualized services and home visiting to reinforce skills learned during the clinical sessions in addition to the Parent-Child Interaction Therapy Adaptation Package model (insufficient evidence).[91]

Parent-Child Interaction Therapy Adaptation Package Versus Usual Care

- **Safety***:* The Parent-Child Interaction Therapy Adaptation Package approach resulted in decreased maltreatment recurrence when compared with usual care group (a standard parenting program and orientation) (low strength of evidence).[90, 91]

Enhanced Parent-Child Interaction Therapy Adaptation Package Versus Usual Care

- **Safety***:* No statistically significant difference in maltreatment recurrence, based on child protective services records, was found comparing the Enhanced Parent-Child Interaction Therapy Adaptation Package intervention with usual care group (insufficient evidence).[91]

Parent-Child Interaction Therapy Adaptation Package Versus Parent-Child Interaction Therapy Adaptation with Usual Care Orientation

- **Safety***:* The Parent-Child Interaction Therapy Adaptation Package decreased maltreatment recurrence when compared with the Parent-Child Interaction Therapy Adaptation used in conjunction with the usual care orientation (in lieu of the motivational intervention orientation) (low strength of evidence).[90]

Parent-Child Interaction Therapy Adaptation Package Versus Usual Care with Motivational Intervention

- **Safety***:* The Parent-Child Interaction Therapy Adaptation Package approach decreased maltreatment recurrence when compared with the usual parenting program used in conjunction with the motivational intervention orientation (low strength of evidence).[90]

Project Support Versus Usual Care

- **Safety***:* No statistically significant difference in maltreatment recurrence was found comparing the Project Support intervention with usual care group (insufficient evidence).

Detailed Synthesis: Parenting Interventions

Keeping Foster and Kinship Parents Trained and Supported

We identified one large RCT comparing the effectiveness of Keeping Foster and Kinship Parents Trained and Supported (KEEP) intervention with a usual care group for improving child welfare outcomes. See Table 53 and the KQ 1 Results section for detail about the intervention.[85]

Table 56. Keeping Foster and Kinship Parents Trained and Supported: Study characteristics

First Author et al., Year Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Price et al., 2008[85] United States	Ages 5 to12 years. foster children placed ≥30 days	RCT Placement status assessed at intervention end or 2 to 11 mos. post-baseline (if child exited current placement prior to intervention end) Child exits within 200 days (approx. 6.5 months) postbaseline	G1: KEEP G2: usual care	G1; 359 G2: 341	Medium

Abbreviations: G = group; KEEP = Keeping Foster and Kinship Parents Trained and Supported; RCT = randomized controlled trial.

Keeping Foster and Kinship Parents Trained and Supported versus Usual Care

The RCT sample comprised 700 children ages 5 to 12 years and their foster or kinship caregivers; 359 were randomly assigned to KEEP and 341 to usual child welfare casework services (usual care). We summarize study results in Table 54 and provide study details in the evidence tables (Appendix E). Using child welfare records, the study authors examined negative placement changes (e.g., child being moved to a new foster care placement, a more restrictive environment such as psychiatric care or juvenile detention center, or child runaways), as a measure of placement instability. The authors also examined positive placement changes defined as positive exits from foster care such as reunification with the biological parent or another relative or adoption. Although these positive placement exits were not identified as permanency outcomes in the study, we categorized them as such here with the caveat that they were outcomes sustained for the duration of the study. Results from Cox Hazard Regression revealed children in

KEEP were twice as likely to exit their foster or kinship placement home for positive reasons compared with those in the usual care group (p=0.005). However, rates of negative placement changes were not significantly different between the two groups (p=0.64).

Table 57. Results: Keeping Foster and Kinship Parents Trained and Supported versus usual care

First Author et al., Year	Comparison Groups	Placement Stability	Permanency
Price et al., 2008[85]	G1: KEEP G2: Usual care	**Percentage with Negative Placement Change** No difference between G1 and G2, p=NR (ns)	**Percentage with Positive Placement Exit** G1 > G2, p=0.005
SOE Summary	G1: KEEP G2: Usual care	G1 vs. G2, insufficient – no difference	G1>G2, low

Abbreviations: G = group; KEEP = Keeping Foster and Kinship Parents Trained and Supported; NR = not reported; ns = not significant; SOE = strength of evidence.

Nurse Home Visitation Intervention

We identified one RCT comparing the effectiveness of a Nurse Home Visitation (NHV) intervention with a usual care group for improving child welfare outcomes. See Table 55 and the KQ 1 Results section for detail about the intervention.[86]

Table 58. Nurse Home Visitation Intervention: Study characteristics

First Author et al., Year County	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
MacMillan et al., 2005[86] Canada	Physically abused or neglected children 13 years and younger and their primary caregivers	RCT T1: 1 year postbaseline T2: 2 years postbaseline T3: 3 years postbaseline	G1: NHV G2: usual care	G1: 89 G2: 74 Overall N=163	Medium

Abbreviations: G = group; n = number; NR = not reported; ns = not significant; NHV = Nurse Home Visitation.

Nurse Home Visitation Intervention Versus Usual Care

In one RCT conducted in Canada, MacMillan and colleagues (2005)[86] examined the efficacy of an NHC intervention (N=89) compared with a standard services control group (usual care, N=74) for children 13 years and younger and their families. All child participants had a history of recent physical abuse or neglect (within the last 3 months). We summarize study results in

Table 56 and provide study details in the evidence tables (Appendix E). The authors used both child protective services (CPS) records and hospital records to assess safety outcomes. Based on the CPS data, no significant differences emerged in favor of the NHV on any of the safety measures: incidence of physical abuse, days to first incident of physical abuse, or severity of physical abuse incidents (all ps=NS). There was a borderline significant difference between the intervention and comparison groups in the severity of neglect incidents (p=0.053), favoring the intervention group; however, the authors indicate that the difference was “not clinically important.” The no-difference finding using the CPS data was not consistent with hospital data, which showed the recurrence of physical abuse and/or neglect was more likely in the NHV group than the usual care group (23.8 percent versus 10.8 percent, p=NR, significant).

Table 59. Results: Nurse Home Visitation Intervention versus usual care

First Author et al., Year	Comparison Groups	Safety
MacMillan et al., 2005[86]	G1: NHV G2: Usual care	**Incidence of physical abuse and/or neglect, days to first incident of physical abuse or neglect, severity of physical abuse** All, p=NS **Severity of neglect** G1 > G2, p=0.053 **Recurrence of physical abuse or neglect** G1<G2, p=NR (sig)
SOE Summary	G1: NHV G2: Usual care	G1 vs. G2, insufficient – inconsistent results

Abbreviations: G = group; NHV = Nurse Home Visitation Intervention; NR = not reported; NS = not significant; sig = significant; SOE = strength of evidence.

Parent-Child Interaction Therapy Adaptation Package

Parent-Child Interaction Therapy (PCIT) is a highly focused behavioral parent training approach originally developed to address child behavior problems by increasing the child's prosocial behaviors, decreasing oppositional behavior, and improving the parent-child relationship. The PCIT Adaptation included in this review was adapted for the child welfare context to address physically abusive or neglectful parenting. In addition to adaptations made to the curriculum (e.g., heavier emphasis on identifying appropriate child behavior and responding with specific praise), the authors added a new motivational intervention as an orientation to the PCIT intervention (in lieu of the standard orientation provided to parents involved with child welfare services). In this review, we refer to the PCIT Adaptation supplemented with the motivational orientation as the PCIT Adaptation Package (PCIT-AP). We identified two trials comparing the PCIT-AP approach to a didactic parenting training program provided by a community-based nonprofit agency (usual care; Table 57).[90, 91] The usual care parent training program, which was developed in-house at the provider agency, comprised three modules: (a) an orientation group to introduce parents to agency services and receive information about listening skills, how parenting practices influence children, and how the parents' own upbringing has influenced the way in which they discipline and parent their children; (b) a parenting-skills group in which parents learned about child development, discipline, praise, behavior management, communication strategies, stress management, and the ways in which parental problems affects children; and (c) an anger management group. The overall approach relied on discussions of how parenting was conceptualized by the parent, identifying and regulating emotions, and verbal problem solving.

Table 60. PCIT-AP variants versus usual care: Study characteristics

First Author et al., Year Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Chaffin, 2004[91] United States	Physically abused children ages 4 to 12 years and their caregivers	RCT Median follow-up time=850 days postbasline	G1: PCIT-AP G2: PCIT-AP Enhanced G3: Usual care	G1: 42 G2: 33 G3: 35 Overall N=110	Medium
Chaffin, 2011[90] United States	Neglected or physically abused children ages 2.5 to 12 years and their caregivers	RCT Median follow-up time=904 days postbaseline	G1: PCIT-AP G2: Usual care + MI G3: PCIT Adaptation + standard orientation G4: Usual care	G1: 34 G2: 41 G3: 36 G4: 42 Overall N=153[1]	Medium

[a] Initial randomization to the orientation group conditions: N=192

Abbreviations: G = group; MI = motivational intervention; N = number; PCIT-AP = PCIT Adaptation Package; RCT = randomized controlled trial.

PCIT-AP Versus EPCIT Versus Usual Care

Chaffin (2004)[91] examined the efficacy of PCIT-AP (N=42) compared with Enhanced PCIT –AP (N=33) and with usual care (N=35). Enhanced PCIT-AP provided individualized services for the parent and/or child (e.g., standard clinical treatment for parental depression; marital and family psychotherapy) as well as home visiting to assist the parent with implementing PCIT skills in the home. The study sample comprised children ages 4 to 12 years and parents referred for parenting services by child welfare for a confirmed physical abuse report. Many families had histories of multiple reports to CPS and severe parent-to-child violence. We summarize study results in Table 58 and provide study details in the evidence tables (Appendix E). The PCIT-AP condition was more efficacious than the usual care condition, but not the enhanced version of the model (i.e., there was no statistically significant difference between variants), in reducing future reports of physical abuse ($p<0.02$). There was also no statistically significant group-difference between the Enhanced PCIT-AP and usual care (p=NS).

Table 61. Results: PCIT-AP variants versus usual care variants

First Author et al., Year	Comparison Groups	Safety
Chaffin, 2004[91]	G1: PCIT-AP G2: PCIT-AP Enhanced G3: Usual care	**Recurrence of Maltreatment** G1>G3, p<0.02 G1>G2, p=0.13 No differences between G2 and G3, p=NS
Chaffin, 2011[90]	G1: PCIT-AP G2: Usual care + MI G3: PCIT Adaptation + standard orientation G4: Usual care	**Recurrence of maltreatment** G1>G2, p<0.05 G1>G3, p<0.05 G1>G4, p=NR, trend
SOE Summary	G1: PCIT-AP G2: Usual care G3: PCIT-AP Enhanced G4: PCIT Adaptation + standard orientation G5: Usual care + MI	G1 > G2, low G1 vs. G3, insufficient G1 > G4, low G1 > G5, low G2 vs. G3, insufficient

Abbreviations: G = group; MI = motivational intervention; NR = not reported; NS = not significant; PCIT-AP = PCIT Adaptation Package; SOE = strength of evidence.

PCIT-AP Versus PCIT with Standard Orientation Versus Usual Care with Motivational Intervention

In another RCT, Chaffin and colleagues (2011)[90] examined the effectiveness of PCIT-AP (N=34) implemented in a field agency as well as the relative contribution of the motivational intervention (MI) component in the package of services. In this trial, the authors compared PCIT-AP (N=34) with (a) the standard parenting program combined with the motivational orientation (usual care + MI; N=41), (b) the PCIT Adaptation combined with the standard orientation (N=36), and (c) usual care (i.e., the standard parenting program and standard orientation) (N=42). The study found fewer subsequent reports of maltreatment in the PCIT-AP condition compared with usual care + MI condition or PCIT Adaptation + standard orientation condition ($p<0.05$). There was a trend (p=NR) for the PCIT-AP model to be superior to usual care (the standard parenting program and orientation) in preventing future reports of child maltreatment.

Project Support

We identified one RCT comparing the effectiveness of Project Support (PS) with usual care for improving child welfare outcomes (see Table 59).[94] See Table 1 and the KQ 1 Results section for detail about the intervention.[94]

Table 62. Project support: Study characteristics

First Author et al., Year	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Jouriles et al., 2010[94] United States	Children ages 3 to 8 years. in maltreating families (mean age 5.4 years, SD=1.5)	RCT At any point during the 20 months post-baseline	G1: PS G2: Usual Care	G1: 17 G2: 18 Overall N=35	Medium

Abbreviations: G = group; N = number; PS = Project Support; RCT = randomized controlled trial; SD = standard deviation.

Project Support Versus Usual Care

In an RCT conducted by Jouriles and colleagues (2010),[94] children ages 3 through 8 years with a substantiated history abuse or neglect and their families were randomly assigned to receive PS (N=17) or usual care (N=18). We summarize study results in Table 60 and provide study details in the evidence tables (Appendix E). As indicated by a review of CPS computerized records 20 months following baseline assessments, fewer (N=1) PS families were re-referred to CPS compared with families receiving usual care; however, this difference did not reach statistical significance (p=0.086; f=0.29).

Table 63. Results: Project Support versus usual care

First Author et al., Year	Comparison Groups	Safety
Jouriles et al., 2010[94]	G1: PS G2: Usual Care	**Additional reports of child abuse to Children's Protection Services** No difference between G1 & G2, p=0.086
SOE Summary	G1: PS G2: Usual Care	G1 vs. G2, Insufficient

Abbreviations: G = group; PS = Project Support; SOE = strength of evidence.

Key Points: Enhanced Foster Care Interventions

We identified two enhanced foster care interventions assessing KQ 2 outcomes. We rate the strength of evidence for each comparison by overarching outcome and describe the applicability in Table 61. We then describe main findings for each comparison and outcome in the bulleted section of the key points.

Overview:

- One RCT and one non-concurrent cohort study of multimodal interventions for young children in foster care produced low or insufficient evidence on child welfare outcomes (Table 49).[85, 86, 90, 91, 94, 121, 124, 127, 128]
- One intervention targeted the child, their foster caregiver, and the permanent caregiving resource (e.g., relative);[124, 127, 128] the other intervention targeted the child and the biological caregiver.[121]

Multidimensional Treatment Foster Care for Preschoolers

- **Placement stability**. When Multidimensional Treatment Foster Care for Preschoolers was compared with usual care, no statistically significant difference was found in number of placement disruptions or length of time in foster care prior to placement disruption (insufficient).[128]
- **Permanency**: Multidimensional Treatment Foster Care for Preschoolers resulted in increased attempted placements, a greater proportion of attempts resulting in permanent placements, and a greater number of cases resulting in permanent placements compared with children in usual care (low strength of evidence).[124, 127]

New Orleans Intervention

- **Safety**. Compared with a cohort of young children in foster care prior to the implementation of the New Orleans intervention and a cohort of children post-implementation who should have received the intervention but did not, children and mothers who participated in the intervention had significantly reduced risk of child recidivism; mothers who lost custody of their children had a significantly reduced risk of maternal recidivism with another child and mothers overall showed a trend towards reduced risk of recidivism with another child (low strength of evidence).[121]
- **Permanency**: The New Orleans intervention resulted in an increase of termination of parental rights and decrease in reunification outcomes compared with the permanency outcomes experienced by children and mothers in the comparison group (low strength of evidence).[121]

Detailed Synthesis: Enhanced Foster Care Interventions

Multidimensional Treatment Foster Care for Preschoolers

We identified one RCT comparing the effectiveness of Multidimensional Treatment Foster Care for Preschoolers (MTFC-P) with usual care for improving child welfare outcomes.[87] See Table 62 and the KQ 1 Results section for detail about the intervention.[124, 127, 128]

Table 64. Enhanced Foster Care Interventions: Strength of evidence for child welfare outcomes[a]

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence[b] Magnitude of Effect[c]	Study Population
Multidimensional Treatment Foster Care	Usual care	Placement stability	1,[128] 117	Insufficient	Early to middle childhood, foster parent
		Permanency	1,[124, 127] 90	Low	
New Orleans Intervention	Usual care	Safety	1,[121] 255	Low Relative risk (RR) reduction = 67.9% [RR, 95% CI: 0.09 to 0.89] to 74.7% [RR, 95%CI: 0.11 to 0.93]	Early childhood, maltreating parent and foster caregiver
		Permanency	1,[121] 240	Low	

[a]We order the results in the summary tables by strength of evidence, taking into consideration the size of the body of evidence (e.g., number of trials and participants), magnitude of effect, and duration of intervention outcomes.

[b]All SOE results are G1>G2 unless noted otherwise.

[c]For estimation of the magnitude of effect, we include only the statistically significant ($p<0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis.

Table 65. Multidimensional Treatment Foster Care for Preschoolers: study characteristics

First Author et al., Year	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Fisher et al., 2005[127] United States	Ages 3 to 6 years foster children in new placement, expected duration ≥3 months	RCT 24 months[b] (postbaseline: initial out-of-home placement)	G1: MTFC-P G2 Usual care	G1: 47 G2: 43	Medium
Fisher et al. 2009[124] United States	Ages 3 to 6 years foster children in new placement, expected duration ≥3 months	RCT 24 months[b] (postbaseline: initial out-of-home placement)	G1: MTFC-P G2: Usual care	G1: 29 G2: 23	Medium
Fisher et al., 2011[128] United States	Ages 3 to 6 years. foster children in new placement, expected duration ≥3 months	RCT 12 months[b]	G1: MTFC-P G2: usual care	G1: 57 G2: 60	Medium

Abbreviations: MTFC-P = Multidimensional Treatment Foster Care for Preschoolers; RCT = randomized controlled trial.
[a]All three articles reported here are from a single trial.
[b]Out-of-home placements were typically prior to study.

Multidimensional Treatment Foster Care for Preschoolers Versus Usual Care

Results of the MTFC-P trial span seven articles drawn from the same sample, thee of which address child welfare outcomes.[124, 127, 128] We summarize study results in Table 63 and provide study details in the evidence tables (Appendix E).

Fisher et al.[127] provided an early analysis of placement stability. The sample consisted of 90 of the 117 children in the final study sample (47 MTFC-P; 43 usual care). Children receiving MTFC-P experienced significantly fewer failed permanent placement attempts relative to those in usual care (p=0.02). In other words, children receiving MTFC-P were less likely to return to CPS care after placement and case closure. Usual care children had similar rates of placement failure during their initial 10 months of care, after which their rates diverged significantly in favor of the MTFC-P children (p=0.007).

