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# The Effectiveness of Parenting Skills Training Programs for Parents with Histories of Sexual Trauma, Serious Mental Illness, or Military Service

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The findings and conclusions in this document are those of the author(s) who are responsible for its contents and do not necessarily represent the views of the Department of Veterans Affairs or the United States government. Therefore, no statement in this article should be construed as an official position of the Department of Veterans Affairs. No investigators have any affiliations or financial involvement (eg, employment, consultancies, honoraria, stock ownership or options, expert testimony, grants or patents received or pending, or royalties) that conflict with material presented in the report.

## PREFACE

The VA Evidence Synthesis Program (ESP) was established in 2007 to provide timely and accurate syntheses of targeted health care topics of importance to clinicians, managers, and policymakers as they work to improve the health and health care of Veterans. These reports help:

- Develop clinical policies informed by evidence;
- Implement effective services to improve patient outcomes and to support VA clinical practice guidelines and performance measures; and
- Set the direction for future research to address gaps in clinical knowledge.

The program comprises 4 ESP Centers across the US and a Coordinating Center located in Portland, Oregon. Center Directors are VA clinicians and recognized leaders in the field of evidence synthesis with close ties to the AHRQ Evidence-based Practice Center Program. The Coordinating Center was created to manage program operations, ensure methodological consistency and quality of products, interface with stakeholders, and address urgent evidence needs. To ensure responsiveness to the needs of decision-makers, the program is governed by a Steering Committee composed of health system leadership and researchers. The program solicits nominations for review topics several times a year via the [program website](#).

The present report was developed in response to a request from VHA Office of Mental Health and Suicide Prevention. The scope was further developed with input from Operational Partners (below), the ESP Coordinating Center, the review team, and the technical expert panel (TEP). The ESP consulted several technical and content experts in designing the research questions and review methodology. In seeking broad expertise and perspectives, divergent and conflicting opinions are common and perceived as healthy scientific discourse that results in a thoughtful, relevant systematic review. Ultimately, however, research questions, design, methodologic approaches, and/or conclusions of the review may not necessarily represent the views of individual technical and content experts.

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Operational partners are system-level stakeholders who help ensure relevance of the review topic to the VA, contribute to the development of and approve final project scope and timeframe for completion, provide feedback on the draft report, and provide consultation on strategies for dissemination of the report to the field and relevant groups.

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## ABBREVIATIONS TABLE

ADAPT	After Deployment, Adaptive Parenting Tools
BPD	Borderline personality disorder
COE	Certainty of evidence
ESP	Evidence Synthesis Program
FOCUS-EC	Families OverComing Stress-Early Childhood
GRADE	Grading of Recommendations Assessment, Development, and Evaluation
KQ	Key question
MDD	Major depressive disorder
OECD	Organization for Economic Co-operation and Development
OEF	Operation Enduring Freedom
OIF	Operation Iraqi Freedom
OND	Operation New Dawn
OPPT	Online Parenting Pro-Tips
PMTO	Parent Management Training–Oregon Model
PSI	Parenting Stress Index
PTSD	Posttraumatic stress disorder
RCT	Randomized controlled trial
ROB	Risk of bias
ROBINS-I	Risk of Bias in Nonrandomized Studies of Interventions
SMI	Serious mental illness
SPMI	Serious and persistent mental illness
STAIR	Skills Training in Affective and Interpersonal Regulation
VA	Veterans Affairs
VHA	Veterans Health Administration

## EXECUTIVE SUMMARY

### Key Findings

- This review identified 14 unique studies on parenting skills training interventions: 9 focused on parents with a history of serious mental illness (SMI); 5 focused on military-connected families, of which only 1 was conducted exclusively among Veterans. No studies meeting eligibility criteria were conducted among parents with a history of sexual trauma in adulthood or posttraumatic stress disorder (PTSD).
- Studies tested 5 major intervention types (*ie*, multi-family groups, individual family therapy, home visitation with live coaching, chat-based virtual groups, and self-directed programs) with 57% being delivered in-person.
- Most included studies took a family-system perspective and involved more than 1 member of the family (*eg*, spouse/co-parent, child); 57% ( $N = 8$  studies) directly involved children in the deployment of the behavioral parenting program.
- Of the 9 studies (904 families) that assessed the parenting among populations with SMI, most were conducted among parents with a history of major depressive disorder. The majority (69%) of parent-centered outcomes reported statistically significant effects of behavioral parenting programs among families with at least 1 parent with SMI. A smaller percentage of outcomes were significant for the prioritized family-centered (40%) and child-centered outcomes (57%). Effects on these outcomes were generally modest.
- Among parents with a history of military service (5 studies encompassing 3,268 families), the overall trend was toward positive changes in key parent, family, and child outcomes, though not all were significant. Effect sizes were generally modest.
- Most of the studies (71% ) reporting on uptake of parenting skills demonstrated significant improvements in parenting skills. Common features of effective programs were in-person delivery and group-based formats. Adherence was high for the interventions delivered in person. Use of a military-connected facilitator led to greater program participation in 1 study.
- Limitations of the evidence include study design weaknesses, which contributed to low or very low certainty of evidence ratings for most outcomes. Further, we observed no clear pattern of effectiveness by intervention type; outcomes were reported infrequently across the included studies.

## INTRODUCTION

Evidence-based parenting programs have demonstrated effectiveness for increasing parenting confidence, minimizing family stress, and improving parent-child relationships. Yet the majority of evidence-based behavioral parenting programs have centered on the child's presentation, including behavioral or emotion challenges, rather than on the characteristics of parents. It is unclear whether parenting interventions centered on children's characteristics would be effective for parents with unique needs and experiences. While parenting can be challenging for any person, parents who have experienced significant stress from their own traumatic exposures or health conditions may face even greater obstacles in their family systems. Among Veterans, important sources of excess family stress are a parental history of sexual trauma and serious mental illness. Providing interventions to enhance parenting practices and support parents who have experienced, or are at high risk for experiencing, excess family stress can be a critical tool for improving family functioning.

Given that military Veterans are more likely to experience mental health and trauma stressors, the Veteran population served by the Veterans Health Administration (VHA) may benefit from parenting skills training programs. Yet, it is unknown if parenting programs are effective among populations that have family stressors like those of the Veteran population. The VHA has piloted Parenting Skills Training in Affective and Interpersonal Regulation (Parenting STAIR), a program for which there are no published evaluations among Veterans. The current systematic review aimed to (1) understand whether, and in what ways, parenting skills training programs can effectively support parents who are at increased risk for stress due to parental history of sexual trauma in adulthood and/or serious mental illness, as well as parents with histories of military service, and (2) clarify characteristics of effective parenting skills training programs.

## METHODS

### Data Sources and Searches

We conducted a primary search from inception to September 6, 2022, in MEDLINE (via Ovid), Embase (via Elsevier), PsycINFO (via Ovid), and CINAHL (via EBSCO). We used database-specific controlled vocabulary as well as relevant keywords to search titles and abstracts.

### Study Selection

In brief, the major eligibility criteria were parents with histories of sexual trauma in adulthood, serious mental illness (encompassing PTSD and major depressive disorder), or military service. Interventions were focused on the acquisition of parenting skills or the prevention of adverse child and family outcomes through manualized/protocolized approaches. Eligible studies evaluated parent outcomes (*ie*, parental emotion regulation, positive parenting skills, parenting knowledge, parenting self-efficacy, parental stress), family outcomes (*eg*, family conflict, family functioning), or child outcomes (*eg*, disruptive behaviors).

All citations that were classified for possible inclusion based on title and abstract by 2 investigators underwent full-text review. Studies were excluded if both investigators agreed on exclusion. All articles reviewed at full-text were evaluated independently by 2 investigators, and all articles meeting eligibility criteria at full-text review were included for data abstraction. Disagreement was resolved via group consensus or by a senior investigator.

## Data Abstraction and Assessment

Data elements included descriptors of the study populations, quality elements, intervention, and outcome details. Study risk of bias (ROB) was assessed by the revised Cochrane risk of bias for randomized trials and cluster-randomized trials (RoB2) and the Risk of Bias in Nonrandomized Studies of Interventions (ROBINS-I) for nonrandomized studies. Quality assessment was completed in duplicate by 2 investigators. Disagreements were resolved by consensus between those 2 investigators or, as needed, with arbitration by a third.

## Synthesis

We summarized the key study characteristics of the included studies: study design, participant demographics, details of the parenting programs, outcomes measures, and timing of outcomes assessment. We considered the feasibility of completing a quantitative synthesis (*ie*, meta-analysis) to estimate summary effects given the volume of relevant literature, conceptual homogeneity of the studies, and completeness of results reporting. Due to low volume of literature and heterogeneity of intervention types, we conducted a single meta-analysis. For outcome and intervention categories for which meta-analysis was not feasible, we analyzed the data narratively by focusing on identifying patterns in efficacy across included studies.

The certainty of evidence was assessed using the approach described by the Grading of Recommendations Assessment, Development, and Evaluation working group. These domains were considered qualitatively, and a summary rating was assigned after discussion between 2 investigators as high, moderate, low, or very low certainty of evidence.

## RESULTS

### Results of Literature Search

We identified and screened the titles and abstracts of 5,394 articles after deduplication between databases. Of these, 110 were advanced to be screened at the full-text stage. We retained 28 articles encompassing 14 unique studies. There were 7 randomized controlled trials (RCTs), 3 controlled before-after studies, 2 repeated measure studies, and 2 uncontrolled before-after studies. Eight included studies were conducted in North America (USA, Canada), 5 took place in Europe (UK, Germany, Netherlands), and 1 was conducted on military bases in the USA and Japan.

### Summary of Results for Key Questions

#### *KQ1: Parents with a History of Sexual Trauma*

We identified no studies that met eligibility criteria for KQ1.

#### *KQ2: Parents with a History of Serious Mental Illness (SMI)*

In total, 9 studies ( $N = 904$  families) assessed the outcomes of interest among populations with SMI. Most of the studies were conducted in samples of fewer than 100 families, with 3 being conducted in studies of fewer than 50 participants. Study designs include the following: 5 RCTs (3 with high ROB), 2 controlled before-after designs (moderate ROB), 1 repeated measures design (serious ROB), and 1 uncontrolled before-after study (moderate ROB). Studies recruited parents with the following conditions: MDD (3 studies,  $N = 445$ ), schizophrenia spectrum

disorder (2 studies,  $N = 141$  parents), bipolar disorder (3 studies,  $N = 230$ ), and mixed population of SMI conditions (1 study,  $N = 48$  parents). Parenting programs used 4 main delivery methods: in-person multi-family groups (4 studies), in-person home visits with a self-directed workbook (1 study), online chat-based group (1 study), and web-based self-directed modules (3 studies). Only 5 studies cited an evidence-based parenting program as the basis for their intervention approach. Most studies ( $N = 6$ ) did not directly involve the child as part of the parenting skills training program.