Another article by Fisher and colleagues provides further evidence for the efficacy of MTFC-P approach in improving positive permanency outcomes.[124] The sample in this study was 117 children: 57 in MTFC-P and 60 in usual care.[124] Permanent placements were attempted at equal rates for each group; however, for MTFC-P children, these attempts were more likely to be sustained on the first placement attempt and without further CPS involvement (p<0.01). Additionally, a larger proportion of children in the MTFC-P group remained in their permanent, placement and required no further CPS involvement (p<0.01) relative to usual care children.

In a third article, neither mean scores based on a Parent Daily Report (PDR) of child problem behavior (p=0.85), time to placement disruption (p=0.68), nor number of placement disruptions (p=0.46) differed significantly between the intervention arm and the usual care arm[128]. Placement disruptions were examined through survival analysis with duration of placement prior to disruption as the outcome of interest. For the children in the usual care condition, the likelihood of disruption increased significantly when caregivers reported more than five behavior problems on the PDR, with a 10 percent increase in likelihood of disruption for each additional problem

Table 66. Results: Multidimensional Treatment Foster Care for Preschoolers versus usual care

First Author et al., Year	Comparison Groups	Placement Stability	Permanence
Fisher et al., 2005[127]	G1: MTFC-P G2: Usual care	NA	**Fewer Permanent Placement Failures (after closed CPS case)** G1(-)>G2: p=0.02
Fisher et al., 2009[124]	G1: MTFC-P G2: Usual care	NA	**Proportion with Attempt at Permanent Placement** No difference between G1 and G2, p<0.05 **Proportion of Attempts Resulting in Successful Placement** G1>G2, p<0.01 **Proportion of Cases Resulting in Permanent Placement (i.e., no further placement change)** G1>G2, p<0.01
Fisher et al., 2011[128]	G1: MTFC-P G2: usual care	**Number Placement Disruptions** No differences between G1 and G2, p=0.68 **Time in Foster Care Prior to Placement Disruption** No differences between G1 and G2, p=0.46	NA
SOE Summary	G1: MTFC-P G2: usual care	G1 vs. G2 Insufficient – no differences	G1 > G2 Low

Abbreviations: CPS = child protective services; G = group; MTFC-P = Multidimensional Treatment Foster Care for Preschoolers; NA = not applicable; SOE = strength of evidence.

behavior (p=0.013). For MTFC-P involved children, changes in placement disruption risk were not significant across time (p=0.63)

New Orleans Intervention

Zeanah and colleagues (2001)[121] conducted a cohort study examining the effectiveness of a comprehensive, multimodal, individualized intervention for infants and toddlers in foster care, referred to as the New Orleans Intervention (Table 61). The intervention is a partnership between child welfare and a team of university-based experts in infant mental health to address the developmental and mental health needs of young children (< 48 months) in foster care for abuse or neglect in New Orleans, Louisiana. The intervention is directed at the child and their birth and foster families and includes intensive assessment and treatment services defined for the court-ordered case plan for the family. The authors describe treatment as "often include[ing] individual psychotherapy with parents, dyadic psychotherapy with parents and young children, medication, and crisis intervention." The sample comprised adjudicated children in a specific parish in Louisiana. Children adjudicated between 1991 and 1994, before the intervention was implemented, were the comparison group (N=145); children adjudicated between 1995 and 1998, after the intervention was implemented, comprised the intervention group (N=95). A comparison group of children in foster care adjudicated between 1995 and 1998 who were supposed to receive the intervention but instead received usual care were also included in a subset of the analyses as a nonintervention group (N=25). The authors examined child and maternal recidivism, length of time in foster care, and types of permanency outcomes (e.g., reunification, termination of parental rights, surrender, and relative placement).

Table 67. New Orleans Intervention: Study characteristics

First Author et al., Year	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Zeanah et al., 2001[121] United States	Children < 48 months in foster care	Non-concurrent cohort study [pre-intervention implementation cohort (1/1/1994-12/31/1994) and post-intervention implementation cohorts (1/1/1995-12/31/1998] 1-4 years[a]	G1: New Orleans Intervention group G2: Comparison group (usual care) G3: Nonintervention group (usual care)	G1: 145 G2: 95 G3: 25 Overall = 265 Children returned to birth parents & relatives: G1: 45 G2: 98 Subgroup overall = 143 Children returned to birth parents: G1: 33 G2: 71 Subgroup overall = 104 Mothers whose parental rights were terminated: G1: 38 G2: 19 Subgroup overall = 57	Medium

[a]Duration depended on when child entered foster care: 4-year period for children entering care in 1991 and in 1995; 3-year period for those entering care in 1992 and 1996, 2-year period for those entering care in 1993 and 1997, and 1-year period for those entering care in 1994 and 1998.

The authors provide evidence for the effectiveness of the New Orleans model in reducing the risk of subsequent validated incidents of maltreatment (child recidivism) comparing the intervention with the comparison group (p=0.022; relative risk (RR) reduction, 67.9%; RR 95% CI, 0.09 to 0.89) and nonintervention group (p=0.036; relative risk reduction,73.8%; RR, 95% CI, 0.02 to 0.93) (Table 62). The intervention group also experienced fewer adjudicated subsequent incidents, a more stringent maltreatment recurrence outcome, compared with the pre-intervention cohort (p=0.36; relative risk reduction,67%; RR 95% CI, 0.11 to 0.90). The authors report that all of the documented cases of recidivism in the intervention group occurred in children returned to their birth parents or placed with relatives. However, analysis of the subgroup of children who had been returned to birth parents or placed with relatives did not demonstrate significant differences for either validated or adjudicated subsequent maltreatment between the intervention and comparison (p=0.114) groups. Further subgroup analysis of only children returned to birth parents again found no statistically significant difference between the intervention and comparison group for either validated or adjudicated subsequent maltreatment (p=0.126 and p=0.175, respectively). The authors report a trend toward significance comparing the intervention and comparison group on maternal recidivism, again either validated or adjudicated (p=0.055 and p = 0.091, respectively). Similarly, a trend was found comparing the intervention and nonintervention group on maternal recidivism for validated maltreatment (p=0.060). Subgroup analysis of maternal recidivism among mothers whose parental rights were terminated demonstrated a trend toward significance when comparing the intervention and

comparison group on subsequent validated maltreatment incidents (p=0.51) and a significant reduction in adjudicated maltreatment (p=0.022; relative risk reduction, 74.7%; RR 95% CI, 0.11 to 0.93).

Table 68. Results: New Orleans Intervention versus comparison groups

First Author et al., Year	Comparison Groups	Safety	Permanency
Zeanah et al., 2001[121]	G1: New Orleans intervention group G2: Comparison group (usual care) G3: Nonintervention group (usual care)	**Child Recidivism[a]** Validated as maltreated in subsequent incident: G1 > G2, p = 0.022 Relative risk (RR) reduction = 67.9% [RR, 95% CI: 0.09 to 0.89] G1 > G3, p = 0.036 Relative risk (RR) reduction = 73.8% [RR, 95% CI: 0.02 to 0.93] Adjudicated in subsequent incident: G1 > G2, p = 0.036 RR reduction: G1 > G2: 67.0% [RR, 95% CI: 0.11 to 0.90] No difference between G1 and G3, p = 0.072, trend **Child Recidivism subgroup: only children returned to birth parents or placed with relatives[a]** Validated: No difference between G1 and G2, p = 0.114 G1 and G3, p = NR Adjudicated: No difference between G1 and G2, p = 0.193 G1 and G3, p = NR **Child Recidivism subgroup: only children returned to birth parents[a]** Validated: No difference between G1 and G2, p = 0.126 G1 and G3, p = NR Adjudicated: No difference between G1 and G2, p = 0.175 G1 and G3, p = NR **Maternal Recidivism[a]** Validated: No difference between G1 > G2, p = 0.055, trend G1 > G3, p = 0.060, trend Adjudicated: No difference between G1 > G2, p = 0.091, trend No difference between G1 and G3, p = 0.10	**Length of Time in Foster Care:** No difference between G1 and G2, p = ns (NR) **Difference in Permanency Outcomes: Reunification, Termination, Surrender, and Relative Placement** G1 < G2, p < .01 Note: this result is a negative outcome for the intervention group with twice as many terminations and significantly fewer reunifications. G1 and G3, p = NR

Table 69. Results: New Orleans Intervention versus comparison groups

First Author et al., Year	Comparison Groups	Safety	Permanency
Zeanah et al., 2001[121] (continued)		**Maternal Recidivism subgroup: mothers whose parental rights were terminated[a]** Validated: G1 and G2, p = 0.051, trend G1 and G3, p = NR Adjudicated: G1 > G2, p = 0.022 G1 > G2: RR reduction = 74.7% [RR, 95% CI: 0.11 to 0.93] G1 and G3: p = NR	
SOE Summary	G1: New Orleans Intervention group G2: Comparison groups (usual care)	G1 > G2 Low	G1 < G2 Low

Abbreviations: RRR = Relative Risk Reduction; G = group; SOE = strength of evidence.

[a]For the recidivism data, the study authors provided only relative risk reduction effects; the EPC team performed Mantel-Haenszel chi square analyses to assess the significance of the effect sizes. We report effect sizes for significant findings only (p<0.05).

No differences were found between the intervention and comparison group for length of time in foster care (p=ns, NR). The authors attribute this no-difference finding in part to legal and child welfare system processes and the tendency of the court to grant continuances to give the parent more time and opportunity to prove their fitness to regain custody. The study also found that parents who participated in the intervention group were twice as likely to lose custody (termination of parental rights) and significantly less likely to be reunified with their children (p<.01) compared with the cohort that did not receive the intervention. The authors suggest that the "more intense scrutiny of parents…with its focus on psychological accountability" may have resulted in this increase and acknowledge that the decreased rates of recidivism in the intervention group may have been in part attributable to the termination of parental rights.

Key Question 3. Comparative Effectiveness of Interventions with Different Characteristics

Organization

The Results in this section are organized according to the types of intervention characteristics assessed for Key Question (KQ) 3. Each subsection presents the key points pertaining to the intervention type, which summarizes the main findings for each comparison and the strength of evidence grade. Following the key points, a detailed synthesis section provides additional information about the results. Detailed results for each comparison are presented in KQ 1.

Description of Included Studies

We present the results of five randomized controlled trials (RCTs), presented in seven articles (Table 67),[74-76, 88, 89, 101, 110] that assessed the effectiveness of different modalities or theoretical orientations in addressing either or both mental and behavioral health or healthy caregiver-child relationship outcomes (none addressed healthy development or school

functioning outcomes). By modality we refer to the service delivery strategy or mode used to deliver the intervention (that is, individual-, dyadic-, group-, or family-based). We do not include mixed modes in our analysis of KQ 3 because the diversity of modality combinations in the included studies would render results of comparisons too difficult to interpret. None of the trials we identified as relevant to KQ 3 addressed KQ 2 outcomes. We did not identify any studies comparing interventions' effectiveness by different type(s) of setting.

Table 70. Numbers of trials and articles comparing the effectiveness of interventions with different characteristics

Intervention Characteristic	Comparison	Intervention	Trials (Articles)
Modality	Group vs. individual	Psychotherapy[110]	1
	Multiple family vs. single family	Multifamily Group Therapy[88, 89]	1 [a]
Theoretical Orientation	Attachment-based vs. psychoeducational	Attachment and Biobehavioral Catch-up[74-76]	2 [b]
	Cognitive behavioral vs. psychodynamic	Trauma-focused cognitive-behavioral therapy[101]	1
		Total	*5*

[a] Reported in two articles

[b] Reported in three articles

Key Points: Modality

Overview

- We identified two trials that compared different treatment modalities for addressing child exposure to maltreatment.
  - One trial compared group psychotherapy with individual psychotherapy.[110]
  - One trial compared Multifamily Group Therapy with traditional family therapy (single family modality).[88, 89]

Group Versus Individual Modality

- **Mental health and behavioral outcomes**: Psychotherapy delivered individually to symptomatic sexually abused girls resulted in better mental and behavioral health outcomes compared with psychotherapy delivered in a group mode (low strength of evidence).[110]

Multiple Family Versus Single Family Modality

- **Healthy caregiver-child relationship**: Caregivers who participated in family therapy in a multiple family context had greater improvements in healthy caregiver-child relationship outcomes compared with parents participating in traditional family therapy (low strength of evidence).[88, 89]

Key Points: Theoretical Orientation

Overview

- We identified four trials providing two comparisons of interventions with clearly differentiated theoretical underpinnings.[74-76, 101]

- One comparison (two trials) assessed the relative efficacy of an attachment-based intervention and a psychoeducational approach that emphasized teaching parents how to support their children's language and cognitive development.[74-76]
- One trial examined the comparative efficacy of a cognitive behavioral intervention relative to a psychodynamic approach.[101]

Attachment-based Versus Psychoeducational

- **Mental health and behavioral outcomes**: Children whose foster parents participated in Attachment and Biobehavioral Catch-up had better mental health outcomes than children whose foster parents participated in the psychoeducational intervention (low strength of evidence).
- **Healthy caregiver-child relationship**: Foster parents who participated in Attachment and Biobehavioral Catch-up, an attachment-based intervention, reported better healthy caregiver-child relationship outcomes compared with a psychoeducational approach (low strength of evidence).[74-76]

Cognitive Behavioral Versus Psychodynamic

- **Mental health and behavioral outcomes**: Children participating in Trauma-focused Cognitive Behavioral Therapy reported better mental health outcomes compared with participants in the psychodynamic condition(low strength of evidence).[101]
- **Healthy caregiver-child relationship**: Children and caregivers participating in Trauma-focused Cognitive Behavioral Therapy reported better caregiver-child relationship outcomes than participants in the psychodynamic condition (low strength of evidence).[101]

Detailed Synthesis: Modality

We identified two RCTs comparing different treatment modalities for addressing child exposure to maltreatment. We present the strength of evidence for the comparisons in

Group Versus Individual Modality

Trowell and colleages[110] found that a sexual abuse-specific individual psychotherapy approach resulted in greater reductions in re-experiencing traumatic events (d=0.69 at time 1 and 0.79 at time 2; medium effect sizes) and persistent-avoidance trauma symptoms (d=0.66 at time 1 and 0.36 at time 2; medium and small effect sizes, respectively) compared with a group therapy approach comparable in content. No statistically significant difference was found for other trauma symptoms or functional impairment between treatment groups.

Multiple Family Versus Single Family Modality

One trial examined the effectiveness of family-based therapy delivered in a multiple family context compared with traditional family therapy delivered to single family unit.[88, 89] In this study, Multifamily Group Therapy resulted in greater improvement in parent attitudes associated with child abuse compared with the single-family approach.

Table 68 and provided additional details about the outcomes assessed below.

Table 71. Modality: Strength of evidence for KQ1 outcomes

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence[a] Magnitude of Effect[b]	Study Population
Group Psychotherapy	Individual Psychotherapy	Mental and behavioral health	1,[110] 71	Low G1 < G2 Small to medium (d=0.30 to 0.57	Middle childhood to early adolescence, children exposed to sexual abuse, foster or biological parents
Multifamily Group Therapy	Single Family Therapy	Healthy caregiver-child relationship	1,[88,89] 78	Low	Early childhood to early adolescence, maltreating parent

[a]All SOE results are G1>G2 unless noted otherwise.

[b]For estimation of the magnitude of effect, we include only the statistically significant (p<0.05) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as Cohen's *d* = 0.20, 0.50, and 0.80.[150] We include an effect size range when more than two effect sizes are reported. Authors did not report effect sizes for some measures.

Detailed Synthesis: Theoretical Orientation

We identified three RCTs resulting in two comparisons of different theoretical orientations for interventions addressing child exposure to maltreatment. We present the strength of evidence for the two comparisons in Table 69 and provided additional details about the outcomes assessed below.

Attachment-Based Versus Psychoeducational

We identified two trials examined the comparative efficacy of Attachment and Biobehavioral Catch-up (ABC), which is an intervention approach heavily informed by attachment theory and explicitly designed to enhance children's attachment relationships. The comparator in the ABC trials was a psychoeducational approach, didactic and without a specified theoretical orientation, which focused on enhancing children's cognitive and language development.[74-76] Children whose foster parents participated in ABC exhibited more normative (i.e., regulated) cortisol levels compared with children whose parents participated in the psychoeducational intervention. Foster parents who participated in ABC reported that their children exhibited less avoidant attachment behavior; however, no statistically significant difference was found in parent report of children's secure attachment behavior compared with the psychoeducational intervention.

Cognitive-Behavioral Versus Psychodynamic

We identified one comparison of a cognitive behavioral therapy—Trauma-focused Cognitive Behavioral Therapy (TF-CBT) —compared with a psychodynamic approach (conventional child-centered psychotherapy).[101] Children participating TF-CBT reported a greater decrease in trauma symptoms: re-experiencing of the traumatic event, avoidance of reminders of the traumatic event, and hypervigilance (d=0.49, d=0.70, d=0.40, respectively). Children receiving TF-CBT also showed greater improvements in overall behavior and reduced depression symptoms (d=0.33, and d=0.30, respectively). The study found no difference between groups in improvements in social competence, internalizing problems, externalizing, sexual behaviors, or anxiety. Parents in the TF-CBT group reported greater reduction in their own depression symptoms (d=0.38) and improvements in parenting practices (d=0.57).

Table 72. Theoretical Orientations: strength of evidence for KQ1 outcomes

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence[a] Magnitude of Effect[b]	Study Population
Attachment-based	Psycho-educational (non-attachment based)	Mental and behavioral health	2,[74,75] 153	Low	Early childhood
		Healthy caregiver-child relationship	1,[76] 46	Low	
Cognitive-behavioral	Psycho-dynamic	Mental and behavioral health	1,[101] 229	Low Small to medium (d=0.33 to 0.70)	Middle childhood to early adolescence, children exposed to sexual abuse, any nonmaltreating parent
		Healthy caregiver-child relationship	1,[101] 229	Low Small to medium (d=0.38 to 0.57)	

[a]All SOE results are G1>G2 unless noted otherwise.

[b]For estimation of the magnitude of effect, we include only the statistically significant ($p<0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as Cohen's d = 0.20, 0.50, and 0.80.[150] We include an effect size range when more than two effect sizes are reported. Authors did not report effect sizes for some measures.

Key Question 4. Comparison of Intervention Effectiveness for Improving Child Well-Being or Child Welfare Outcomes in Population Subgroups

Organization

We organize the results for KQ 4 by overarching category of child or caregiver subgroup population. We first present findings for the child subgroup, followed by the results for the caregiver subgroups. The specific subgroups addressed in this section are specified below:

KQ4a. Child subgroups:

- Age and other sociodemographic subgroups (e.g., race, ethnicity, sex);
- Type of maltreatment exposure (e.g., neglect, physical abuse, sexual abuse);
- Severity of maltreatment exposure;
- Presence of mental or behavioral health problems (e.g., complex traumatic stress disorders, serious emotional disturbance) or other special needs (e.g., failure to thrive, prenatal substance exposure).