#### *Parent outcomes*

While the overall trend was toward positive improvements in key parent outcomes, not all were significant. Most studies (5 out of 7) reported a significant impact of parenting skills training interventions on positive parenting skills. Yet a meta-analysis of web-based self-directed programs did not yield significant results (3 studies,  $N = 168$ ) among parents with bipolar disorder or schizophrenia spectrum disorder. Most studies measuring parental self-efficacy (3 out of 5 studies) also reported significant increases in parents' sense of competency in parenting. Only 1 study assessed stress related to parenting; this study also reported significant improvements in parental stress. No identified studies assessed the impact of parenting skills training programs among parents with histories of SMI on the outcomes of parental emotion regulation and parenting knowledge.

#### *Family outcomes*

In total, 5 of the 9 studies assessed key family-level outcomes: 5 measured family functioning and 1 measured family conflict. The studies show mixed results in family functioning outcomes. While all studies yielded improvements in various measures of family functioning, only 2 of the 5 studies reported significant improvements. Both studies were in-person multi-family parenting groups.

#### *Child outcomes*

Child behaviors were assessed in 7 of the 9 studies identified and show mixed results. In total, 4 of the 7 studies reported significant improvements. The positive studies used 3 different interventions: in-person family counseling plus multi-family group sessions with parallel but separate group sessions for children (1 study), a home-based program (1 study), and a web-based self-directed program (2 studies). All 4 studies of the parenting skills programs that reported significant impacts on child behaviors were adapted from evidence-based parenting programs.

### ***KQ3: Parents with a History of Military Service***

In total, 5 studies assessed the impact of parent behavioral skills training interventions among families with a history of military service. The median study size was 200 families (range: 41-2,615). Most included studies were nonrandomized designs ( $N = 3$ ), and 1 study had a low ROB rating. Most studies were conducted among families with at least 1 active-duty parent ( $N = 3$  studies encompassing 3,151 families). Parenting programs used 3 main delivery methods: individual family therapy (2 studies), multi-family groups (2 studies), and virtual home visits with live coaching (1 study). All but 1 intervention directly involved the child as part of the parenting skills training program. Most studies ( $N = 3$ ) cited an evidence-based parenting program as the basis for their intervention approach.

*Parent outcomes*

All 5 studies assessed at least one of the 5 parenting outcomes of interest: 1 assessed parenting skills, 2 parental stress, and 2 parental emotion regulation. The overall trend was toward positive improvements in key parent outcomes, though not all were significant. The 1 study that assessed parenting skills demonstrated moderately sized, significant improvements. All other parenting outcome results were mixed either between studies (*ie*, 2 parental stress studies and only 1 with significant results) or within studies (*ie*, emotion regulation improved for mothers but not for fathers; positive aspects of emotion regulation improved but negative aspects did not). No studies assessed the impact of parenting skills programs among families with at least 1 parent with a record of military service on the outcomes of self-efficacy for parenting and parenting knowledge.

*Family outcomes*

Three studies assessed the outcome of family functioning; no studies assessed family conflict outcomes. Studies used 2 different intervention modalities/delivery methods: individual family counseling (1 virtual and 1 in-person) and a virtual home visit model with live parent coaching. Two nonrandomized designs reported significant impacts on family function, while the low ROB RCT reported significant improvements for mothers only.

*Child outcomes*

Child behaviors were assessed in 3 of the 5 studies identified. All 3 studies that measured the impact of behavioral parenting skills training on child behaviors reported significant improvements in some aspects of child behaviors. Two studies had serious ROB considerations.

***KQ4: Intervention Characteristics of Effective Parenting Programs***

In total, 8 of 14 studies reported on the impact of parenting training programs on the uptake of parenting skills. Of these 8 programs, 71% ( $N = 6$ ) demonstrated significant improvements in parenting skills. The majority of these 8 studies were conducted among families with a parental history of serious mental illness ( $N = 5$ ). Half of the identified effective programs were delivered in person; group-based formats were the most common mode of intervention delivery. Only 2 programs involved direct interactions with the child during a portion of the parenting program. The most common areas covered in the parenting programs were discipline and behavior management strategies (5 studies) and fostering positive interactions with the child(ren) (5 studies). Most programs incorporated homework assignments to reinforce parenting skills.

Recruitment techniques were specific to the population of interest and designed to capture individuals likely to engage in the study intervention. Adherence was high for the interventions delivered in person, with both group-based interventions having participation rates of over 70%. Of note, use of a military-connected facilitator led to greater program participation (73.25% vs 59.78% sessions) in 1 study. In studies that assessed participant satisfaction, ratings were all very favorable.

## DISCUSSION

### Key Findings and Strength of Evidence

Among the studies included here, the overall trend was toward positive improvements in key parent, family, and child outcomes, though not all were statistically significant. Effect sizes were generally modest. We observed no clear pattern of outcome effectiveness across intervention types, but these outcomes were reported infrequently across studies. There was high heterogeneity of included studies based on intervention, dose, populations, and measurements used. Yet, among the 6 studies that reported significant improvements in parenting skills, most were conducted via group-based formats. The most common areas covered in these 6 effective parenting programs were discipline and behavior management strategies and fostering positive interactions with the child(ren). Most programs incorporated homework assignments to reinforce positive parenting skills. In studies that assessed participant satisfaction, ratings were all favorable. Across nearly all outcomes, certainty of evidence ratings ranged from low to very low. Ratings were commonly downgraded for ROB concerns or if the assessed interventions did not align with elements that VA operational partners indicated would enhance feasibility of implementation in the VA health care environment (eg, home-based components, direct involvement of child) or were conducted in populations judged to be less applicable to Veterans.