KQ4b. Caregiver subgroups:

- Primary caregiving context: biological parent; foster, kin (relative), or adoptive caregivers; residential program or group home);
- Presence of mental health problems, substance abuse, or domestic violence;
- Sociodemographic groups (e.g., age, race, ethnicity, sex).

We begin each section with a description of the included studies for the specific subgroups, followed by key points and then a detailed synthesis of study findings pertaining to each of the specific subgroup populations. The detailed syntheses provide a summary of the study findings reported in KQ1 and KQ 2 as well as a summary strength of evidence table for each subgroup (the results tables from KQ 1 and KQ 2 are not repeated here). As noted previously, the summary strength of evidence tables order comparisons by strength of evidence grade (that is, from the highest grade to insufficient).

Description of Included Studies

We identified 24 trials, reported in 39 articles, which addressed the subgroups specified for KQ 4. All trials included in this section also were included in either or both KQ 1 and KQ 2, and all three intervention types (parenting interventions, trauma-focused treatments, and enhanced foster care interventions) are represented in the results for KQ 4. Table 70 presents the number of trials and articles for each child and caregiver subgroup; the table also describes which intervention was evaluated with the different subpopulations of interest to this KQ. For the age subgroup, we included only those studies that limited the population to children in the following developmental periods: early childhood (ages 0 to 5), middle childhood (ages 6 to 10), and early adolescence (ages 11 to 14). We imposed this restriction to yield a developmentally specific analysis. However, we were limited in the specificity of the age groupings we defined for KQ 4 and in the scope of research we could include for this key question because (a) most study populations spanned fairly wide age ranges (e.g., 3 to 8 years; 6 to 14 years), and (b) none of the

studies that spanned age ranges stratified findings by age.[77, 81, 82, 84, 85, 90, 91, 101, 112, 122-128] Regarding severity, we operationalized this population characteristic in terms of the chronic and multiple nature of the child's exposure. Although several studies characterized the study population as 'severely maltreated' or described families as having multiple reports to child protective service or severe parent-to-child violence, further breakdown of the population by severity or analysis of outcomes by degree of severity was not provided.[77, 90] In general, reporting of the extent of maltreatment exposure was notably limited in the literature reviewed, which is a likely function of researchers having to rely on child welfare or other administrative records and/or parent report (both of which can be difficult to obtain and are subject to inaccuracies and omission) for information about the child's maltreatment history.

Table 73. Non Duplicative Number of Intervention Trials addressing KQ 4 child subgroup outcomes

Intervention	N of Trials	0 to 5	11 to 14	Female	Neglect	Physical Abuse	Sexual Abuse	Trauma Symptoms	Biological parent	Foster caregiver
Parenting Interventions	-	-	-	-	-	-	-	-	-	-
Attachment and Biobehavioral Catch-up[74-77]	3[a]	X[b]	-	-	-	-	-	-	-	X
Attachment-based Intervention[78]	1	X	-	-	-	-	-	-	X	-
Child-Parent Psychotherapy[79, 80]	2	X	-	-	-	-	-	-	X	-
Incredible Years[81, 82]	2	-	-	-	X[c]	-	-	-	X	-
Keeping Foster and Kinship Parents Trained and Supported[84, 85]	1[d]	-	-	-	-	-	-	-	-	X
Nurse Home Visitation Intervention[86]	1	-	-	-	-	-	-	-	X	-
Multifamily Group Therapy[88, 89]	1	-	-	-	-	-	-	-	X	-
Parent Child Interaction Therapy Adaptation Package[90, 91]	2	-	-	-	-	X[e]	-	-	X	-
Project Support[94]	1	-	-	-	-	-	-	-	X	-
Trauma-Focused Interventions	-	-	-	-	-	-	-	-	-	-
Combined Parent-Child Cognitive Behavioral Therapy[100]	1	-	-	-	-	X	-	X	X	-
Eye Movement Desensitization and Reprocessing[105]	1	-	X	X	-	-	X	X	-	-
Group Psychotherapy[110]	1	-	-	X	-	-	X	X	-	-
Trauma-Focused Cognitive Behavioral Therapy[101, 112]	2	-	-	-	-	-	X	X	-	-
Trauma-Focused Cognitive Behavioral Therapy Groups[113]	1	-	-	-	-	-	X	X	-	-
Play Therapy plus Milieu Therapy[111]	1	X	-	-	-	-	-	-	-	-
Enhanced Foster Care Interventions	-	-	-	-	-	-	-	-	-	-
Bucharest Early Intervention Project[114-116, 119, 120]	1[f]	X	-	-	X	-	-	-	-	X
Multidimensional Treatment Foster Care for Preschoolers[122-128, 148]	1[g]	-	-	-	-	-	-	-	-	X
New Orleans Intervention[121]	1	X							X	
Total	24	9	1	2	2	2	5	6	12	6

[a] Reported in four articles

[b] One of the ABC trials also includes children in the middle childhood range

[c] Only one of the two trials assessing Incredible Years targeted neglected children

[d] Reported in two articles

[e] Only one of the two trials assessing Parent Child Interaction Therapy Adaptation Package targeted physically abused children.

[f] Reported in five articles.

[g] Reported in eight articles.

KQ4a. Child Welfare and Child Well-Being Outcomes in Child Subgroups

Key Points

Overview

- Seven trials and one cohort study reported in 14 articles pertained to early childhood (ages 0 to 5)[74-76, 78-80, 111, 114-116, 118-121] and 1 trial that yielded one article focused on children in early adolescence (ages 11 to 14).[105] No trial specifically targeted children in the middle childhood years (ages 6 to 10).
- Two trials and two related articles evaluated trauma-focused treatments implemented solely with girls.[105, 110]
- We identified no trials that explicitly targeted or stratified findings by other sociodemographic characteristics, such as race or ethnicity.
- Nine trials and 12 articles pertained to type of maltreatment. Two trials addressed children exposed to neglect;[82, 114-116, 118-120] 2 trials focused on children exposed to physical abuse;[91, 100] and 5 children exposed to sexual abuse.[101, 105, 110, 112, 113]
- No studies stratified findings by severity of maltreatment.
- Six trials (6 articles) targeted a population with traumatic stress symptoms..[100, 101, 105, 110, 112, 113]
- As indicated in the results for KQ 1, no trials reported school-based functioning outcomes.

Age and Other Sociodemographic Subgroups

- **Early childhood (0 to 5):**
    - An RCT evaluating the Bucharest Early Intervention Project found superior improvements across numerous child mental and behavioral health, caregiver-child relationship, and developmental outcomes compared with usual (institutional) care (low strength of evidence).114-116, 118-120
    - In one non-concurrent cohort study, the New Orleans intervention found improved child and maternal recidivism outcomes compared with usual care (low strength of evidence).121
    - In two trials, Attachment and Biobehavioral Catch-up resulted in improvements in child mental and behavioral health and caregiver-child relationship outcomes (low strength of evidence).74-76
    - An RCT evaluating an intervention loosely based on Attachment and Biobehavioral Catch-up, referred to in this report as Attachment-based Intervention, found improved caregiver-child relationship outcomes in the intervention arm compared with usual care (low strength of evidence).[78]

- In two trials, a variant of Child Parent Psychotherapy developed by Cicchetti and colleagues resulted in improved caregiver-child relationship outcomes compared with usual care (low strength of evidence).[79, 80]
- In one RCT, no statistically significant differences were found comparing a variant of Play Therapy, developed for maltreated preschoolers and provided as a supplemental intervention to children in a therapeutic nursery (referred to as milieu therapy by the authors), compared with the therapeutic nursery condition alone (insufficient evidence).[111]

- **Early Adolescence (11 to 14):**
  - One RCT found no statistically significant differences in outcomes between participants in Eye Movement Desensitization Reprocessing and those who received a highly modified version of Trauma-Focused Cognitive Behavioral Therapy (insufficient evidence).[105]
- **Sex:**
  - One trial evaluating an individual psychoanalytically-oriented treatment compared with a group version with equivalent content found superior long-term benefits in child mental and behavioral health outcomes for the individual approach (low strength of evidence).[110]
  - As noted previously, no statistically significant differences were found comparing Eye Movement Desensitization Reprocessing with a modified version of Trauma-Focused Cognitive Behavioral Therapy (insufficient evidence).[105]

Type of Maltreatment Exposure

- **Neglect:**
  - As previously noted, the Bucharest foster care intervention trial resulted in superior improvements in child mental and behavioral health, caregiver-child relationship, and developmental outcomes compared with usual (institutional) care (low strength of evidence). Two trials targeted neglected children and their caregivers.[114-116, 118-120]
  - One RCT evaluating Incredible years found improved child mental and behavioral and caregiver-child relationship outcomes compared with a wait list control group[82]
- **Physical Abuse:**
  - An RCT evaluating an adaptation of Parent-Child Interaction Therapy for physically abusive parents and their children, which included a motivational interviewing orientation, found fewer subsequent abuse reports to child protective services in the intervention arm compared with usual care (low strength of evidence).[91] Safety outcomes did not differ statistically significantly from those in an enhanced variant of the Parent-Child Interaction Therapy intervention (insufficient).[91]
  - In one RCT, Combined Child-Parent Cognitive Behavioral Therapy resulted in grater short-term improvements in child mental and behavioral health for physically abused children compared with an inactive control (low strength of evidence). In the same trial, caregiver-child outcomes were inconsistent (insufficient evidence).[100]
- **Sexual Abuse:**
  - In two trials, Trauma-Focused Cognitive Behavioral Therapy was superior to active control groups in improving child mental and behavioral health, including sexualized behavior, and caregiver-child relationship outcomes (low strength of evidence).[101, 112]

- As noted previously, an individual psychoanalytically-oriented treatment evaluated in a single RCT was superior to a group-based approach, similar in content and theoretical orientation, in improving child mental health outcomes in sexually-abused girls (low strength of evidence).[110]
- One RCT evaluating a group adaptation of Trauma-Focused Cognitive Behavioral Therapy found no statistically significant differences in child mental and behavioral health or caregiver-child relationship outcomes compared with an active control (low strength of evidence).[113]
- As noted previously, no statistically significant differences were found comparing Eye Movement Desensitization Reprocessing with a modified version of Trauma-Focused Cognitive Behavioral Therapy (insufficient strength of evidence).[105]

Presence of Mental or Behavioral Health Problems

- **Traumatic stress:**
  - Trauma-Focused Cognitive Behavioral Therapy was superior to active controls in reducing child trauma symptoms in two RCTs (low strength of evidence)[101, 112]
  - In one RCT, individual psychotherapy with sexually-exposed girls resulted in superior long-term reductions in trauma symptoms relative to a group-based version equivalent in content (low strength of evidence)[110]
  - In one RCT, Combined Child-Parent Cognitive Behavioral Therapy resulted in greater short-term improvements in trauma symptoms in children exposed to physical abuse relative to an inactive control (low strength of evidence). In the same trial, caregiver-child outcomes were inconsistent (insufficient evidence).[100]
  - As noted previously, no statistically significant differences were found in a trial comparing Eye Movement Desensitization Reprocessing with a modified version of Trauma-Focused Cognitive Behavioral Therapy in addressing trauma symptoms (insufficient evidence).[105]

Detailed Synthesis

Age and Other Sociodemographic Subgroups

Early Childhood (Ages 0 to 5)

We identified eight trials conducted with children ages birth to five. We note these studies in Table 71 but do not discuss them here, as they are discussed in previous sections of the Results chapter.

Table 74. Strength of evidence summary table: Early childhood (ages 0 to 5)[a]

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence[b] Magnitude of Effect[c]	Study Population
Bucharest Early Intervention Project	Usual care (institutional Care in Romania)	Mental health and behavior	1,[114-116] 136	Low Odds Ratio 2.8 [95% CI, 1.2 to 6.4]	Institutionalized children, foster caregivers
		Healthy caregiver-child relationship	1,[120]136	Low	
		Healthy development	1,[118, 119] 136	Low ES[d] =0.47 or 0.62	
New Orleans Intervention	Usual care	Safety	1,[121] 255	Low Relative Risk (RR) Reduction=67.9% [RR, 95%CI 0.11 to 0.90] to 74.7% [RR, 95%CI 0.11 to 0.93]	Early childhood, maltreating parent and foster caregiver
		Permanency	1,[121] 240	Low G1 < G2	
Attachment and Biobehavioral Catch-up	Active control[e]	Mental and behavioral health	2,[74, 75] 153	Low	Early childhood, foster caregiver
		Healthy caregiver- child relationship	1,[76] 46	Low	
Child-Parent Psychotherapy[f]	Active control[d]	Healthy caregiver child relationship	2,[79, 80] 159	Insufficient	Early childhood, maltreating parent
	Usual care	Healthy caregiver child relationship	2,[79, 80] 141	Low Medium to large (h=0.64 to 1.34)	
Attachment-based Intervention	Usual care	Mental and behavioral health	1,[78] 79	Insufficient	Early childhood, maltreating parent
		Healthy caregiver child relationship	1,[78] 79	Low Small to medium (d=0.47, r=0.36 or 0.37)	
Play Therapy + Milieu Therapy	Milieu therapy	Mental and behavioral health	1,[111] 41	Insufficient	Early childhood, no caregiver included
		Healthy development	1,[111] 41	Insufficient	

[a]We order the results in the summary tables by strength of evidence, taking into consideration the size of the body of evidence (e.g., number of trials and participants), magnitude of effect, and duration of intervention outcomes.

[b]All SOE results are G1>G2 unless noted otherwise.

[c]For estimation of the magnitude of effect, we include only the statistically significant ($p<0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as: Cohen's d = 0.20, 0.50, and 0.80; Cohen's h = 0.20, 0.50, and 0.80; and correlation coefficient r = 0.10, 0.30, and 0.50.[150] We include an effect size range when more than two effect sizes are reported. Authors did not report effect sizes for some measures.

[d]Effect size measure is not specified, therefore we did not classify the magnitude of effect as small, medium, or large.

[e]Active comparator is an approach derived from an intervention wherein the degree to which core components of the original model are implemented is unclear and/or core components are omitted or substantively modified

[f]Intervention is a variant of Child Parent Psychotherapy developed by Cicchetti and colleagues.[79, 80]

Early Adolescence (Ages 11 to 14)

We identified one trial with one comparison evaluating interventions for children ages 11 to 14.[105] We note these studies in Table 72 but do not discuss them here, as they are discussed in previous sections of the Results chapter.

Sex

We identified two trials that assessed child mental and behavioral health outcomes in samples comprised exclusively of girl,[105, 110] We note these studies in Table 73 but do not discuss them here, as they are discussed in previous sections of the Results chapter.

Type of Maltreatment

Neglect

We identified two RCTs that targeted neglected children.[82, 114-116, 118-120] We note these studies in Table 74 but do not discuss them here, as they are discussed in previous sections of the Results chapter.

Physical Abuse

We identified two trials evaluating interventions with physically abused children.[91, 100] We note these studies in Table 75 but do not discuss them here, as they are discussed in previous sections of the Results chapter.

Sexual Abuse

We identified 5 trials evaluating interventions for sexually-abused children.[101, 105, 110, 112, 113] We note these studies in Table 76 but do not discuss them here, as they are discussed in previous sections of the Results chapter.

Presence of Mental or Behavioral Problems

We identified 6 RCTs evaluating interventions with children experiencing mental or behavioral health problems; all 6 trials studies targeted children with traumatic stress symptoms. We note these studies in Table 77 but do not discuss them here, as they are discussed in previous sections of the Results chapter.[100, 101, 105, 110, 112, 113]

Table 75. Strength of evidence summary table: Early adolescence (ages 11 to 14)

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence[b] Magnitude of Effect[c]	Study Population
Eye Movement Desensitization and Reprocessing	Active Control[a]	Mental and behavioral health	1,[105] 14	Insufficient	Early adolescence, no caregiver included

[e]Active comparator is an approach derived from an intervention wherein the degree to which core components of the original model are implemented is unclear and/or core components are omitted or substantively modified.

Table 76. Strength of evidence summary table: Sex (girls)[a]

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence Magnitude of Effect[b]	Study Population
Group Psychotherapy	Individual psychotherapy	Mental and behavioral health	1,[110] 71	Low, G1<G2 Small to medium (d=0.36 to 0.79)	Middle childhood to early adolescence, any caregiver
Eye Movement Desensitization and Reprocessing	Active Control[c]	Mental and behavioral health	1,[105] 14	Insufficient	Early adolescence, no caregiver included

[a]We order the results in the summary tables by strength of evidence, taking into consideration the size of the body of evidence (e.g., number of trials and participants), magnitude of effect, and duration of intervention outcomes.

[b]For estimation of the magnitude of effect, we include only the statistically significant ($p<0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as Cohen's d = 0.20, 0.50, and 0.80.[150] We include an effect size range when more than two effect sizes are reported. Authors did not report effect sizes for some measures.

[c]Active comparator is an approach derived from an intervention wherein the degree to which core components of the original model are implemented is unclear and/or core components are omitted or substantively modified.

Table 77. Strength of evidence summary table: Type of maltreatment type (neglect)[a]

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence[b] Magnitude of Effect[c]	Study Population
Bucharest Early Intervention Project	Usual care (institutional Care in Romania)	Mental health and behavior	1,[114-116] 136	Low Odds Ratio 2.8 [95% CI, 1.2 to 6.4]	Institutionalized children, foster caregivers
		Healthy caregiver-child relationship	1,[120]136	Low	
		Healthy development	1,[118, 119] 136	Low ES[d] =0.47 or 0.62	
Incredible Years	Wait list[e]	Mental and behavioral health	1,[82] 45	Low Small (Êta=0.18 or 0.21)	Early to middle childhood, maltreating parent
		Healthy caregiver-child relationship	1,[82] 45	Low Small to Large (Êta =0.13 to 0.48)	

[a]We order the results in the summary tables by strength of evidence, taking into consideration the size of the body of evidence (e.g., number of trials and participants), magnitude of effect, and duration of intervention outcomes.

[b]All SOE results are G1>G2 unless noted otherwise.

[c]For estimation of the magnitude of effect, we include only the statistically significant ($p<0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. When authors use Eta or partial eta squared effect sizes we use the interpretation that the authors provide. We include an effect size range when more than two effect sizes are reported. Authors did not report effect sizes for some measures.

[d]Effect size measure is not specified, therefore we did not classify the magnitude of effect as small, medium, or large

[e] The comparison group for one study was an n < 10 participants

Table 78. Strength of evidence summary table: Type of maltreatment type (physical abuse)[a]

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence[b] Magnitude of Effect[c]	Study Population
Parent-Child Interaction Therapy(PCIT) Adaptation Package[d]	Usual care + standard orientation	Safety	1,[91] 77	Low	Early childhood to early adolescence, maltreating caregiver
	PCIT Adaptation Package enhanced[e]	Safety	1,[91] 75	Insufficient	
Combined Parent-Child Cognitive Behavioral Therapy	Active Control[f]	Mental and behavioral health	1,[100] 75	Low Medium (d=0.61)	Middle childhood to early adolescence, exposed to physical abuse, maltreating parents
		Healthy caregiver-child relationship	1,[100] 75	Insufficient	
PCIT Adaptation Package[d] enhanced[e]	Usual Care	Safety	1,[91] 88	Insufficient	Early childhood to early adolescence, maltreating caregiver

[a]We order the results in the summary tables by strength of evidence, taking into consideration the size of the body of evidence (e.g., number of trials and participants), magnitude of effect, and duration of intervention outcomes.

[b]All SOE results are G1>G2 unless noted otherwise.

[c]For estimation of the magnitude of effect, we include only the statistically significant ($p<0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis.

[d]"Package" refers to the inclusion of a supplemental motivational intervention orientation.

[e] "Enhanced " refers to the provision of individualized services to the parents.

[f] Active comparator is an approach derived from an intervention wherein the degree to which core components of the original model are implemented is unclear and/or core components are omitted or substantively modified.

Table 79. Strength of evidence summary table: Type of maltreatment type (sexual abuse)[a]

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence[b] Magnitude of Effect[c]	Study Population
Trauma-Focused Cognitive Behavioral Therapy	Active Control[d]	Mental and behavioral health	2,[101, 112] 315	Low Small to Medium (d=0.30 to 0.70)	Early childhood to early adolescence, exposed to sexually abused, any nonmaltreating caregiver
		Healthy caregiver-child relationship	1,[101] 229	Low Small to Medium (d=0.38 or 0.57)	
Group Psychotherapy	Individual psychotherapy	Mental and behavioral health	1,[110] 71	Low, G1<G2 Small to medium (d=0.36 to 0.79)	Middle childhood to early adolescence, any caregiver
Trauma-Focused Cognitive Behavioral Therapy Group Adaptation	Active control[e]	Mental and behavioral Health	1,[113] 44	Insufficient	Early to middle childhood, exposed to sexual abuse, any nonmaltreating caregiver
		Healthy caregiver-child relationship	1,[113] 44	Insufficient	
Eye Movement Desensitization and Reprocessing	Active Control[f]	Mental and behavioral health	1,[105] 14	Insufficient	Early adolescence, no caregiver included

[a]We order the results in the summary tables by strength of evidence, taking into consideration the size of the body of evidence (e.g., number of trials and participants), magnitude of effect, and duration of intervention outcomes.

[b]All SOE results are G1>G2 unless noted otherwise.

[c]For estimation of the magnitude of effect, we include only the statistically significant ($p<0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as Cohen's d = 0.20, 0.50, and 0.80. We include an effect size range when more than two effect sizes are reported. Authors did not report effect sizes for some measures.

[d]One comparator is a conventional approach, the other a derived approach.

[e]Active comparator is an approach representative of a conventional practice in the field.

[f]Active comparator is an approach derived from an intervention wherein the degree to which core components of the original model are implemented is unclear and/or core components are omitted or substantively modified.

Table 80. Strength of evidence summary table: Mental or behavioral health problems[a]

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence[b] Magnitude of Effect[c]	Study Population
Trauma-Focused Cognitive Behavioral Therapy	Active Control[d]	Mental and behavioral health	2,[101, 112] 315	Low Small to Medium (d=0.30 to 0.70)	Early childhood to early adolescence, exposed to sexually abused, any nonmaltreating caregiver
		Healthy caregiver-child relationship	1,[101] 229	Low Small to Medium (d=0.38 or 0.57)	
Group Psychotherapy	Individual psychotherapy	Mental and behavioral health	1,[110] 71	Low, G1<G2 Small to medium (d=0.36 to 0.79)	Middle childhood to early adolescence, any caregiver
Combined Parent-Child Cognitive Behavioral Therapy	Active Control[e]	Mental and behavioral health	1,[100] 75	Low Medium (d=0.61)	Middle childhood to early adolescence, exposed to physical abuse, maltreating parents
		Healthy caregiver-child relationship	1,[100] 75	Insufficient	
Trauma-Focused Cognitive Behavioral Therapy Group Adaptation	Active control[f]	Mental and behavioral Health	1,[113] 44	Insufficient	Early to middle childhood, exposed to sexual abuse, any nonmaltreating caregiver
		Healthy caregiver-child relationship	1,[113] 44	Insufficient	
Eye Movement Desensitization and Reprocessing	Active Control[e]	Mental and behavioral health	1,[105] 14	Insufficient	Early adolescence, no caregiver included

[a]We order the results in the summary tables by strength of evidence, taking into consideration the size of the body of evidence (e.g., number of trials and participants), magnitude of effect, and duration of intervention outcomes.

[b]All SOE results are G1>G2 unless noted otherwise.

[c]For estimation of the magnitude of effect, we include only the statistically significant ($p<0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as Cohen's d = 0.20, 0.50, and 0.80. We include an effect size range when more than two effect sizes are reported. Authors did not report effect sizes for some measures.

[d]One comparator is a conventional approach, the other a derived approach.

[e]Active comparator is an approach derived from an intervention wherein the degree to which core components of the original model are implemented is unclear and/or core components are omitted or substantively modified.

[f]Active comparator is an approach representative of a conventional practice in the field.

KQ4b. Child Welfare and Child Well-Being Outcomes in Caregiver Subgroups

Key Points

Overview

- In this section, we address 18 intervention trials that pertain to child mental health, healthy caregiver child relationship, healthy development, and safety in the context of two caregiver subgroups: (1) maltreating, biological parents and (2) foster of kinship care parents. To date these trials have been reported in 32 articles.[74-82, 84-86, 88-91, 94, 100, 114-116, 118-120, 122-128]
- Maltreating parents are the focus in 12 trials and 13 articles.[78-82, 86, 88-91, 94, 100] Among these trials, two included child mental and behavioral health outcomes;[82, 100] eight included healthy caregiver child relationship outcomes,[78-82, 86, 88, 89, 94] and four addressed safety.[86, 90, 91, 94]
- Foster parents and kinship caregivers are an intervention target in 6 trials and 19 articles.[74-77, 84, 85, 114-116, 118-120, 122-128] Each of the six trials addressed child mental health and healthy caregiver child relationship outcomes. Two of the trials incorporated healthy development outcomes and addressed the child welfare outcomes placement stability and permanency.[85, 118, 119, 124, 127, 128]
- We did not identify eligible trials focused on adoptive parents, either already related or not previously related to the child.
- We did not identify eligible trials addressing maltreated children in residential or group care, addressing caregivers with mental health or substance abuse problem, and caregiver sociodemographics (e.g., age, sex, race, ethnicity).

Primary Caregiving Context:

- **Maltreating Parents:**
  - In one RCT, an adaptation of Parent-Child Interactional Therapy resulted in greater reductions in future reports of maltreatment recurrence among physically abusive parents compared with variants of the experimental intervention and with usual care; a trend towards this effect was found in a second trial (low strength of evidence).90, 91
  - In one non-concurrent cohort study, the New Orleans intervention resulted in greater risk reduction in child and maternal recidivism compared with usual care (low strength of evidence).121
  - In one RCT, Combined Parent-Child Cognitive Behavioral Therapy directed at the child and his or her physically abusive parent resulted in better child mental health outcomes compared with an active control (low strength of evidence).100.
  - In one RCT, Project Support resulted in superior improvements in healthy caregiver-child relationship outcomes in a sample of maltreating mothers compared with usual care (low strength of evidence).94.
  - In two RCTs, Child-Parent Psychotherapy resulted in superior healthy caregiver-child relationship outcomes for young children and their maltreating parents compared with usual care (low strength of evidence).[79, 80]

- In one RCT, an Attachment-based Intervention improved caregiver-child relationship outcomes for young children and their maltreating parents relative to mother-infant pairs in usual care (low strength of evidence).[78]
- In one RCT, Multifamily Group Therapy resulted in improved caregiver-child relationship outcomes compared with traditional family therapy for maltreating families (low strength of evidence).[88, 89]
- In one RCT, Incredible Years improved child mental and behavioral health and caregiver-child relationship outcomes;[82] a second trial showed an improvement in caregiver-relationship outcomes (low strength of evidence).[81]
- In one RCT, a Nurse Home Visitation Intervention with maltreating mothers did not result in statistically significant benefit in any of the selected outcomes (insufficient)[86]

- **Foster and Kinship Parents:**
  - In one RCT, the Bucharest Early Intervention Project yielded improvements in child mental and behavioral health, caregiver-child relationship, and developmental outcomes compared with usual (institutional) care (low strength of evidence)[114, 115, 116, 118-120]
  - In one RCT, Keeping Foster and Kinship Parents Trained and Supported resulted in greater improvements in child mental and behavioral health, caregiver-child relationship, and permanency outcomes compared with usual care (low strength of evidence).[84, 85]
  - In one RCT, Multidimensional Treatment Foster Care for Preschoolers resulted in superior child mental and behavioral health, caregiver-child, developmental, and permanency outcomes compared with usual care (low strength of evidence).[122, 123, 125-128]
  - In three trials with different comparators, Attachment and Biobehavioral Catch-up improved child mental and behavioral health and caregiver-child relationship outcomes among foster parents caring for young children, compared with an active control and usual care (low strength of evidence).[74-77]

Detailed Synthesis

Primary Caregiving Context: Maltreating Parents

We identified 12 trials that addressed interventions with maltreating parents.[78-80, 86, 88-91, 94, 100] We note these studies in Table 79 but do not discuss them here, as they are discussed in previous sections of the Results chapter.[74-77, 84, 85, 114-116, 118-120, 122-128]

Primary Caregiving Context: Foster and Kinship Parents

We identified 6 trials that evaluated interventions for foster or kinship parents. We note these studies in Table 79 but do not discuss them here, as they are discussed in previous sections of the Results chapter.[74-77, 84, 85, 114-116, 118-120, 122-128]

Table 81. Strength of evidence summary table: Maltreating parents[a]

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence[b] Magnitude of Effect[c]	Study Population
New Orleans Intervention	Usual care	Safety	1,[121] 255	Low Relative Risk Reduction=67.9% [95%CI 0.11 to 0.90] to 74.7% [95%CI 0.11 to 0.93]	Early childhood, maltreating parent and foster caregiver
		Permanency	1,[121] 240	Low, G1 < G2	
Parent-Child Interaction Therapy(PCIT) Adaptation Package[d]	PCIT Adaptation Package enhanced[e]	Safety	1,[91] 75	Insufficient	Early childhood to early adolescence, maltreating caregiver
	PCIT + standard orientation	Safety	1,[90] 70	Low Hazard Ratio=0.10	
	Usual care + standard orientation	Safety	2,[90,91] 153	Low	
	Usual care + Motivational Intervention	Safety	1,[90] 70	Low Hazard Ratio=0.11	
Combined Parent-Child Cognitive Behavioral Therapy	Active Control[f]	Mental and behavioral health	1,[100] 75	Low Medium (d=0.61)	Middle childhood to early adolescence, exposed to physical abuse, maltreating parents
		Healthy caregiver-child relationship	1,[100] 75	Insufficient	
Project Support	Usual care	Healthy caregiver child relationship	1,[94] 35	Low Large (d =0.86 or 1.02)	Early to middle childhood, maltreating parent
		Safety	1,[94] 35	Insufficient	
Child-Parent Psychotherapy[g]	Active control[f]	Healthy caregiver child relationship	2,[79,80] 159	Insufficient	Early childhood, maltreating parent
	Usual care	Healthy caregiver child relationship	2,[79,80] 141	Low Medium to large (h=0.64 to 1.34)	
Attachment-based Intervention	Usual care	Mental and behavioral health	1,[78] 79	Insufficient	Early childhood, maltreating parent
		Healthy caregiver child relationship	1,[78] 79	Low Small to medium (d=0.47, r=0.36 or 0.37)	
Multifamily Group Therapy	Active control[g]	Healthy caregiver child relationship	1,[88,89] 78	Low	Early childhood to early adolescence, maltreating parent

Table 78. Strength of evidence summary table: Maltreating parents[a] (continued)

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence[b] Magnitude of Effect[c]	Study Population
Incredible Years	Wait list[h]	Mental and behavioral health	1,[82] 45	Low Small (Êta=0.18 or 0.21)	Early to middle childhood, maltreating parent
		Healthy caregiver-child relationship	2,[81,82] 75	Low Small to Large (Êta =0.13 to 0.48)	
Nurse-Home Visitation Intervention	Usual care	Mental and behavioral health	1,[86] 163	Insufficient	Early childhood to early adolescence, maltreating parent
		Healthy caregiver child relationship	1,[86] 163	Insufficient	
		Safety	1,[86] 163	Insufficient	
PCIT Adaptation Package[e] enhanced[f]	Usual Care	Safety	1,[91] 88	Insufficient	Early childhood to early adolescence, maltreating parent

[a]We order the results in the summary tables by strength of evidence, taking into consideration the size of the body of evidence (e.g., number of trials and participants), magnitude of effect, and duration of intervention outcomes.

[b]All SOE results are G1>G2 unless noted otherwise.

[c]For estimation of the magnitude of effect, we include only the statistically significant (p<0.05) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as: Cohen's *d* = 0.20, 0.50, and 0.80; Cohen's *h* = 0.20, 0.50, and 0.80; and correlation coefficient *r* = 0.10, 0.30, and 0.50.[150] When authors use Eta or partial eta squared effect sizes we use the interpretation that the authors provide. We include an effect size range when more than two effect sizes are reported. Authors did not report effect sizes for some measures.

[d]"Package" refers to the inclusion of a supplemental motivational intervention orientation.

[e] "Enhanced " refers to the provision of individualized services to the parents

[f]Active comparator is an approach derived from an intervention wherein the degree to which core components of the original model are implemented is unclear and/or core components are omitted or substantively modified.

[g]One comparator is a conventional approach, the other a derived approach.

[h]The comparison group for one study was an n < 10 participants.

Table 82. Strength of evidence summary table: foster and kinship parents[a]

Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence[b] Magnitude of Effect[c]	Study Population
Multidimensional Treatment Foster Care for Preschoolers	Usual care	Mental health and behavior	1,[126] 117	Low Medium (d=0.64 to 0.68)	Early to middle childhood, foster caregiver
		Healthy caregiver-child relationship	1,[123, 125] 117	Low	
		Healthy development	1,[122] 23	Low	
		Placement stability	1,[128] 117	Insufficient	
		Permanency	1,[124, 127] 90	Low	
Bucharest Early Intervention Project	Usual care (institutional Care in Romania)	Mental health and behavior	1,[114-116] 136	Low Odds Ratio 2.8 [95% CI, 1.2 to 6.4]	Institutionalized children, foster caregivers
		Healthy caregiver-child relationship	1,[120]136	Low	
		Healthy development	1,[118, 119] 136	Low ES[d] =0.47 or 0.62	
Keeping Foster and Kinship Parents Trained and Supported	Usual care	Mental and behavioral health	1,[84] 700	Low Small (d=0.26)	Early childhood to early adolescence, foster caregiver
		Healthy caregiver-child relationship	1,[84] 700	Low Small (d=0.29)	
		Placement Stability	1,[84] 700	Insufficient	
		Permanency	1,[84] 700	Low	
Attachment and Biobehavioral Catch-up	Active control[e]	Mental and behavioral health	2,[74, 75] 153	Low	Early childhood, foster caregiver
		Healthy caregiver- child relationship	1,[76] 46	Low	
	Wait list	Mental and behavioral health	1,[77] 58	Low Medium (Partial eta squared =0.436 or 0.511)	
		Healthy caregiver-child relationship	1,[77] 58	Low Medium or large (Partial eta squared =0.59 or 0.791)	

[a]We order the results in the summary tables by strength of evidence, taking into consideration the size of the body of evidence (e.g., number of trials and participants), magnitude of effect, and duration of intervention outcomes.

[b]All SOE results are G1>G2 unless noted otherwise.

[c]For estimation of the magnitude of effect, we include only the statistically significant ($p<0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as Cohen's d = 0.20, 0.50, and 0.80.[150] When authors use partial eta squared effect sizes we use the interpretation that the authors provide. We include an effect size range when more than two effect sizes are reported. Authors did not report effect sizes for some measures.

[d]Effect size measure is not specified, therefore we did not classify the magnitude of effect as small, medium, or large.

[e]Active comparator is an approach derived from an intervention wherein the degree to which core components of the original model are implemented is unclear and/or core components are omitted or substantively modified.

Key Question 5. Comparative Effectiveness of Interventions with Children Exposed to Maltreatment for Engaging Children and/or Caregivers in Treatment

Organization

We identified a single intervention for inclusion in this key question. In the key points section, we present the strength of evidence grade for each outcome. We present an overview of study results in the detailed synthesis section.

Description of Included Studies

We present the results of two trials (Table 80)[90, 92] that assess the effectiveness of an intervention for engaging participants in treatment and treatment retention.

Table 83. Numbers of trials and articles investigating treatment engagement or retention

Intervention	Trials
Motivational Intervention	2
Total	***2***

Key Points: Motivational Intervention

Overview

- We identified two randomized controlled trials (RCTs) that assessed the comparative efficacy of a brief motivational intervention orientation designed to increase maltreating parents' engagement and retention in parenting services (Table 81).[90, 92]
- In both trials, Chaffin and colleagues[90, 92] compared the motivational intervention with a standard orientation to parenting services routinely provided to families involved with child protective services (CPS).
- Both trials reported treatment engagement outcomes, while only one reported on treatment retention.

Motivational Intervention

- **Treatment engagement:** Maltreating parents who participated in the motivational intervention orientation reported greater readiness for change and other positive self-motivational outcomes compared with parents who participated in a standard orientation (moderate strength of evidence).[90, 92]
- **Treatment retention**: Maltreating parents who participated in Parent-Child Interaction Therapy (adapted for families perpetrating abuse or neglect) preceded by the motivational intervention orientation had higher completion rates compared with parents who participated in a standard orientation and the adapted version of Parent-Child Interaction Therapy (low strength of evidence)[92] (Table 81).