### Applicability

Of the 14 included studies, 5 were conducted among military-connected families, which makes them more applicable to Veteran populations than studies in the general population of civilians. Yet only 1 identified study was conducted exclusively among Veterans. The other 9 were conducted in populations with SMI. For our review, we defined SMI broadly, including studies that were conducted in populations selected for depression and PTSD, to increase applicability to the Veteran population. While we did not identify any studies conducted only among parents with PTSD, the majority of parents in the included studies for KQ2 were selected based on histories of major depressive disorder, a highly prevalent mental health condition among Veterans. We did not identify any eligible studies that were designed for parents with a history of sexual trauma in adulthood. Taken as a whole, findings presented here likely have applicability to Veteran populations seeking care through the VHA.

### Future Research

This comprehensive review of the literature identified several gaps in the current evidence that warrant future investigation. First, there need to be more high-quality studies of parenting skills training conducted among populations with histories of sexual trauma and PTSD and among Veterans. This review identified only 1 study conducted exclusively among Veterans and none exclusively conducted among people with histories of sexual trauma in adulthood. There is also a dearth of interventions designed to address the compromised parenting associated with parental PTSD. No studies met eligibility for our review; we identified only 2 recent publications exploring novel trauma-informed interventions for parents with PTSD. Also, peer-facilitated programs show promise in enhancing engagement in parenting programs; utilizing peers is an area in which the VA is already innovating through the use of peer specialists in the VHA mental health settings. The field would also benefit from studies that directly test different modes (group vs individual, in-person vs videoconferencing) and the additive effects of interventions that include direct child engagement approaches. Last, there is a need for future research that



examines the long-term impact of parenting skills training programs on the sustainment of gains in parenting skills, parental emotion regulation and stress, family functioning, and longitudinal child outcomes.

## **Conclusions**

The current systematic review sought to synthesize the effectiveness of parenting programs among parents with stressors due to parental history of sexual trauma and/or SMI, as well as among parents with histories of military service. In community samples, the evidence base for parenting skills training to increase parenting competence and reduce family stress is robust. In our review, most included studies reported significant findings on prioritized parent, family, and child outcomes, showing a general pattern of improvements across diverse types of parenting skills training programs that mirror findings in other studies of parenting programs. Yet, our certainty of evidence ratings were generally low due to issues with risk of bias of included studies or indirectness of populations or intervention approaches to the VA health care context. While parenting skills training programs show promise, it is important to consider the feasibility and scalability of implementation across the VA when evaluating these parenting programs.

# EVIDENCE REPORT

## INTRODUCTION

### PURPOSE

The Evidence Synthesis Program (ESP) is responding to a request from the VHA Office of Mental Health and Suicide Prevention for a systematic review of the effectiveness of parenting skills training programs on key parent, family, and child outcomes, and the implementation considerations for effective parenting programs. Findings from this review will be used to inform national policy recommendations in a congressionally mandated report.

### BACKGROUND

Evidence-based parenting programs have demonstrated effectiveness for increasing parenting confidence, minimizing family stress, and improving parent-child relationships.<sup>1,2</sup> These programs typically include core components, such as direct teaching of specific positive parenting skills (*eg*, active listening, reducing negative communications, engaging in child-selected play) and explicit instructions to practice skills.<sup>3-6</sup> Yet the majority of evidence-based behavioral parenting programs have centered on the child's presentation, including behavioral or emotional challenges,<sup>7</sup> rather than on the characteristics of parents. It is unclear whether these parenting interventions centered on children's characteristics (*eg*, autism spectrum disorder, attention deficit and hyperactivity disorder) would be effective for parents with unique needs and experiences including histories of sexual trauma, serious mental illness, and/or military service. Studies suggest that different types of parental stress can impact parenting behaviors in distinctive ways.<sup>8</sup>

While parenting can be challenging for any person, parents who have experienced significant stress from their own traumatic exposures or health conditions may face even greater obstacles in their family systems.<sup>9-12</sup> Such excess parental stress can have immediate negative consequences on family functioning and lasting influence on the child and family, including, but not limited to, mental health issues, behavioral problems, substance use, child maltreatment, and increased healthcare utilization.<sup>12</sup> Among Veterans, an important source of excess family stress is a parental history of sexual trauma, including military sexual trauma.<sup>13</sup> Differences in parenting practices have been observed in both civilian and Veteran populations among women with sexual trauma.<sup>8</sup> For example, mothers with histories of sexual trauma can have impaired interactions with their infants<sup>14</sup> and be less sensitive and more intrusive with school-age children.<sup>15</sup> Serious mental illness also has been found to be a risk factor for negative parenting practices and family dysfunction. For example, parents with a history of posttraumatic stress disorder (PTSD) are more likely to have higher levels of parenting stress, impaired family functioning, and more frequent use of negative parenting practices.<sup>16,17</sup> Similarly, parents with depression report lower levels of parenting self-efficacy, which can worsen parental depression and positive parenting practices.<sup>18</sup>

Military Veterans are at high risk for experiencing stressors that can impact parenting practices.<sup>14,19,20</sup> Prolonged separations from the family, deployments to stressful environments, and exposure to potentially traumatic events are common experiences for military personnel. Also, military Veterans are at higher risk for serious mental illness,<sup>21,22</sup> a known contributor to

parenting challenges.<sup>20</sup> While not all military-connected families will experience negative family sequela due to their experiences in military service, previous research has shown that parental military service can be a family stressor associated with parenting difficulties and impaired family functioning.<sup>23,24</sup> Providing interventions to enhance parenting practices and support parents who have experienced, or are at high risk for experiencing, excess family stress can be a critical tool for improving family functioning.<sup>25</sup> Moreover, there is evidence that parental mental health may not impede the benefits of parenting skills training programs.<sup>26</sup>