Table 84. Motivational intervention orientation: Strength of evidence for treatment engagement and retention outcomes

Intervention	Comparator	Outcome	Number of Trials, Number of Participants	SOE and Magnitude of Effect	Study Population
Motivational Intervention	Standard Orientation	Treatment engagement	2,[90-92] 345	Moderate Small (d=0.33)	Early childhood to early adolescence, maltreating parent
Parent-Child Interaction Therapy Adaptation Package[d]	Parent-Child Interaction Therapy plus standard orientation	Treatment retention	1,[92] 192	Low	Early childhood to early adolescence, maltreating parent

[a]We order the results in the summary tables by strength of evidence, taking into consideration the size of the body of evidence (e.g., number of trials and participants), magnitude of effect, and duration of intervention outcomes.

[b]All SOE results are G1>G2 unless noted otherwise.

[c]For estimation of the magnitude of effect, we include only the statistically significant ($p<0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as Cohen's d = 0.20, 0.50, and 0.80.[150] We include an effect size range when more than two effect sizes are reported. Authors did not report effect sizes for some measures.

[d]"Package" refers to the inclusion of a supplemental motivational intervention orientation.

Detailed Synthesis, Motivational Intervention Orientation

Chaffin and colleagues assessed the effectiveness of motivational intervention orientation compared with a routine orientation program for families involved with CPS in increasing parents' engagement and retention in the intervention services (Table 82).[90, 92] The motivational intervention orientation comprised six clinic-based group sessions and employed a variety of self-motivational strategies including testimonials from parents who completed the Parent-Child Interaction Therapy (PCIT) adaptation, decisional exercises weighing the pros and cons of harsh physical discipline and of change, encouraging parents to develop their own list of parenting and parent-child relationship goals, elaborating discrepancy between current parent-child interactional patterns and personalized goals, and encouraging the parents' commitment to change.[91] The standard orientation comprised six sessions and was primarily informational and educational. Topics addressed in the standard orientation included the roles of child welfare and of the service provider organization, definitions of child maltreatment and how it affects children, and information about the possible insight-oriented links between a parent's own childhood experiences and current parenting practices.

Table 85. Motivational Intervention: Study characteristics

First Author et al., Year Country	Sample Description (Age Group)	Study Design and Duration	Comparison Groups	Baseline N	Risk of Bias
Chaffin et al., 2009[92]	Physically abused children ages 4 to 12 years	RCT 6 weeks (treatment engagement) and ≥18 to 20 weeks (treatment retention)	G1: PCIT-AP[a] G2: Motivational intervention +usual care G3: standard orientation + PCIT G4: standard orientation + usual care	G1: 34 G2: 41 G3: 36 G4: 42 Overall N=153	Medium
Chaffin et al., 2011[90]	Maltreated children ages 2.5 to 12 years and their caregivers	RCT Median follow-up time=64 days (after 6-week intervention)	G1: Motivational intervention G2: standard orientation	G1: 99 G2: 93 Overall N=192	Medium

[a] PCIT-AP includes the motivational intervention.

Abbreviations: G = group; PCIT = Parent-Child Interaction Therapy; PCIT-AP = Parent-Child Interaction Therapy – Adaptation Package; RCT = randomized controlled trial.

In an RCT conducted by Chaffin and colleagues, the authors first randomized participants either to the motivational intervention orientation or to the standard orientation (Table 83). Upon completion of the orientations, participants' readiness for change was measured.[92] Parents who participated in the motivational intervention had consistently greater improvements on the overall readiness scale ($p<0.01$) and on each of the subscales: readiness to change ($p<0.05$), attitude toward the program ($p<0.05$), and self-efficacy ($p=0.06$, trend). Participants were then randomized a second time to receive either the PCIT adaptation or usual care parenting services (the standard parenting program provided to parents involved with CPS). The PCIT adaption and standard parenting program had a comparable number of sessions. The study found higher

Table 86. Results: Motivational intervention orientation

First Author et al., Year	Comparison Groups	Treatment Engagement [a]	Treatment Retention
Chaffin et al, 2009[92]	G1: PCIT-AP [b] G2: Motivational intervention + usual care G3: PCIT + standard orientation G4: Standard orientation + usual care	**Increased readiness to change total score** (Readiness for Parenting Change Scale) (G1, G2)$^{+}$ > (G3, G4)$^{+}$, p<0.01 **Increased readiness to change** (Readiness for Parenting Change Scale subscale) (G1, G2)>(G3, G4), p<0.05 **Better attitude to the program** (Readiness for Parenting Change Scale subscale) (G1, G2)>(G3, G4), p<0.05 **Increased self-efficacy** (Readiness for Parenting Change Scale subscale) (G1, G2)>(G3, G4), p=0.06	**Higher percentage of treatment completers** G1>G2, p=0.01 G1>G3, p=0.05 G1>G4, p=0.05
Chaffin et al., 2011[90]	G1: Motivational intervention G2: standard orientation	**Increased readiness to change total score** (Readiness for Parenting Change Scale) G1^{+}>G2^{+}, p<0.01 d=0.33 [b]	NA
SOE Summary	G1: Motivational intervention G2: standard orientation	G1 > G2, Moderate	NA
SOE Summary	G1: PCIT-AP[b] G2: PCIT + standard orientation	NA	G1>G2, low

[a]Treatment engagement outcomes were assessed at the end of the motivational intervention, before participants began the second phase of intervention (i.e., either the PCIT adaptation or usual care parenting program)

[b]PCIT-AP includes the motivational intervention.

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Abbreviations: G = group; NA = not applicable; PCIT-AP = PCIT Adaptation Package; SOE = strength of evidence.

treatment completion rates among participants who received the PCIT adaptation + motivational intervention package (PCIT-AP; N=34) compared with participants who received any of the other conditions: (a) the motivational intervention in conjunction with the usual care parenting program (N=41), (b) the standard orientation in conjunction with the PCIT adaptation (N=36) or the standard orientation in conjunction with the standard parenting program (usual care; N=42) (all, p=sig).

In a second RCT, Chaffin and colleagues utilized the same double randomization scheme and again examined the impact of the respective orientation conditions on participants' readiness for change.[90] Though participants in both orientation conditions reported increased readiness for change, caregivers who participated in the motivational intervention orientation reported greater improvements in readiness for change (p<0.01, d=0.33).

Key Question 6. Adverse Events Associated with Interventions for Children Exposed to Maltreatment

We did not identify any studies reporting systematically assessed adverse events.

Discussion

This chapter summarizes key findings and strength of evidence for each key question (KQ), followed by a section on the applicability of the findings, a summary of the limitations of the comparative review process, limitations of the evidence base, and gaps in the evidence that may benefit from future research.

Key Findings and Strength of Evidence

Overview

Overall, the evidence from 25 trials and 1 cohort study (reported in in 42 articles) included in this comparative effectiveness review provides preliminary support for a number of promising approaches for addressing child exposure to maltreatment. We categorized the diverse array of interventions in the literature as parenting interventions, trauma-focused treatments, or enhanced foster care intervention approaches. Within and across these intervention types, approaches varied in treatment target, intensity, modality (i.e., service delivery strategy), and theoretical orientation. The majority of studies identified for this review was conducted in the United States and evaluated parenting interventions. In contrast, comparative studies of trauma-focused treatments were sparse, with two trials focused on one intervention[101, 112] and one study reported in an article published nearly 20 years ago.[111] Our review also included three trials of enhanced foster care interventions that, despite being literally worlds apart (foster care in the United States and institutional care in Bucharest, Romania), together provided compelling evidence for the effectiveness of multimodal, intensive, and individualized vehicles for addressing the vulnerable needs of abused and neglected children.[114-116, 119-128]

This review also illuminates important gaps in the evidence that reflect the relatively new field of evidence-based mental health treatment provided in the context of the myriad and complex challenges of caring for maltreated children, engaging and retaining maltreating parents in treatment, and working within the parameters of the child welfare arena. Head-to-head studies are scarce, as are multiple or independent (i.e., tested by researchers unaffiliated with intervention developers) trials. Sample sizes are commonly very small. A gap in the literature with implications for widespread implementation is the issue of “dose” or how much of an intervention is needed to affect change. None of the included studies addressed this issue. With the exception of studies involving younger children, few interventions were designed for or studied efficacy or effectiveness within specific age or developmental ranges. Similarly, studies rarely took into consideration or elucidated findings as they related to maltreatment type, severity, chronicity, timing, and exposure to other traumatic experiences. Also underrepresented in the literature were interventions studies specifically evaluating efficacy or effectiveness with the most vulnerable families; that is, maltreated children whose biological parents were struggling with substance abuse, mental health problems, or domestic violence.

Key Question 1: Comparative Effectiveness of Interventions for Improving Child Well-Being Outcomes

The summary of results for KQ 1 is presented in Table 84. For KQ 1, we examined four sets of outcomes representing key dimensions of child well-being: child mental and behavioral health, the quality of the caregiver-child relationship (e.g., child attachment; caregiver responsivity and sensitivity; positive parental attitudes toward childrearing), children's development (e.g., cognition, language, physical maturation), and school-based functioning (e.g., grade retention, disciplinary referrals, attendance). Only 3 trials reported developmental outcomes, and we identified no studies eligible for inclusion that assessed school-based functioning. Collectively, the body of evidence for interventions that addressed child well-being in maltreated children provided either low strength of evidence or was insufficient to draw conclusions. Of the 23 eligible trials for this KQ, the vast majority provided evidence based solely on one trial, many with very small sample sizes. Among the 12 trials that resulted in statistically significant between-group differences in children's mental and behavioral health outcomes,[74-77, 82, 84, 100, 101, 106, 110, 112, 114-116, 126] only two interventions were tested in more than one trial (both graded as low strength of evidence): an intervention for foster parents caring for very young children, Attachment and Biobehavioral Catch-up[74-76]and a trauma-focused treatment evaluated with sexually-abused children, Trauma-Focused Cognitive-Behavioral Therapy.[101, 112]

Regarding healthy caregiver-child relationship outcomes, 14 of the 23 trials, representing all 3 types of interventions, resulted in statistically significant between-group differences.[76-84, 88, 89, 94, 101, 120, 123, 125] However, the robustness of these findings is undermined by the indirect nature of much of the evidence, as only three trials assessed child attachment behaviors directly through objective observation.[78, 79, 120] Additionally, studies predominantly assessed caregiver behavior changes via parent self-report measures, or subscales of measures, which reflected varying degrees of established validity. This heterogeneity of measurement made it difficult to generalize findings across studies for the caregiver-child relationship outcomes.

The three trials that assessed developmental outcomes[118, 119, 122] were all interventions that directly supported children's development. For example, children in Multidimensional Treatment Foster Care for Preschoolers received services from a behavioral specialist working in both preschool/child care and home-based settings.[124]Two of these trials, Multidimensional Treatment Foster Care for Preschoolers and the Bucharest Early Intervention Project, yielded benefits compared with usual care in developmental as well as mental and behavioral health and caregiver-child relationship outcomes.[114-116, 118-120, 122, 123, 125, 126]

We found no eligible studies that assessed school-based functioning. This finding was perhaps attributable to the age range specified for this review (birth to 14 years) but surprising, nonetheless, given the emphasis on school readiness and performance in the educational system in the United States.

Table 87. Summary of results for child well-being and child welfare (KQ1 and KQ2) outcomes[a]

Type	Intervention	Comparator	Outcome	Number of Trials, Participants	Strength of Evidence[b] Magnitude of Effect[c]	Study Population
Parenting Interventions	Keeping Foster and Kinship Parents Trained and Supported	Usual care	Mental and behavioral health	1,[84] 700	Low Small (d=0.26)	Early childhood to early adolescence, foster caregiver
			Healthy caregiver-child relationship	1,[84] 700	Low Small (d=0.29)	
			Placement Stability	1,[84] 700	Insufficient	
			Permanency	1,[84] 700	Low	
	Attachment and Biobehavioral Catch-up	Active control[d]	Mental and behavioral health	2,[74,75] 153	Low	Early childhood, foster caregiver
			Healthy caregiver- child relationship	1,[76] 46	Low	
		Wait list	Mental and behavioral health	1,[77] 58	Low Medium (Partial eta squared =0.436 or 0.511)	
			Healthy caregiver-child relationship	1,[77] 58	Low Medium or large (Partial eta squared =0.59 or 0.791)	
	Parent-Child Interaction Therapy(PCIT) Adaptation Package[e]	PCIT Adaptation Package enhanced[f]	Safety	1,[91] 75	Insufficient	Early childhood to early adolescence, maltreating caregiver
		PCIT + standard orientation	Safety	1,[90] 70	Low Hazard Ratio=0.10	
		Usual care + standard orientation	Safety	2,[90,91] 153	Low	
		Usual care + Motivational Intervention	Safety	1,[90] 70	Low Hazard Ratio=0.11	
	Child-Parent Psychotherapy[g]	Active control[d]	Healthy caregiver child relationship	2,[79,80] 159	Insufficient	Early childhood, maltreating parent
		Usual care	Healthy caregiver child relationship	2,[79,80] 141	Low Medium to large (h=0.64 to 1.34)	
	Project Support	Usual care	Healthy caregiver child relationship	1,[94] 35	Low Large (d =0.86 or 1.02)	Early to middle childhood, maltreating parent
			Safety	1,[94] 35	Insufficient	
	Attachment-based Intervention	Usual care	Mental and behavioral health	1,[78] 79	Insufficient	Early childhood, maltreating parent
			Healthy caregiver child relationship	1,[78] 79	Low Small to medium (d=0.47, r=0.36 or 0.37)	

Table 84. Summary of results for child well-being and child welfare (KQ1 and KQ2) outcomes[a] (continued)

Type	Intervention	Comparator	Outcome	Number of Trials, Participants	Strength of Evidence[b] Magnitude of Effect[c]	Study Population
Parenting Interventions (continued)	Incredible Years Adaptation	Usual care	Mental and behavioral health	1,[83] 64	Insufficient	Early to middle childhood, maltreating parent and foster caregiver
			Healthy caregiver child relationship	1,[83] 64	Low Small to medium (d =0.40 or 0.59)	
	Multifamily Group Therapy	Active control[h]	Healthy caregiver child relationship	1,[88,89] 78	Low	Early childhood to early adolescence, maltreating parent
	Incredible Years	Wait list[i]	Mental and behavioral health	1,[82] 45	Low Small (Êta=0.18 or 0.21)	Early to middle childhood, maltreating parent
			Healthy caregiver-child relationship	2,[81,82] 75	Low Small to Large (Êta =0.13 to 0.48)	
	Nurse-Home Visitation Intervention	Usual care	Mental and behavioral health	1,[86] 163	Insufficient	Early childhood to early adolescence, maltreating parent
			Healthy caregiver child relationship	1,[86] 163	Insufficient	
			Safety	1,[86] 163	Insufficient	
	PCIT Adaptation Package[e] enhanced[f]	Usual Care	Safety	1,[91] 88	Insufficient	Early childhood to early adolescence, maltreating caregiver

Table 84. Summary of results for child well-being and child welfare (KQ1 and KQ2) outcomes[a] (continued)

Type	Intervention	Comparator	Outcome	Number of Trials, Participants	Strength of Evidence[b] Magnitude of Effect[c]	Study Population
Trauma-Focused Treatments	Trauma-Focused Cognitive Behavioral Therapy	Active Control[j]	Mental and behavioral health	2,[101, 112] 315	Low Small to Medium (d=0.30 to 0.70)	Early childhood to early adolescence, exposed to sexually abused, any nonmaltreating caregiver
			Healthy caregiver-child relationship	1,[101] 229	Low Small to Medium (d=0.38 or 0.57)	
	Fostering Healthy Futures	Inactive control	Mental and behavioral health	1,[106] 156	Low Small to Medium (d=0.30 to 0.51)	Middle childhood to early adolescence, no caregiver included
	Group Psychotherapy	Individual psychotherapy	Mental and behavioral health	1,[110] 71	Low, G1<G2 Small to medium (d=0.36 to 0.79)	Middle childhood to early adolescence, any caregiver
	Combined Parent-Child Cognitive Behavioral Therapy	Active control[d]	Mental and behavioral health	1,[100] 75	Low Medium (d=0.61)	Middle childhood to early adolescence, exposed to physical abuse, maltreating parents
			Healthy caregiver-child relationship	1,[100] 75	Insufficient	
	Group Psychotherapy	Individual psychotherapy	Mental and behavioral health	1,[110] 71	Low, G1<G2 Small to medium (d=0.36 to 0.79)	Middle childhood to early adolescence, any caregiver
	Trauma-Focused Cognitive Behavioral Therapy Group Adaptation	Active control[h]	Mental and behavioral Health	1,[113] 44	Insufficient	Early to middle childhood, exposed to sexual abuse, any nonmaltreating caregiver
			Healthy caregiver-child relationship	1,[113] 44	Insufficient	
	Play Therapy + Milieu Therapy	Milieu therapy	Mental and behavioral health	1,[111] 41	Insufficient	Early childhood, no caregiver included
			Healthy development	1,[111] 41	Insufficient	
	Eye Movement Desensitization and Reprocessing	Active Control[d]	Mental and behavioral health	1,[105] 14	Insufficient	Early adolescence, no caregiver included

Table 84. Summary of results for child well-being and child welfare (KQ1 and KQ2) outcomes[a] (continued)

Type	Intervention	Comparator	Outcome	Number of Trials, Participants	Strength of Evidence[b] Magnitude of Effect[c]	Study Population
Enhanced Foster Care Interventions	Multidimensional Treatment Foster Care for Preschoolers	Usual care	Mental health and behavior	1,[126] 117	Low Medium (d=0.64 to 0.68)	Early to middle childhood, foster parent
			Healthy caregiver-child relationship	1,[123, 125] 117	Low	
			Healthy development	1,[122] 23	Low	
			Placement stability	1,[128] 117	Insufficient	
			Permanency	1,[124, 127] 90	Low	
	Bucharest Early Intervention Project	Usual care (institutional Care in Romania)	Mental health and behavior	1,[114-116] 136	Low Odds Ratio 2.8 [95% CI, 1.2 to 6.4]	Institutionalized children, foster caregivers
			Healthy caregiver-child relationship	1,[120]136	Low	
			Healthy development	1,[118, 119] 136	Low ES[k] =0.47 or 0.62	
	New Orleans Intervention	Usual care	Safety	1,[121] 255	Low Relative Risk (RR) Reduction=67.9% [RR, 95%CI, 0.11 to 0.90] to 74.7% [RR, 95%CI, 0.11 to 0.93]	Early childhood, maltreating parent and foster caregiver
			Permanency	1,[121] 240	Low G1 < G2	

[a]We order the results in the summary tables by strength of evidence, taking into consideration the size of the body of evidence (e.g., number of trials and participants), magnitude of effect, and duration of intervention outcomes.