The Veterans Health Administration (VHA) is the country's largest integrated health system and as such has a mandate to care for Veterans across the entire United States and associated territories. Given that military Veterans are more likely to experience mental health and trauma stressors, the Veteran population served by the VHA may benefit from parenting skills training programs. Yet it is unknown if parenting programs are effective among populations that have family stressors like those of the Veteran population. The VHA has piloted Parenting Skills Training in Affective and Interpersonal Regulation (Parenting STAIR), a program for which there are no published evaluations among Veterans. The current systematic review aimed to (1) understand whether, and in what ways, parenting skills training programs can effectively support parents who are at increased risk for stress due to parental history of sexual trauma in adulthood and/or serious mental illness, as well as parents with histories of military service, and (2) clarify characteristics of effective parenting skills training programs.

## METHODS

### TOPIC DEVELOPMENT

This topic was requested by the VHA Office of Mental Health and Suicide Prevention. The key questions and eligibility criteria were informed through feedback from VA operational partners and a technical expert panel assembled for this review.

### KEY QUESTIONS

The following key questions (KQs) were the focus of this review:

- KQ1:* Among parents with a history of sexual trauma, what are the effects of parenting skills training interventions on key parent, family, and child outcomes?
- KQ2:* Among parents with a history of serious mental illness, what are the effects of parenting skills training interventions on key parent, family, and child outcomes?
- KQ3:* Among parents with a history of military service, what are the effects of parenting skills training interventions on key parent, family, and child outcomes?
- KQ4:* What are intervention characteristics (*eg*, format, dose, content) of the identified effective parenting skills training interventions?

### PROTOCOL

A preregistered protocol for this review can be found on the PROSPERO international prospective register of systematic reviews (<http://www.crd.york.ac.uk/PROSPERO/>; registration number CRD42022383964).

### DATA SOURCES AND SEARCHES

To identify articles relevant to the key questions, a research librarian searched MEDLINE (via Ovid), Embase (via Elsevier), APA PsycINFO (via Ovid), and CINAHL (via EBSCO) Complete from inception to September 2022 using a combination of database-specific controlled vocabulary terms and keywords searched in the titles and abstracts related to parenting skills, military, Veterans, sexual trauma, and mental illness (see Appendix A for complete search strategies). An experienced medical librarian devised and conducted the search with input on keywords from the other authors. The search strategies were peer reviewed by another librarian using a modified PRESS checklist.<sup>27</sup> Case reports, editorials, letters, comments, and conference abstracts were excluded from the search, as were animal-only studies. Study selection was based on the eligibility criteria described below. Given the lack of studies identified for KQ1, we screened ClinicalTrials.gov for any studies underway that describe interventions for parents with a history of sexual trauma in adulthood.

### STUDY SELECTION

#### Eligibility Criteria

Studies identified through our primary search were classified independently based on title and abstract by 2 investigators assessing relevance to the KQs from our *a priori* established

eligibility criteria (Table 1). All citations classified for inclusion by at least 2 investigators were reviewed at the full-text review level. Two investigators agreed on exclusion at title and abstract as well as full-text review levels. We tracked screening in electronic databases (for referencing, EndNote; PICO Portal for screening and data extraction).

**Table 1. PICOTS Eligibility Criteria**

Study Characteristic	Inclusion Criteria	Exclusion Criteria
Population <sup>a</sup>	<p>Community-dwelling biological, adoptive, or parent figures/guardian (eg, grandparents as primary caregivers) aged 18 and over of children aged 2 to 17 with histories of:</p> <p>KQ1: Sexual trauma in adulthood (eg, military sexual trauma)</p> <p>KQ2: Serious mental illness (SMI) as determined by meeting 1 of the following criteria:</p> <ul style="list-style-type: none"> <li>• The population under study has at least 1 of the following conditions: schizophrenia or other psychotic disorder; bipolar disorder; major depressive disorder (MDD); posttraumatic stress disorder (PTSD) or borderline personality disorder (BPD)</li> <li>• The population under study is explicitly labeled as SMI by the study authors even if the operationalized definition of SMI is different (could also be labeled as severe and persistent mental illness or SPMI)</li> </ul> <p>KQ3: Military service in the United States or other countries' armed forces, including those now separated from service (ie, Veterans)</p> <p>KQ1-3: Any mixed populations comprised of conditions/exposures listed for KQ1-3 if meeting 75% or more of the overall study population</p>	<ul style="list-style-type: none"> <li>• Family caregivers who are not primary caregivers</li> <li>• Parents of infants and children under age 2</li> <li>• Mixed populations of infants and children if the children under age 2 comprise 25% or more of the total population</li> <li>• Inpatient populations</li> <li>• Imprisoned populations</li> </ul>
Intervention	<p>Manualized/protocolized parenting skills training interventions that are appropriate for parent figures of any gender identity that are intended to prevent adverse child and family outcomes (eg, aggressive behaviors) or increase parenting capacity (eg, increasing use of effective discipline; promoting nurturing behaviors to support positive parent-child interactions; responding sensitively to child's emotional needs). A parenting skills training program must include modeling, homework, rehearsal/role play, or practice that promotes the acquisition of parenting skills</p>	<ul style="list-style-type: none"> <li>• Parenting interventions where eligibility for the study and program are based on a child's qualifying condition (eg, children with physical, learning, or developmental disabilities, or with mental health conditions)</li> <li>• Peer or professional led support groups without manualized content</li> <li>• Multi-modal programs that include individualized or group adjunctive psychotherapies (eg, cognitive behavioral therapy,</li> </ul>

Study Characteristic	Inclusion Criteria	Exclusion Criteria
	<p>Parenting skills programs may include enhancements (eg, additional psychoeducation) that aim to address needs of specific parent groups (eg, SPMI, sexual trauma, military service)</p> <p>Qualifying programs can be delivered:</p> <ul style="list-style-type: none"> <li>• Virtually or in-person</li> <li>• Individually or in groups</li> <li>• Synchronously (video, telephone) or asynchronously (eg, self-paced video tutorials on a website)</li> </ul>	<p>dialectics behavioral therapy) aimed at improving the mental health condition of the parent without parenting skills training components</p>
Comparators <sup>b</sup>	Any comparator (eg, usual care, active comparator, historical controls)	No comparator
Outcome <sup>b</sup>	<p>KQ1-3:</p> <ul style="list-style-type: none"> <li>• Parent outcomes (ie, emotion regulation, positive parenting skills, parenting knowledge, parenting self-efficacy, parental stress)</li> <li>• Family outcomes (ie, family conflict, family functioning)</li> <li>• Child outcomes (ie, disruptive behaviors)</li> </ul> <p>KQ4: Characteristics of effective parenting programs such as:</p> <ul style="list-style-type: none"> <li>• Content (eg, use of home-based components or visitations, homework or practice between sessions, observations of parent-child interactions)</li> <li>• Format (eg, group-based, virtual, involvement of child in parenting program)</li> <li>• Dose</li> <li>• Recruitment technique, enrollment, engagement or adherence, or</li> <li>• Implementation factors (eg, barriers or facilitators to implementation, qualifications of the interventionist, satisfaction with training program)</li> </ul>	Any outcomes not listed
Setting	<ul style="list-style-type: none"> <li>• Community or outpatient setting</li> <li>• Virtual or in-person setting</li> </ul>	<ul style="list-style-type: none"> <li>• Inpatient care</li> <li>• Residential programs</li> <li>• Prison</li> </ul>
Study design	<ul style="list-style-type: none"> <li>• Randomized trials</li> <li>• Nonrandomized trials</li> <li>• Controlled before-after studies</li> <li>• Interrupted time-series studies or</li> </ul>	<ul style="list-style-type: none"> <li>• Descriptive studies with no outcomes data</li> <li>• Qualitative studies</li> <li>• Case reports and case studies</li> </ul>

Study Characteristic	Inclusion Criteria	Exclusion Criteria
	<ul style="list-style-type: none"> <li>repeated measures studies</li> <li>Prospective and retrospective cohort studies</li> <li>Uncontrolled before-after studies (<i>ie</i>, pre-post study).</li> </ul>	<ul style="list-style-type: none"> <li>with no outcome information</li> <li>Studies that included only outcomes data from 1 point in time (post only, uncontrolled clinical study)</li> <li>Modeling studies that used simulated data</li> <li>Not a clinical study (<i>eg</i>, editorial, nonsystematic review, letter to the editor)</li> </ul> <p>May also exclude if there are many studies:</p> <ul style="list-style-type: none"> <li>Self-described pilot studies without adequate power to assess impact of intervention on outcomes.</li> <li>Studies of small sample sizes (<math>N &lt; 100</math>)</li> </ul>
Countries	OECD <sup>c</sup>	Non-OECD
Publication types	Full publication in a peer-reviewed journal	<ul style="list-style-type: none"> <li>Letters, editorials, reviews, dissertations, meeting abstracts, protocols without results</li> <li>Publications in predatory journals<sup>d</sup> (<i>eg</i>, rapid pay-to-publish models without rigorous peer review)</li> </ul>

*Notes.* <sup>a</sup> For the population of interest, we took a first-order approach and only retained (1) studies conducted with the populations of interest or (2) studies that present subgroup analysis, or moderator analysis, by populations of interest.

<sup>b</sup> Primary studies had to be comparative in design. Yet outcomes for KQ4 did not need to be comparative (*eg*, satisfaction with intervention, barriers, facilitators).

<sup>c</sup> OECD 2022=Organization for Economic Co-operation and Development includes Australia, Austria, Belgium, Canada, Chile, Colombia, Costa Rica, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Latvia, Lithuania, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States.

<sup>d</sup> There is no single way to identify all the predatory journals, as this is a rapidly evolving industry. Thus, we will use the best available guidance to scrutinize potential problematic studies such as pay-to-publish models, lack of rigorous peer review, rapid publishing timelines, lack of impact factor information, and being identified as a potential problematic journal by the field, and expert librarian consultation.

## DATA ABSTRACTION AND ASSESSMENT

Data from published reports were abstracted into PICO Portal by 1 reviewer and over-read by a second reviewer. We resolved disagreements by consensus or by obtaining a third reviewer's opinion when consensus could not be reached between the first and second reviewers. Key information abstracted included participant descriptors (*eg*, age, sex, race, diagnosis; see Appendix C), intervention characteristics (*eg*, parenting program, parenting skills techniques, theoretical foundation, dose; see Appendix D), comparator, and outcomes. Multiple reports from a single study were treated as a single data point, prioritizing results based on the most complete

and appropriately analyzed data. When critical data were missing or unclear in published reports, we requested supplemental data from the study authors. Key features relevant to applicability included a match between the sample and target populations (*eg*, age, comorbidities, Veteran status).