[a]All SOE results are G1>G2 unless noted otherwise.

[c]For estimation of the magnitude of effect, we include only the statistically significant (p<0.05) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as: Cohen's *d* = 0.20, 0.50, and 0.80; Cohen's *h* = 0.20, 0.50, and 0.80; and correlation coefficient *r* = 0.10, 0.30, and 0.50.[150] When authors use Eta or partial eta squared effect sizes we use the interpretation that the authors provide. We include an effect size range when more than two effect sizes are reported. Authors did not report effect sizes for some measures.

[d]Active comparator is an approach derived from an intervention wherein the degree to which core components of the original model are implemented is unclear and/or core components are omitted or substantively modified.

[e]"Package" refers to the inclusion of a supplemental motivational intervention orientation.

[f]"Enhanced " refers to the provision of individualized services to the parents.

[g]Intervention is a variant of Child Parent Psychotherapy developed by Ciccetti and colleagues.[79, 80]

[h]Active comparator is an approach representative of a conventional practice in the field.

[i]The comparison group for one study was an n < 10 participants.

[j]One comparator is a conventional approach, the other a derived approach.

[k]Effect size measure is not specified, therefore we did not classify the magnitude of effect as small, medium, or large.

Key Question 2. Comparative Effectiveness of Interventions for Improving Child Welfare Outcomes

The summary of results for KQ 2 is presented Table 84. The outcomes for KQ 2 pertain to indicators of interest for the child welfare system: safety (i.e., maltreatment recurrence), placement stability, and permanency (e.g., positive permanency arrangements such as reunification with the parent or adoption by the biological parent or another relative). The evidence for child welfare outcomes is sparse compared to the research providing evidence on child well-being outcomes (KQ 1). The paucity of studies may reflect our exclusion of system-level interventions such as intensive family preservation or reunification service models. Of the seven eligible trials reviewed for this key question, five investigated the efficacy of parenting interventions and two examined enhanced foster care interventions for safety, placement stability, or permanency outcomes. Three trials, two pertaining to a single intervention (an adaptation of Parent-Child Interaction Therapy)[90, 91] and one pertaining to an enhanced foster care intervention were not among those included in the results for KQ 1;[121] the other four trials evaluated four interventions reviewed under KQ 1.[85, 86, 94, 124, 127, 128] The studies analyzed for KQ 2 include randomized controlled trials (RCTs) and one non-concurrent cohort study. The included studies target (1) maltreating families to prevent maltreatment recurrence, or (2) foster parents to promote placement stability and positive permanency outcomes.

Both the Keeping Foster and Kinship Parents Trained and Supported parenting intervention and the Multidimensional Treatment Foster Care for Preschoolers enhanced foster care intervention positively affected permanency but not placement outcomes.[85, 124, 127, 128] Interpretation of the findings from these trials is complicated by the fact that the Keeping Foster and Kinship Parents Trained and Supported training program is based on the foster parent training developed for Multidimensional Treatment Foster Care for Preschoolers. Relative to the Multidimensional Treatment Foster Care for Preschoolers intervention, Keeping Foster and Kinship Parents Trained and Supported was intended as a less intensive approach, delivered in group format, which would apply to the spectrum of child welfare involved families. The findings for the Keeping Foster and Kinship Parents Trained and Supported trial, which was based on a large sample size, offers intriguing preliminary evidence that a less intensive foster parent training program may be as efficacious as a more comprehensive approach in promoting positive permanency outcomes.

The New Orleans Intervention, a multimodal approach with adjudicated infants and toddlers in foster care, resulted in significant reductions in the risk of child recidivism and also the risk of maternal recidivism for subsequent children (among mothers whose parental rights were terminated for the index child). This intensive and individualized approach was also found to increase termination of parental rights and decrease reunification between the child and his or her biological caregiver. The study authors suggest that the increased scrutiny afforded by the intensive intervention likely contributed to these permanency outcomes. Ideally, a positive outcome for adjudicated children is reunification with a rehabilitated biological parent wherein the risks to safety and child well-being have been effectively addressed with intervention. However, the termination of parental rights was may have been a de facto protective outcome for the extremely vulnerable population of children in the New Orleans study.

Among the parenting interventions we reviewed, Parent-Child Interaction Therapy adapted for physically abusive parents, in combination with motivational intervention, yielded significant benefit in reducing maltreatment recurrence.[90, 91] Moreover, the package of the motivational

intervention combined with Parent-Child Interaction Therapy was found to be more efficacious in reducing maltreatment recurrence than an enhanced version that included individual services for the parent along with home visiting to support parenting behaviors learned in the clinical sessions. Taken together, these findings suggest that physically abusive parents benefit from an intervention that invests time up-front to engender the parent's motivation to change their behaviors and provides intensive, directive support for changing negative parenting behavior.

We found insufficient evidence to draw conclusions regarding the efficacy of two home visiting interventions in addressing child welfare outcomes. Of note, both approaches were derived from existing interventions that had originally been developed as preventive approaches for families at risk (i.e., they were not designed to prevent maltreatment recurrence in families where abuse or neglect had already occurred).

Key Question 3. Comparative Effectiveness of Interventions with Different Characteristics

With input from our technical expert panel, we identified three types of characteristics to examine for KQ3: modality (that is, the service delivery format such as individual child-directed, individual parent-directed, dyadic, family, group-based), theoretical orientation, and specialty or nonspecialty service delivery settings. We selected modality and setting because of their cost and treatment implications and to build on previous systematic reviews that examined intervention effectiveness by theoretical orientation.[129, 130, 158] Our search for evidence on the comparative effectiveness of interventions with different treatment characteristics yielded few studies. As presented in Table 85, we identified five trials that addressed modality or theoretical orientation.[74-76, 88, 89, 101, 110] No eligible studies explicitly focused on comparing an intervention's efficacy or effectiveness in different types of settings.

Regarding modality, two trials compared the effectiveness of an intervention approach delivered in different formats.[88, 89, 110] The sparseness of evidence in this area reflects the predominant use of multiple modalities to address child maltreatment, with most interventions using a combination of sessions directed at the child individually or in a group format, the caregiver alone or in a group format, and/or joint (or dyadic) sessions working with the child and caregiver together. One of the two trials that addressed modality compared psychotherapy delivered in either a group or individual format;[110] the other compared family therapy delivered in a multiple family versus single family context.[88, 89] In both studies, neither design nor methods indicated that modality was a comparison of interest. Therefore, these comparisons involved interpretation on our part that may not be aligned with the researchers' intent. The group versus individual format comparison resulted in an unexpected finding that was contrary to the study hypothesis that group therapy would be less efficacious than individual psychotherapy for reducing trauma symptoms and psychological impairment in sexually abused girls.[110] The other study found that the multiple family treatment context yielded improved caregiver-child relationship outcomes compared with conventional, single family therapy (this study did not examine child mental and behavioral health outcomes).[88, 89]

Theoretical orientation could not be readily differentiated for meaningful contrasts because, in many studies, the description of the theoretical basis was not clear enough to make a determination. Another complication was that interventions were commonly based on more than one driving theory, rendering a set of idiosyncratic and eclectic approaches that did not lend itself to analysis for KQ 3. For example, Parent-Child Interaction Therapy is based in both social learning and attachment theory, and the variant of Child-Parent Psychotherapy included in this

Table 85. Summary of results for the comparative effectiveness of interventions with different intervention characteristics

Characteristics	Intervention (G1)	Comparison (G2)	Outcome	N Trials, Participants	Strength of Evidence[a] Magnitude of Effect[b]	Study Population
Modality	Group Psychotherapy	Individual Psychotherapy	Mental and behavioral health	1,[110] 71	Low G1 < G2 Small to medium (d=0.30 to 0.57	Middle childhood to early adolescence, children exposed to sexual abuse, foster or biological parents
	Multifamily Group Therapy	Single Family Therapy	Healthy caregiver-child relationship	1,[88,89] 78	Low	Early childhood to early adolescence, maltreating parent
Theoretical Orientations	Attachment-based	Psycho-educational (non-attachment based)	Mental and behavioral health	2,[74,75] 153	Low	Early childhood
			Healthy caregiver-child relationship	1,[76] 46	Low	
	Cognitive-behavioral	Psycho-dynamic	Mental and behavioral health	1,[101] 229	Low Small to medium (d=0.33 to 0.70)	Middle childhood to early adolescence, children exposed to sexual abuse, any nonmaltreating parent
			Healthy caregiver-child relationship	1,[101] 229	Low Small to medium (d=0.38 to 0.57)	

[a]All SOE results are G1>G2 unless noted otherwise.

[b]For estimation of the magnitude of effect, we include only the statistically significant (p<0.05) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as Cohen's *d* = 0.20, 0.50, and 0.80.[150] We include an effect size range when more than two effect sizes are reported. Authors did not report effect sizes for some measures.

review is heavily grounded in both psychoanalytic and attachment theory. Ultimately, we were able to identify three trials comparing an approach that was clearly reflective of a particular theoretical orientation against a clearly differentiated comparator.[74-76, 101] Two of these trials examined Attachment and Biobehavioral Catch-up, a low-intensity attachment-based intervention with foster parents and young children, relative to an alternative psychoeducational approach in which the attachment-relevant content was excised (a derived comparator).[74-76] In both trials, the children in the attachment-based condition exhibited better cortisol regulation compared with children in the psychoeducational condition; in one trial, caregivers reported that children's avoidant attachment behaviors improved. The third trial investigated a cognitive behavioral approach, Trauma-Focused Cognitive Behavioral Therapy, compared with a psychodynamic, child-centered treatment akin to conventional practice.[101] The cognitive behavioral approach resulted in greater overall improvements in child behavior compared with the psychodynamic approach. However, unlike the psychodynamic alternative, the cognitive behavioral approach explicitly incorporated a trauma-specific focus. As a result, outcomes could not be attributed clearly to the effect of the theoretical orientation or to the trauma focus. Overall, the limitations associated with both the modality and theoretical orientation comparisons, as well as the overall paucity of studies focused on these outcomes or differences across settings, rendered the evidence for KQ 3 inconclusive.

Key Question 4. Comparison of Intervention Effectiveness for Improving Child Well-Being or Child Welfare Outcomes in Population Subgroups

KQ 4 examined the comparative effectiveness of interventions for different child and caregiver subgroups. All trials analyzed for this key question were also examined in either or both KQ 1 and KQ 2. Table 86 presents the summary of results for KQ 4. The table presents the strength of evidence and also indicates with which subgroup population(s) the intervention was evaluated; many interventions pertained to multiple subgroups.

For child subgroups, we synthesized the evidence by age and other sociodemographics, maltreatment type, and the presence of mental or behavioral health problems. For caregiver subgroups, we synthesized the evidence by caregiving context (i.e., maltreating parent, foster or kinship parent, residential care). We intended to synthesize findings by a number of other salient child and caregiver characteristics: (a) caregiver mental health problems, substance abuse, domestic violence, and sociodemographic subpopulations, and (b) severity of maltreatment and children with special needs (e.g., prenatal substance exposure). However, we did not identify any eligible studies that explicitly focused on these subgroups or stratified findings by these subgroups, so they are not represented in the results for KQ 4. Also, a number of studies excluded parents with active substance abuse or mental illness and children with documented developmental disabilities. We should also point out that because no studies did not stratify within the area of interest, we could not compare the results of the same intervention across different subgroups within a subgroup area of interest.

For child age, we found evidence for two interventions with young children (ages 0 to 5 years) in improving mental and behavioral health and caregiver-child relationship outcomes (low strength of evidence).[74-76] Both interventions were directed at children and their foster parents: Attachment and Biobehavioral Catch-up and the Bucharest Early Intervention Project.[114-116, 120] The latter also reported benefits in developmental outcomes (low strength of evidence).[118, 119] We

Table 86. Summary of results for child and caregiver population subgroups[a]

Intervention	Comparator	Outcomes	0 to 5	6 to 10	11 to 14	Female	Neglect	Physical Abuse	Sexual Abuse	Trauma Symptoms	Maltreating caregiver	Foster Caregiver
Child-Parent Psychotherapy[b]	Usual care	healthy caregiver-child relationship	X	-	-	-	-	-	-	-	X	-
Attachment-based Intervention	Usual care	healthy caregiver-child relationship	X	-	-	-	-	-	-	-	X	-
Bucharest Early Intervention Project	Usual care	mental and behavioral health healthy caregiver-child relationship healthy development	X	-	-	-	X	-	-	-	-	X
Attachment and Biobehavioral Catch-Up	Active control[c]	mental and behavioral health healthy caregiver-child relationship	X	-	-	-	-	-	-	-	-	X
	Wait list	mental and behavioral health healthy caregiver-child relationship	X	-	-	-	-	-	-	-	-	X
Incredible Years[d]	Wait list	mental and behavioral health healthy caregiver-child relationship	X	X	-	-	X	-	-	-	X	-
Project Support[d]	Usual care	healthy caregiver-child relationship	X	X	-	-	-	-	-	-	X	-
Multidimensional Treatment Foster Care for Preschoolers[d]	Usual care	mental and behavioral health healthy caregiver-child relationship healthy development permanency	X	X	-	-	-	-	-	-	-	X
Trauma-Focused Cognitive Behavioral Therapy[d]	Active control[e]	mental and behavioral health healthy caregiver-child relationship	X	X	X	-	-	-	X	X	-	-
Multifamily Group Therapy[d]	Active control[f]	healthy caregiver-child relationship	X	X	X	-	-	-	-	-	X	-
Parent-Child Interaction Therapy (PCIT) Adaptation Package[dg]	Usual care + standard orientation	safety	X	X	X	-	-	X	-	-	X	-
	Usual care + Motivational Intervention	safety	X	X	X	-	-	-	-	-	X	-
	PCIT + standard orientation	safety	X	X	X	-	-	-	-	-	X	-

Table 86. Summary of results for child and caregiver population subgroups[a] (continued)

Intervention	Comparator	Outcomes	0 to 5	6 to 10	11 to 14	Female	Neglect	Physical Abuse	Sexual Abuse	Trauma Symptoms	Maltreating caregiver	Foster Caregiver
Keeping Foster Parents Trained and Supported[d]	Usual care	mental and behavioral health healthy caregiver-child relationship placement stability permanency	X	X	X	-	-	-	-	-	-	X
Combined Parent-Child Cognitive Behavioral Therapy[d]	Active control[c]	mental and behavioral health	-	X	X	-	-	X	-	X	X	-
Group Psychotherapy	Individual Psychotherapy	G1 < G2 mental and behavioral health	-	-	X	X	-	-	X	X	-	-

[a] The table is sorted by age, sex, maltreatment type, symptoms, and caregiving context, in that order; further, when several interventions address the same subgroups, those with the most robust evidence are listed first. All outcomes presented in the table were graded as having a low strength of evidence with G1 > G2 unless otherwise noted. The table does not include outcomes for which there was insufficient evidence to draw a conclusion.

[b]Intervention is a variant of Child Parent Psychotherapy developed by Ciccetti and colleagues.[79, 80]

[c]Active comparator is an approach derived from an intervention wherein the degree to which core components of the original model are implemented is unclear and/or core components are omitted or substantively modified.

[d] KQ4 includes trials assessing interventions in populations that spanned more than one developmental period only if subgroup analyses were presented in the study.

[e]One comparator is a conventional approach, the other a derived approach.

[f]Active comparator is an approach representative of a conventional practice in the field.

[g]"Enhanced " refers to the provision of individualized services to the parents and home visiting to support skills learned in clinic-based therapy sessions.

Abbreviations: G = group; SOE = strength of evidence.

also found evidence supporting the comparative effectiveness of a variant of Child-Parent Psychotherapy developed by Cicchetti and colleagues[79, 80]and Attachment-based Intervention,[78] in benefits to the quality of the caregiver-child relationship. As noted, we would have liked to present a more fine-grained look at the youngest children, breaking out the evidence for very young children (infants and toddlers). However, we could not break down age subgroups further without creating duplication, as study populations commonly spanned wide swaths of child ages.

We identified only one trial that explicitly focused on children in the period of early adolescence; the study targeted sexually abused girls and was conducted in Iran.[105] This trial, which compared the efficacy of Eye Movement Desensitization Reprocessing with a highly modified version of Trauma-Focused Cognitive Behavioral Therapy that excluded the parent components in the standard version, was also relevant to several other subgroups (sex, type of abuse, type of maltreatment, presence of symptoms) but yielded insufficient evidence based on no differences between the study conditions. It should be noted that each of the study arms in this study comprised less than 10 participants. In addition to the Eye Movement Desensitization Reprocessing trial, we identified one other study that examined an intervention explicitly targeting girls.[110]This approach was an individual psychotherapeutic treatment, again for children exposed to sexual abuse. We found a low strength of evidence for this treatment, which reported substantively long-term benefits (up to two years after the start of treatment) in reducing trauma symptoms as compared with a group-based version of the treatment model.

For children exposed to neglect, we found low strength of evidence for two interventions in improving child well-being and the caregiver-child relationship: the Bucharest Early Intervention Project[114-116, 118-120] and the parent-group intervention known as the Incredible Years.[82] The Bucharest model also resulted in benefits for developmental outcomes. Several caveats must be noted about the Incredible Years evidence.[82] In one study, the comparison group was very small (n = 7); although we included studies with small sample sizes, this was one of only two studies reviewed with a study arm comprising less than ten participants.[82, 105] In the other study, change in parenting behavior was measured using an instrument developed by the authors with established content validity but no other validity data available; additionally, the findings were limited to a benefit in only one of the instrument's scales. An additional concern was that the intervention appeared to have been modified from the original in both studies in terms of the number of session and span of ages covered in the parent groups.