## SYNTHESIS

We summarized the primary literature using relevant data abstracted from the eligible studies. Summary tables describe the key study characteristics of the primary studies: study design, patient demographics, and details of the intervention and comparator. To aid interpretation of results, we synthesize the results for each category of outcome (*ie*, parent-level, family-level, child-level) by intervention type (*eg*, in-person multi-family groups, web-based self-directed modules). Outcomes were grouped by consensus among a small group of investigators with content expertise (ND, JS, JMG, AMG) using face validity and external resources. We grouped outcomes into similar intervention types. Interventions were also grouped by consensus (JMG, AMG). (Appendix E has a brief description of the content of the parenting skills intervention programs.)

We conducted quantitative synthesis (*ie*, meta-analysis) when there were at least 3 studies with the same outcome, based on the rationale that 1 or 2 studies do not provide adequate evidence for summary effects. For meta-analyses, feasibility depends on the volume of relevant literature, conceptual homogeneity of the studies, and completeness of results reporting. When quantitative synthesis was possible, continuous outcomes were synthesized as standardized mean differences (SMD). We evaluated statistical heterogeneity using visual inspection and 95% prediction intervals using the *metafor*<sup>28</sup> package for R (R Foundation for Statistical Computing, Vienna, Austria). When a quantitative synthesis was not feasible, we narratively analyzed the data. We gave more weight to the evidence from higher quality studies with more precise estimates of effect. Our approach to narrative synthesis focused on identifying patterns in intervention effects. We then explored potential reasons for inconsistency in treatment effects across studies by evaluating underlying differences in the study populations, interventions, comparators, and outcome definitions.

### Analysis of Subgroups or Subsets

When meta-analyses were feasible, we considered subgroup analysis or meta-regression to explore quantitative or qualitative interactions of prespecified potential effect modifiers such as study design (*eg*, allocation concealment) and, potentially, intervention approach. For patient-level characteristics of interest (*ie*, sex, race/ethnicity, age), we identified analyses conducted within the primary literature that evaluated effect modification (*eg*, subgroup analyses, regression model explanatory variables). When we were unable to conduct meaningful quantitative analysis of effect modification across characteristics of interest, we narratively considered the representation of subgroups within identified studies in comparison to the VA population.

### Grading the Certainty of Evidence

The certainty of evidence (COE) for each key question was assessed using the approach described by the Grading of Recommendations Assessment, Development and Evaluation (GRADE) working group.<sup>28</sup> We limited GRADE ratings to those outcomes identified by the



stakeholders and technical expert panel as critical to decision-making (*ie*, parenting skills, parenting self-efficacy, parental stress, emotion regulation of parent, family functioning/conflict). In brief, the GRADE approach requires assessment of 4 domains:

- Risk of bias (*eg*, Are there major limitations in included study designs for this outcome?)
- Consistency of effects (*eg*, Do point estimates vary widely across studies on this outcome?)
- Directness (*eg*, Are we confident the evidence directly compares interventions of most interest to key stakeholders? Are these interventions assessed in populations of interest to key stakeholders?)
- Precision (*eg*, For this outcome, are there relatively few patients? Are the 95% confidence intervals wide?)

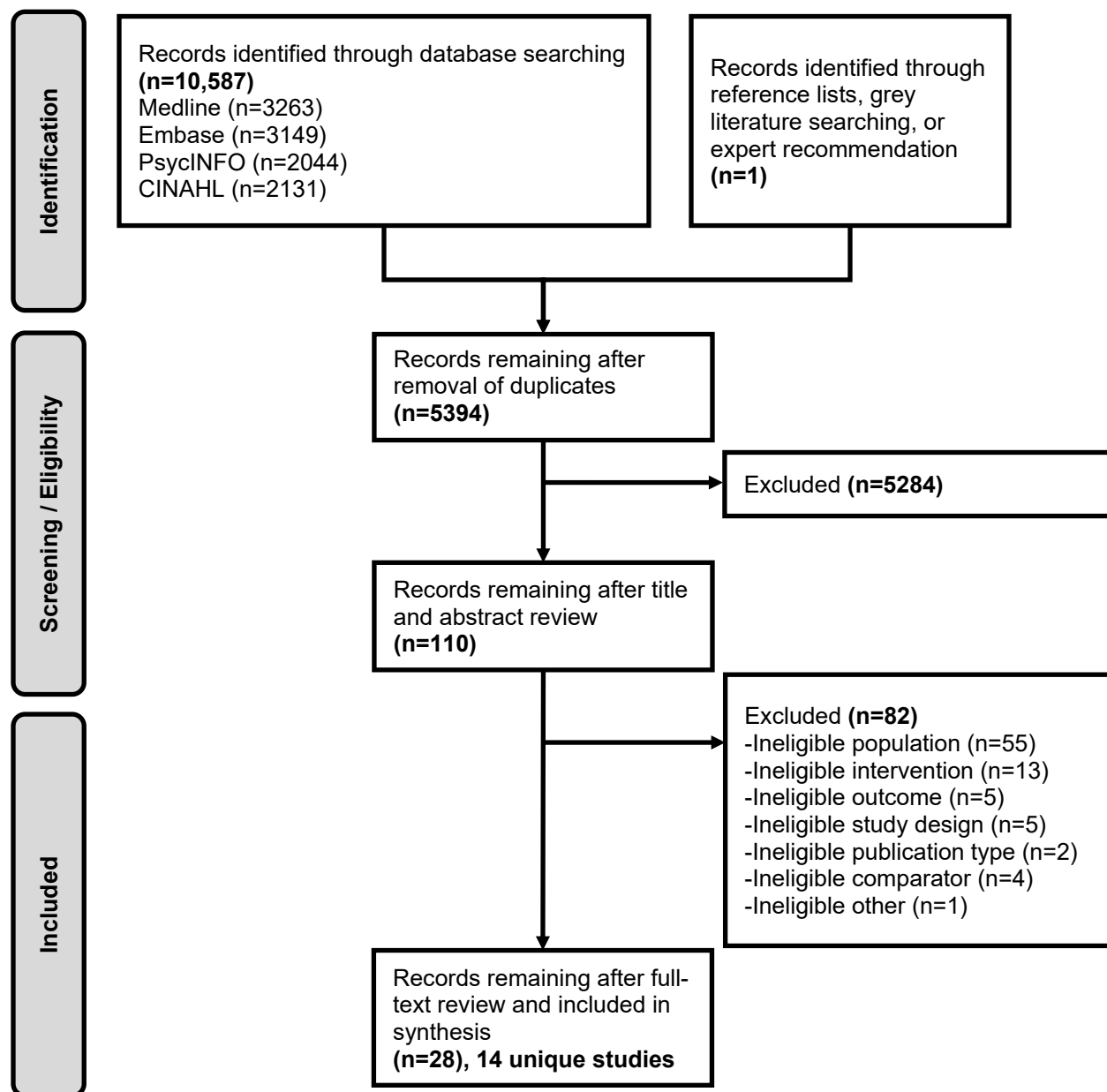
Additional domains to be used when appropriate are coherence, dose-response association, impact of plausible residual confounders, strength of association (magnitude of effect), and publication bias. These domains were considered qualitatively, and we assigned a summary COE rating after discussion by 2 investigators (AMG, JMG). For each KQ, we conducted our COE assessments by intervention type (*eg*, in-person group) for each outcome. In keeping with GRADE guidelines, we also provide separate COE ratings for randomized studies and observational studies.