Three trauma-focused treatments explicitly targeted sexually abused children.[101, 105, 110, 112, 113] In two trials, Trauma-Focused Cognitive Behavioral Therapy, compared with active controls, reduced trauma and other mental and behavioral health symptoms and resulted in improved caregiver-child relationship outcomes (low strength of evidence).[101, 112] Also, as noted above, we found evidence for long-term (up to 2 years after the start of treatment) for an individual psychotherapy approach.[110] The psychoanalytically-oriented individual psychotherapy treatment developed by Trowell and colleagues also resulted in significant improvements in child mental health symptoms that were of notably long duration.[110]

We found evidence for two interventions that were evaluated with physically abusive parents: the Parent-Child Interaction Therapy Adaptation Package,[91] which included a motivational intervention component (low strength of evidence for reducing maltreatment recurrence) and the trauma-focused treatment, Child-Parent Combined Cognitive Behavioral Therapy (low strength of evidence for benefits in mental and behavioral health).[100] The cognitive behavioral treatment is based, in part, on another approach widely used in the field developed by Kolko and colleagues: Alternatives for Families – A Cognitive- Behavioral Therapy. This

treatment was not included because of study design limitations (pairwise comparisons, which are needed for comparative analysis, were not provided)[103] or the age of the child was older than that specified in our Population, Intervention, Comparators, Outcomes, Timing, and Settings (PICOTS).[159]

The studies targeting children with mental or behavioral health symptoms all focused primarily on traumatic stress outcomes. The strength of evidence for these studies has been discussed above, as the study populations overlapped with child sex, age, and/or type of maltreatment.[100, 101, 105, 110, 112, 113] Among these various approaches, the evidence was strongest for the comparative effectiveness of Trauma Focused Cognitive Behavioral Therapy[101, 112]and the individual psychotherapy treatment developed by Trowell and colleagues.[110] Each of these treatments was graded low strength of evidence. Although Child-Parent Combined Cognitive Behavioral Therapy was also graded as low strength of evidence for short-term benefits for child mental health outcomes, the strength of the evidence is attenuated by improvements in both groups, fade-out of the group difference by three month follow-up, and conflicting findings regarding changes in parenting behavior across parent and child report.[100]

In the area of caregiver subgroups, we found trials pertaining to caregiving context but not other caregiver characteristics. Twelve trials evaluated interventions with maltreating caregivers.[78-82, 86, 88-91, 94, 100, 121] We did not include a trial that examined a coparenting adaptation of the Incredible Years model targeting both biological and foster parents because the comparative results were not stratified by type of caregiver.[83] Among these studies, we found the strongest evidence for the New Orleans Intervention[121] for reducing the risk of child and maternal recidivism, for the Parent-Child Interaction Therapy Adaptation Package also in reducing recidivism,[90, 91, 160]and for the home-visiting approach, Project Support,[94] in improving both mental and behavioral health and caregiver-child relationship outcomes (all low strength of evidence). Other interventions found to have benefits in caregiver-child relationship outcomes were the Attachment-based Intervention,[78] the variant of Child-Parent Psychotherapy developed by Cicchetti and colleagues,[79, 80] and Multifamily Group Therapy[88, 89] (again, all approaches low strength of evidence).

Four interventions were evaluated with foster parents: Keeping Foster and Kinship Parents Trained and Supported;[84, 85] the Bucharest Early Intervention Project,[114-116, 118-120] Attachment and Biobehavioral Catch-up,[74-77]and Multidimensional Treatment Foster Care for Preschoolers (MTFC-P).[126]We found a low strength of evidence for each of these approaches in improving mental and behavioral health and caregiver child relationship outcomes. The Bucharest Early Intervention Project also yielded improved developmental outcomes,[118, 119]and both Keeping Foster and Kinship Parents Trained and Supported[85] and Multidimensional Treatment Foster Care-Preschoolers[124, 127, 128] increased positive permanency outcomes. The generally positive findings across the interventions for foster parents suggest the receptivity of this population to intervention and support.

Overall, our analysis for KQ 4 highlights the need for further attention to subpopulations in the literature, particular for caregiver characteristics. It was particularly notable that we could not identify any eligible studies that attended to race or ethnicity, given the attention to disproportionality in the child welfare arena.

Key Question 5. Comparative Effectiveness of Interventions with Children Exposed to Maltreatment for Engaging Children and/or Caregivers in Treatment

We identified three trials in the literature relevant to KQ 3 which assessed the comparative effectiveness of a motivational intervention designed to increase maltreating parents' engagement and retention in a parenting intervention (Table 87). The motivational intervention was a six-week group-based motivational orientation to parenting services for families referred by CPS for maltreatment.

The researchers compared Parent-Child Interaction Therapy (PCIT) combined with either the motivational intervention or usual CPS orientation for maltreating families referred for parenting services (see KQ 2 for further description of this intervention package). The PCIT package that incorporated the motivational intervention yielded better parental treatment engagement relative to those assigned to receive PCIT with the standard CPS orientation. In addition, PCIT plus the motivational intervention yielded improved treatment retention outcomes compared with PCIT plus the usual CPS orientation. These findings are notable in light of the paucity of comparative research on participant engagement and retention and because of the elevated (moderate) strength of the evidence.

Key Question 6. Adverse Events Associated with Interventions for Children Exposed to Maltreatment

We included a KQ examining adverse events because there is the potential for harms, even temporary, associated with treatment with children exposed to maltreatment. Such harms make take the form of retraumatization associated with gradual exposure or caregiver distress resulting from an increased awareness of the harm a child exposed to abuse and neglect experiences. However, our review did not identify any studies that included an explicit focus on adverse events.

Findings in Relationship to What is Already Known

This comparative effectiveness review contributes to the scientific literature on intervention effectiveness for maltreated children in several important ways. First, by limiting the population to children already exposed to maltreatment, the review addresses a major source of clinical heterogeneity that has limited the generalizability of other systematic review findings. Specifically, previous reviews have included intervention studies that target parents with risk factors associated with maltreatment (i.e., families in which maltreatment has not yet occurred) and parents who have already perpetrated abuse or neglected their children.[130, 134, 161] Although these two populations have significant overlap, at-risk parents present different clinical needs and considerations from parents who are actively abusive or neglectful; thus, the mixed nature of the population complicates interpretation and limits the generalizability of the findings.

This review also contributes to the literature by providing a comprehensive assessment of the range of interventions evaluated for children exposed to different types of maltreatment and which are appropriate for different caregiving contexts (i.e., maltreating parents or foster/kinship parents). We did this by analyzing the efficacy or effectiveness of interventions in different child and caregiver subgroups in KQ 4 (as described above). Other reviews have limited their included studies to those evaluating specific types of interventions or children exposed to specific types of

Table 87. Summary of results for treatment engagement and retention

Intervention	Comparator	Outcome	Number of Trials, Number of Participants	SOE and Magnitude of Effect	Study Population
Motivational Intervention	Standard Orientation	Treatment engagement	2,[90-92] 345	Moderate Small (d=0.33)	Early childhood to early adolescence, maltreating parent
Parent-Child Interaction Therapy Adaptation Package[d]	Parent-Child Interaction Therapy plus standard orientation	Treatment retention	1,[92] 192	Low	Early childhood to early adolescence, maltreating parent

[a]We order the results in the summary tables by strength of evidence, taking into consideration the size of the body of evidence (e.g., number of trials and participants), magnitude of effect, and duration of intervention outcomes.

[b]All SOE results are G1>G2 unless noted otherwise.

[c]For estimation of the magnitude of effect, we include only the statistically significant ($p<0.05$) effect sizes provided by study authors and do not calculate effect sizes as part of our analysis. Interpretation of the effect size as small, medium, or large is defined as Cohen's d = 0.20, 0.50, and 0.80.[150] We include an effect size range when more than two effect sizes are reported. Authors did not report effect sizes for some measures.

[d]"Package" refers to the inclusion of a supplemental motivational intervention orientation.

maltreatment or to other specific subgroups. For example, a Cochrane review in 2007 of studies through 2006 examined cognitive behavioral training for foster parents in managing challenging child behavior.[131] Another Cochrane review reports on the effectiveness of family therapy for children exposed to physical abuse.[162] Other reviews that limit to specific intervention types or subgroups include a meta-analysis of the effectiveness of psychotherapy with sexually-abused children,[129] a meta-analysis of parent training programs,[130] and a review that focused on psychotherapeutic interventions with children in foster care.[161]

Another unique feature of this comparative effectiveness review is that we used a developmental lens to guide decisions throughout the review process. For example, we excluded youth older than 14 years because of the considerable heterogeneity that older adolescents would represent in the population with their complex social, emotional, and cognitive capacities and needs. Additionally, we imposed this age cutoff in recognition of how maltreatment and its sequelae evolve across the development spectrum. KQ 4 (described above) followed the same pathway of developmental differentiation in that we analyzed findings for specific developmental periods in childhood. This review also includes a comprehensive and developmentally informed set of child well-being outcomes. For example, we assessed caregiver-child relationship, developmental, and school-based functioning outcomes in addition to child mental and behavioral health outcomes. Our treatment of parenting ideations and behaviors as indicators of the caregiver-child relationship rather than 'parent-level risk factors' emphasizes the transactional nature of a child's development in the context of the caregiving environment.[163]We believe this is the first systematic review guided explicitly by developmental considerations.

Overall, the findings presented in this report do not contradict but expand on and extend previously published findings, as this is the first systematic comparative review focused explicitly on interventions for maltreated children. By following the rigorous and transparent comparative effectiveness review methods of the Agency for Healthcare Research and Quality Effective Health Care program, our report illuminates the limitations of the evidence base and identifies critical methodological issues that must be addressed to move the field forward.

Applicability

As noted, during the review process we systematically abstracted key factors that may affect the applicability of the evidence base. We identified these key factors a priori, using as our guidepost the definition of applicability provided by the Agency for Healthcare Research and Quality (AHRQ) EHC program that defines applicability as "the extent to which the effects observed in published studies are likely to reflect the expected results when a specific intervention is applied to the population of interest under real-world conditions". Additionally, we explicitly sought to identify factors that related to each elements of the PICOTS framework that was used to guide the review. We present below the major issues that emerged from our analysis of factors affecting the applicability of the evidence base.

Population

The evidence base largely represents the target population of children exposed to maltreatment. However, among the studies evaluating parenting interventions with maltreating parents, exclusion criteria employed by researchers may have affected the applicability of the findings in important ways. These exclusion criteria include parents who were not willing to participate in the intervention, parents with active substance use or abuse, parents with mental

illness such as depression, and parents with a mental disability. As these population characteristics represent baseline risks that are prevalent in the target population,[49] particularly maternal depression,[164, 165] the applicability of the evidence is somewhat limited.

Intervention

The evidence base reflects the diverse range of intervention approaches in the field. The interventions reflected in this evidence base vary considerably in intensity. Those interventions with lower intensity (≤ 12 weekly sessions or approximately 3 months in duration) or medium intensity (13 to 24 weekly sessions and/or <6 months in duration) are more applicable to families involved with child protective services under the strict timeline set for permanency planning under the Adoption and Safe Families Act.[166] The majority of studies delivered the intervention under more ideal than real-world conditions, with staff who had received specialized training and/or were under close supervision of a highly specialized clinician (often the intervention developer). As noted, the interventions analyzed in the results all indicated that a manual was available. However, the interventions appear to vary considerably in the degree to which they are ready for dissemination and there is minimal discussion of fidelity considerations in the literature we reviewed.

Comparators

More than half of the comparisons in the evidence base evaluated the efficacy or effectiveness of the intervention against an active control. A third of these studies represented conventional practices in the field[88, 89, 101, 113] and the remainder were derivations of other approaches.[74-76, 79, 80, 100, 105, 112]The derived approaches made assessment of applicability difficult because it was not clear whether they reflected the best alternative treatments in the field, a modified version of an original model for which evidence of effectiveness exists in the scientific literature, or a significant divergence from fidelity to essential components of the original model (the case in five trials).[74-76, 79, 80, 105] Among these derived approaches, two were developed as active control interventions to counter nonspecific aspects of the experimental intervention. Thus, as new interventions, it could not be determined whether they represented a best available alternative.

Outcomes

The evidence base for the efficacy or effectiveness of parenting interventions in changing parenting behavior associated with maltreatment is limited by the heavy reliance on parent self-report measures of behavioral or attitudinal change, often using only subscales of measures or measures with weak evidence of their validity for this specific study population. While parent self-reports of parenting practices are important indices of the quality of the caregiver-child relationship and the risk of maltreatment recurrence, measurement of objectively observed and rated behavior change would strengthen the evidence of benefits. Additionally, few parenting interventions with maltreating parents used an objective observational measure of child attachment to measure change in the caregiver-child relationship. The most widely used and validated measure of attachment between a child and his or her parent (or primary caregiver) is a structured procedure in which the child experiences separations from and reunions with the parent.[167] This laboratory-based procedure, called the "Strange Situation, is the "measure of first choice for examining attachment intervention outcomes."[168] However, the validity of this measure is questionable for the foster care context, as a child in foster care may not have been in

a placement long enough to establish a relationship with or consider the foster parent as a primary caregiver. These measurement issues related to the caregiver-child relationship undermine the applicability of the evidence to the target population. In contrast, child mental and behavioral health outcomes, as assessed across the different types of interventions included in this review, were for the most part based on a narrow set of measures with established validity for the target population. It should be noted that few studies used child self-report of mental and behavioral health outcomes, although this may be a function of the age of the children in this review (as it is generally accepted that self-report is questionable for children younger than 11 years of age).[100, 106]

The child welfare outcomes data reported in the included studies were primarily drawn from child welfare agency records. This approach may strengthen the applicability of findings but only to the extent that CPS records objectively, accurately, and consistently report the relevant variables. However, the timing of follow up to assess maltreatment recurrence (i.e., safety) was variable across studies, making it somewhat difficult to apply the findings to the already complex recurrence data in the State Child and Family Service Reviews (the data used by the Federal government to monitor State child welfare programs in meeting safety, permanency, and family and child well-being outcomes).

The majority of studies included in this review, regardless of intervention type, collected child well-being outcomes only at postintervention and follow-up timepoints were commonly in the 3 to 6 months after the intervention ended. Although longer-term follow-up is important, short-term follow-up improvements do have important applicability to maltreated children, particularly those children at risk of being removed from the home or parents at risk of losing custody unless the risks that brought their case to the attention of the child welfare system are addressed.

Setting

Many of the studies were conducted in university- or community-based clinics, including organizations providing services for the child welfare system. As such, they are generally, but not wholly, representative of the settings in which interventions are delivered in the field. The studies were predominantly conducted in the United States. Four studies were conducted in other Western countries: three in Canada and one in the United Kingdom. Although these other settings were also Western countries, differences in child welfare systems and health service systems may affect the applicability of the study findings. One study was conducted in Iran; the other in Romania. The evidence from these latter studies may be less broadly applicable to higher income countries, although provide an important perspective on intervention for maltreated children in low and middle income countries.

Implications for Clinical and Policy Decision Making

The evidence base for effective interventions for maltreated children is primarily composed of single trials with relatively short-term results and is without head-to-head studies comparing interventions of interest. The evidence is further limited by many inconsistent or no difference findings in the studies we reviewed, which calls for further research to resolve incongruous findings and improve our confidence that the evidence as reported reflects the true effect. Thus, we cannot say with confidence that one intervention is more effective than another. A central finding of this review, therefore, is the scarcity of evidence to guide clinicians and policymakers in meeting the needs of this extremely vulnerable population of children.

Within these parameters, of the parenting interventions we reviewed, we found the strongest evidence for benefits in both mental and behavioral health and caregiver-child relationship outcomes for two interventions directed at foster parents: Attachment and Biobehavioral Catch-up, Keeping Foster and Kinship Parents Trained and Supported.

Several parenting intervention trials conducted with maltreating parents assessed only caregiver-child relationship outcomes. Among these studies, we found the strongest evidence for two approaches. The first, a variant of Child-Parent Psychotherapy developed by Cicchetti and colleagues,[79] was a high-intensity home-based intervention focused on improving the attachment relationship between older infants/toddlers and their mothers. The second intervention, Project Support, was another high-intensity, home-based approach focusing on psychoeducational parent training as well as instrumental and social support to mothers of children ages 3 to 8 years.[94]

For safety outcomes (i.e., reducing maltreatment recurrence), our review found the strongest evidence for Parent-Child Interaction Therapy adapted for the child welfare context, which included a 6-week motivational intervention orientation.[90, 91] As noted earlier, the researchers compared the Parent-Child Interaction Therapy model with an enhanced version that provided families with supplemental services and found no difference in safety outcomes; both were equally effective.[91] The researchers also analyzed the relative contribution of the motivational intervention and found that the combination of Parent-Child Interaction Therapy and the motivational intervention was more effective than other permutations (e.g., Parent-Child Interaction Therapy plus a standard orientation or the standard parenting program plus the motivational intervention orientation).[90]

Regarding the child welfare outcomes of placement stability and permanency (e.g., reunification; adoption by the biological parent or another relative) for children in foster care, Multidimensional Treatment Foster Care for Preschoolers[124, 127, 128] and Keeping Foster and Kinship Parents Trained and Supported[85] were the only two interventions in this review that targeted these outcomes. Both trials had positive outcomes for permanency but not placement stability.[85, 124, 127, 128] As noted, Keeping Foster and Kinship Parents Trained and Supported is based on the foster parent training program in the Multidimensional Treatment Foster Care model. The evidence for Keeping Foster and Kinship Parents Trained and Supported is strengthened by the large sample size. However, more research is needed to confirm whether this less intensive foster parent training program is as efficacious as the higher intensity model, Multidimensional Treatment Foster Care for Preschoolers, in promoting positive permanency outcomes for foster children.

Among the trauma-focused treatments, the strongest evidence was for the low-to-medium intensity Trauma-Focused Cognitive Behavioral Therapy in promoting both child mental and behavioral health and caregiver-child relationship outcomes in children exposed to sexual abuse.[101, 112] The evidence for the Fostering Healthy Futures intervention, a high-intensity child-directed treatment for maltreated children (maltreatment type not specified) ages 9 to 11 years in foster care, also stood out for the long-term benefits (6 months after the intervention ended) in reducing trauma symptoms.[106] Similarly, a high-intensity individual psychotherapy treatment for sexually abused girls found long-term improvements in PTSD symptoms approximately 15 months after the intervention ended.[110]

The evidence for the two enhanced foster care interventions we reviewed, Multidimentional Treatment Foster Care for Preschools[122, 123, 125, 126] and the Bucharest Early Intervention Project,[114-116, 118-120] spanned three of our four child well-being outcomes, reporting significant improvements compared with usual care in mental and behavioral health, caregiver-child relationship, and

developmental outcomes. As noted above, Multidimensional Treatment Foster Care for Preschoolers also resulted in positive permanency outcomes.[124, 127] Each of these high-intensity approaches provided individualized and multimodal interventions over relatively lengthy period of time that were directed at both the child and the foster parent (and, in the case of Multidimensional Treatment Foster Care for Preschoolers, other relevant caregivers). Another enhanced foster care intervention, the New Orleans intervention also found significant improvement in safety for the child.[121]

Given the paucity of research and myriad methodological challenges faced by researchers in this field (described below in **Limitations of the Evidence Base**), incorporating strong ongoing evaluation into existing programs and coordinating evaluation efforts across programs within communities may offer some promise for building the evidence base. Such an approach would represent a paradigm shift in the clinical field on multiple levels. Clinicians typically have little time to collect data systematically. Program record databases typically collect the minimal information pertinent to billing or other administrative needs and not necessarily case outcome data. Field agencies must compete for limited dollars to support their programs, creating competition between programs offering different treatment models in a context of dwindling treatment dollars and a disincentive to evaluate the comparative benefits of these 'competing' approaches. To conduct rigorous research it is necessary to employ randomization or quasi-randomization procedures, which raises thorny ethical issues for clinicians and other stakeholders serving children exposed to maltreatment and their families. Thus, forging a new direction in clinical research will necessitate considerable training, resources, collaboration across the public and private sectors, and the support of policymakers in shaping a clinical context that is supportive of rigorous ongoing program evaluations.

Limitations of the Comparative Effectiveness Review Process

This review has focused on clinical treatment for children whose need for care is either defined by their exposure to maltreatment or their clinical presentation. This focus likely resulted in a very heterogeneous population, with widely varying underlying need in the population. Although we minimized heterogeneity by excluding studies with mixed populations of at risk and exposed children, we were not able to control for the inherent clinical heterogeneity in the population of children in foster care. Approximately 20 percent of children in foster care are removed from the home for reasons that may not be consistently classified as abuse or neglect due to variation in definitional criteria for maltreatment (e.g., prenatal substance exposure, parental substance abuse, children in need of services or at high risk for maltreatment).[49]

Our exclusions, described in the methods chapter, served to focus the review and control for sources of heterogeneity. Nonetheless, these exclusions necessarily limited the scope of this review. We describe important limitations below.

We excluded studies with "mixed" populations (i.e., with both maltreated children/maltreating families and children/families 'at risk' of maltreatment), yet we discovered in the course of the review that applying this exclusion criterion was complicated by considerable variability in the clarity and specificity with which authors defined their study populations. Additionally, likely due to the small sample sizes characteristic of the literature in this area, we did not identify any eligible studies that stratified the results by maltreatment-exposure status. Thus, severable notable studies in the field were not included in this review, including a recent RCT examining the effectiveness of Parent-Child Interaction Therapy with

parents "referred from child protection authorities, identified as suspects of maltreatment by other professionals, or self-identified because of significant child behavior problems and stress" was excluded for mixed population.

We elected to exclude intervention studies that focused on primary or secondary prevention. In other words, we excluded studies where maltreatment was not indicated or substantiated or the description of the study population was too vague to make a determination. As noted earlier, we also excluded adolescents older than 14 years in recognition of how maltreatment and its sequelae evolve across the development spectrum.[169] We recognize that the decision to exclude interventions focused on adolescent populations meant excluding a body of evidence and many widely used or well-respected intervention approaches such as Multidimensional Treatment Foster Care,[170] Multisystemic Therapy for Child Abuse and Neglect,[171, 172] and the Sanctuary Model®[173, 174] However, despite this exclusion, the review encompasses a broad spectrum of development and interventions, including infancy, early childhood, school age, and early adolescence.

In the interest of focus and comparability, service-delivery models likewise were excluded including intensive family preservation or reunification service models such as Homebuilders®, solution-focused/-based casework (an approach to assessment, case planning, and case management), differential response (i.e., an alternative assessment model offered by child protective services agencies to families reported for child abuse and neglect depending on the severity of the allegation), and routine preservice foster parent training programs.

As noted previously, interventions specifically targeting children exposed to domestic violence were not included in this review. However we recognize that many jurisdictions classify exposure to domestic violence as a form of maltreatment and a large proportion of children involved with the child welfare system for abuse or neglect have also been exposed to domestic violence. Thus, the population for this review was de facto likely heterogeneous with respect to exposure to domestic violence, despite our exclusion criterion.

A further limitation of our approach has to do with the systematic review process itself. Our review required that included studies be of at least medium or low risk of bias and include comparators, and pairwise comparisons, to be able to make statements regarding effectiveness. One possible tradeoff of this focus favoring scientific rigor involves potential omission of interventions that may be in widespread use and that may reflect usual practice or clinical expertise while lacking sufficient empirical support.

Limitations of the Evidence Base

This comparative effectiveness review applies stringent evidentiary standards to the still relatively new field of evidence-based mental health treatment for maltreated children whose backgrounds of victimization, ambivalence toward maltreating parents or caregivers, complex symptoms and functional impairments, and disruptions in care associated with child protective services involvement present extreme challenges to traditional research.

The very definition of maltreatment itself presents a challenge to researchers. Many of the included studies define maltreatment in terms of a child's involvement with child protective services—a criterion affected by state-level differences in how maltreatment is defined. Researchers must then navigate the additional challenges of treatment engagement and retention, socioeconomic hardship, preexisting child or parent mental health problems, residential disruption and transience, and inconsistent reporting in administrative (e.g., child welfare; court) records of the nature of maltreatment events in developing and testing interventions.

Limitations in the evidence base on both comparisons and measures of effectiveness substantially hindered our efforts to conduct a comparative effectiveness review of maltreatment interventions. The evidence base lacks head-to-head comparisons that would permit true comparative effectiveness evaluation. Another issue we identified in the literature on maltreatment interventions is the problem of identifying and using a control group of "usual care." Many studies use the control group of "usual care." No standard for this type of control group exists in the field. Study authors may not, in fact, know what types of interventions their control subjects are actually receiving. "Control" treatments vary within and across studies, based on the needs of participants.

Another limitation of the current evidence base is that developers change interventions over the years in response to their understanding of its effectiveness. Although adaptation of interventions likely improves feasibility of implementation or adherence, these changes present challenges to comparisons of the same intervention across settings and time. Another challenge associated with adaptations of interventions has to do with whether the specific components included or excluded in these revised interventions change the fundamental nature of the original intervention. For example, Trauma-Focused Cognitive-Behavioral Therapy as a group intervention retains the elements of the original (and validated) Trauma-Focused Cognitive Behavioral Therapy, with the exception of the trauma narrative. For sound reasons, the group intervention avoids subjecting other children to the potential distress arising from exposure to other children's narratives about being sexually abused. From a comparative perspective, the group adaptation omits what has been posited as an essential active ingredient of TF-CBT, raising questions about when adaptations continue or cease to reflect the original treatment model.

Another challenging aspect of this review was identifying the theoretical orientation or the key components of the interventions. Some interventions apply facets of multiple orientations in an eclectic manner; others offer more integration while still reflecting a multi-theory perspective. For example, Parent-Child Interaction Therapy is described as both behavioral and attachment-focused. Behavioral aspects may seem more prominent, but closer examination reveals a thorough emphasis on the quality of the relationship between child and parent. Finally, many studies do not fully describe the key components of their interventions, obscuring conclusions about a primary theoretical orientation or the relationship of intervention components to expected outcomes. Even in instances of compelling results, the lack of specificity hinders translation of research findings into practice.

A large number of studies did not meet our criteria for risk of attrition bias.[175] For many studies excluded from this review due to a high risk of bias, the attrition rate was higher than our threshold of 30 percent or less or a differential attrition rate for the active treatment versus control groups of greater than 15 percent. Further, we excluded several trials that followed participants over a longer period (e.g., greater than 1 year) because too many of the participants were missing from the analysis of follow-up data.[176-181] Thus, a major challenge for the field is to devise new ways to keep participants and their families engaged in intervention studies so that the research accurately portrays the effectiveness of the interventions being studied. This is an area that has remained elusive for decades due to the numerous barriers experienced by vulnerable families. For example, intervention time not only comprises time spent in sessions but also time commitments that are prerequisites to participation, such as travel, changes to work schedules, and alternate childcare for siblings. Juggling the responsibilities of complying with service/safety plans and other stressful life events create additional challenges to treatment

engagement and retention. Hence, what may appear to be resistance to treatment may be more reflective of the obstacles to a sustained course of treatment. These same obstacles also create serious barriers to participation in research.

To make the body of literature we reviewed more applicable to maltreated children, we eliminated studies focusing on children at risk of maltreatment from our review. A major challenge in limiting our review to children exposed to maltreatment was that studies were often vague about inclusion criteria. It was often difficult to ascertain the mixed nature of the population in terms of at risk and exposed children. We did not encounter any study that stratified findings by child at risk or exposed status. Additionally, many studies did not provide specific information about the number, timing, or chronicity of children's maltreatment (or other traumatic) exposures. This is likely attributable to the difficulty accessing this information from the family or child protective services. Future intervention research would benefit from using uniform definitions of child maltreatment and severity ratings, as well as measures of children's traumatic responses to their maltreatment experiences.

The evidence base currently lacks implementation research. The increasing availability of validated treatments does not assure their transportability to general community settings, accessibility and utilization by maltreating families, or their effective use by implementing clinicians. Replication of findings requires that developers of interventions disseminate both their treatment manuals and train others outside the controlled environment of a specialty or university-based clinic. Another gap in the current literature with implications for widespread implementation is the issue of "dose" or how much of an intervention is needed to effect change. None of the included studies addressed this issue. To address the twin challenges of a stressed population and tight reimbursement guidelines, successful interventions must be both cost effective and brief. An example of two interventions that target the relationship between the maltreated infant/toddler and the caregiver illustrates this point. Attachment and Biobehavioral Catch-up and Child Parent Psychotherapy are both attachment focused and use the relationship between the child and caregiver as the main agent of change. Attachment and Biobehavioral Catch-up is only 10 sessions whereas Child-Parent Psychotherapy is approximately 50 sessions delivered over the course of a year. There is no head-to-head research as of yet to test if the less-intensive attachment-focused treatment is as effective as the more intensive model.

Many of the studies that were reviewed but not included did not employ well-established assessment measures. We required that outcome measures offer more than face validity: we also looked for evidence of construct or predictive validity. When such evidence was not available, we excluded those particular outcomes. As a result, our review does not include all data from included studies.

Another limitation we encountered was when studies did not report findings for pairwise comparisons, as these one-to-one comparisons were needed for the comparative effectiveness review. Performing additional calculations to extricate one-to-one comparisons was beyond the scope of this review.[102, 103] In addition, we seldom found data stratified by subgroups in the literature. This type of stratification would go a long way to answering the question "What works for whom?" Specifically, it would be informative to see data broken down by relevant age groups (e.g., infants and toddlers, preschoolers, elementary-age children, adolescents). Many studies in this literature included children from preschool to adolescence, without providing results for subgroups. As a result, these studies did not address or control for developmental differences among different age groups. Similarly, studies with mixed maltreatment populations did not generally stratify results by maltreatment status. One reason for lack of stratification

could be the generally small sample sizes in these studies. Future research that seeks to advance the evidence base must address and adequately power for anticipated subgroup differences.

Research Gaps

Methodological Considerations

Future studies with problems related to attrition would benefit from intention to treat (ITT) analysis. ITT analysis accounts for the bias from differential attrition between study groups and helps to avoid the error of incorrectly attributing effectiveness to an intervention when findings may reflect underlying differences in the final study groups .

ITT analysis may not be helpful in the case of extremely high and differential attrition, a persistent concern for the maltreatment studies we reviewed. Future studies will benefit from explicit strategies to reduce overall attrition rates, such as the motivational intervention orientation supplement to Parent-Child Interactional Therapy.[90-92]

A key limitation across studies is the lack of consistency in the use of common and validated measures for identifying symptomatology. Greater coalescence around such measures will help future reviews generalize findings across studies and settings; more generally such a move will create greater consensus in the field around effective and ineffective interventions by introducing common metrics.

Studies also lack attention to differences in cognitive, social-emotional and language skills across developmental age groups. As a result, we found limited evidence that informs the question of the relative benefits of various interventions for different age subgroups The field will benefit from routinely planned subgroup analyses that account for other important differences at baseline (e.g., the presence of traumatic stress and other symptoms, age, race/ethnicity type and severity of maltreatment, other family characteristics).

Researchers should review and utilize the CONSORT statement to ensure transparent reporting of trials.[182] Trials in this field do not typically blind participants or providers, but future studies should routinely blind outcome assessors to reduce the risk of detection bias.

Studies either lack or fail to report power analyses. Because the evidence base features many small studies, this omission hampered our ability to assess whether the absence of effect reflected lack of effectiveness or insufficient statistical power. The vulnerability of the population increases the urgency of the need to identify effective interventions (and weed out ineffective interventions). Adequately powered studies, coupled with clear statements of statistical power calculations, can help to redirect resources and attention to the most promising interventions.

Other concerns around statistical analysis and inference relate to the frequent failure to control for multiple comparisons and the frequent reliance on post-hoc analyses. Failure to account for multiple comparisons may result in spurious findings of effectiveness. Similarly, undue reliance on post-hoc analyses is a form of data dredging that may turn up statistically significant results by chance. These types of analysis are useful to generate hypotheses and explain results but cannot take the place of previously planned analyses. Future studies should account for multiple comparisons and clearly state planned statistical analyses. In complex multifactorial interventions, these planned statistical analyses should include the assessment of mediators and moderators.

Substantive Gaps

Our review intended to evaluate the comparative effectiveness of interventions for children experiencing maltreatment, but two major barriers arose in meeting this goal: first, studies infrequently undertook head-to-head comparisons with named active treatments and second, studies that used a usual care comparator varied widely in the definition and content of usual care. Our systematic review found several instances where comparators appeared to be derived from commonly used interventions that included variations specific to the setting or the study. Such variations, particularly when unlabeled and untested for efficacy, make it difficult to arrive at conclusions regarding comparative effectiveness. These limitations suggest three major substantive gaps. First, the field needs more evaluations of head-to-head comparisons of established interventions. Second, these new studies should clearly indicate the provenance of the comparator intervention and maintain fidelity to the extent possible. Third, future studies that alter established interventions should clearly explain the rationale for the change and test the expected active ingredient for effectiveness.

Another important gap beyond the measurement of fidelity has to do with the quality of training and the dissemination and spread of effective practices. These studies will benefit from replication and testing by independent researchers.

Treatment delivered with high levels of fidelity can be expected to provide maximal benefit, yet effective treatment that is not translated into general practice benefits only a select few. To ensure applicability to real-world settings, future studies should test the effectiveness of lower-intensity interventions to account for multiple stressors that families face. Another practical consideration for the development and testing of real-world interventions relates to the costs of service delivery (e.g., provider training, clinical effort and practice infrastructure), service receipt (e.g., family transportation, childcare, healthcare deductibles and coinsurance), and potential revenue (e.g., Medicaid, private insurance, public and private funders). With most mental health care based on service reimbursement, future research is clearly needed on the interplay of treatment model and structure, service definitions, utilization management, treatment authorization, and claims submission and authorization.

Other areas where research is urgently needed is in longer-term outcomes, for example, duration of symptom remission or functional improvement, generalization of outcomes from one setting to another, outcome variability according to clinically heterogeneous subgroups, retraumatization, and the extent to which children involved in the child protective system achieve “permanent” placement. Permanency, in particular, may reflect study constraints rather than the desired outcome of a constant, stable relationship with a parent or caregiver who comes to love and accept responsibility for a maltreated child. So-called “permanency” outcomes instead represent placement changes and disruptions that occur within the timeframe of a particular study.

As noted earlier, treatment that occurs in response to the experience of maltreatment begins from a different perspective than treatment in response to clinical symptoms and impairment. The former involves recognition of the potential traumatogenic nature of child maltreatment and, perhaps, gives less accord to children who are resilient and avoid the usually troublesome sequelae of abuse and neglect. As in the instance of physical disorders, the latter reflects the medical emphasis on intervention as a method to reduce disturbance, symptoms, and impairment. Here the goal is one of amelioration. The oft-referenced Adverse Childhood Experiences study has expanded recognition of the distal effects of maltreatment, including serious and chronic medical illness and premature mortality. While a seminal study of the sequelae of maltreatment,

the study design was retrospective. Other studies are longitudinal yet remain descriptive. The development of and confidence in effective psychosocial treatment will increase exponentially as studies are able to address these and similar distal outcomes. When confidence in the effectiveness of a certain treatment is warranted, knowledge is still lacking as to the durability of outcomes under a range of conditions.

Conclusions

There is considerable heterogeneity in the evidence-base for interventions for the highly vulnerable population of children exposed to maltreatment. The heterogeneity of the evidence pertains to the interventions tested, population characteristics, and measurement of outcomes. For all intervention types, evidence was predominantly based on one trial, and head-to-head studies were scarce. Consequently, the body of evidence for interventions that addressed child well-being in maltreated children provided either low strength of evidence or was insufficient to draw a conclusion. Three interventions were evaluated in two or more trials that supported their comparative efficacy: Attachment and Biobehavioral Catch-up,[74-77] a parenting intervention directed at foster parents caring for infants and young children; Trauma-Focused Cognitive Behavioral Therapy for sexually-abused children;[101, 112] and Parent-Child Interaction Therapy, adapted for physically abusive parents and combined with a motivational intervention.[90, 91] Several interventions resulted in superior outcomes in three or more child well-being and/or child welfare domains: Multidimensional Treatment Foster Care for Preschoolers,[122-128, 148] the Bucharest Early Intervention Project,[114-116, 118-120] and Keeping Foster Parents Trained and Supported.[84, 85]

When comparing interventions by theoretical orientation, the evidence supported attachment-informed and cognitive behavioral approaches. Subgroup analyses showed the strongest evidence for the comparative efficacy of the following interventions: the Bucharest Early Intervention Project for neglect;[114-116, 118-120] Parent-Child Interaction Therapy for physical abuse;[90, 91] Trauma-Focused Cognitive Behavioral Therapy for sexual abuse and trauma symptoms;[101, 112] a psychoanalytically-informed individual psychotherapy approach specifically designed for sexually-abused girls;105 the New Orleans Intervention for maltreating parents;[121] and Multidimensional Treatment Foster Care for Preschoolers for foster parents.[122-128, 148] Despite the paucity of studies on treatment engagement and retention in the literature, we found moderate strength of evidence for a motivational intervention in improving parent engagement and retention in parenting services.[90, 92]

In sum, this review illuminates a number of promising approaching to improving child well-being and child welfare outcomes for abused and neglected children. However, our central finding is the urgent need to expand the evidence base to guide clinicians and policymakers in meeting the needs of this extremely vulnerable population. Given the paucity of research and myriad methodological challenges faced by researchers in this field, incorporating strong ongoing evaluation into existing programs and coordinating evaluation efforts across programs within communities may offer some promise for building the evidence base

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