## RESULTS

### LITERATURE FLOW

The literature flow diagram (Figure 1) summarizes the results of the study selection process (see Appendix B for full list of excluded studies).

**Figure 1. Literature Flowchart**



## LITERATURE OVERVIEW

We identified 10,587 studies through searches of MEDLINE (via Ovid), EMBASE (via Elsevier), APA PsycINFO (via Ovid), and CINAHL Complete (via EBSCO). After removing duplicates, and including 1 citation identified by expert recommendation, there were 5,394 articles remaining in total. After applying inclusion and exclusion criteria to titles and abstracts, 110 articles remained for full-text review. Of these, we retained 28 articles, encompassing 14 unique studies, for data abstraction. Of these 14 studies, half were RCTs, and most were conducted in North America (USA, Canada). Table 2 provides an overview of study characteristics.

**Table 2. Profile of Included Studies**

Number of Studies	14 studies (encompassing 28 articles)
Key Question	KQ1 ( $N = 0$ ); KQ2 ( $N = 9$ ); KQ3 ( $N = 5$ ); KQ4 ( $N = 6$ )
Study Designs	Randomized controlled trial ( $N = 7$ ), controlled before-after ( $N = 3$ ), repeated measure studies ( $N = 2$ ), uncontrolled before-after ( $N = 2$ )
Study Year Range	2003 to 2022
Number of Participants	4,172
Countries	USA ( $N = 6$ ), Europe ( $N = 5$ ), USA and Japan ( $N = 1$ ), Canada ( $N = 2$ )
Intervention Categories	In-person individual ( $N = 1$ ), in-person individual + group ( $N = 1$ ), group-based in-person ( $N = 5$ ), group-based chat only ( $N = 1$ ), home-based ( $N = 1$ ), web-based self-directed ( $N = 3$ ), virtual individual counseling ( $N = 1$ ), virtual individual home visitation with live coaching ( $N = 1$ )
Parent Outcomes	Self-efficacy ( $N = 5$ ), parenting skills ( $N = 9$ ), parental stress ( $N = 3$ ), emotion regulation ( $N = 2$ )
Family Outcomes	Family functioning ( $N = 8$ ), family conflict ( $N = 2$ )
Child Outcomes	Child behavior problems ( $N = 10$ )
ROBINS I Risk of Bias	Low ( $N = 0$ ), moderate ( $N = 4$ ), serious ( $N = 3$ ), critical ( $N = 0$ )
ROB 2 Risk of Bias	Low ( $N = 2$ ), some concerns ( $N = 2$ ), high ( $N = 3$ )

### KEY QUESTION 1: AMONG PARENTS WITH A HISTORY OF SEXUAL TRAUMA, WHAT ARE THE EFFECTS OF PARENTING SKILLS TRAINING INTERVENTIONS ON KEY PARENT, FAMILY, AND CHILD OUTCOMES?

We identified no eligible studies that addressed KQ1.

## KEY QUESTION 2: AMONG PARENTS WITH A HISTORY OF SERIOUS MENTAL ILLNESS, WHAT ARE THE EFFECTS OF PARENTING SKILLS TRAINING INTERVENTIONS ON KEY PARENT, FAMILY, AND CHILD OUTCOMES?

### Key Points

- In total, 9 studies ( $N = 904$  families) meeting eligibility criteria assessed the impact of parenting skills training programs among parents with histories of SMI. Most studies had fewer than 100 families/participants.
  - Study designs include the following: 5 RCTs (3 with high ROB), 2 controlled before-after designs (moderate ROB), 1 repeated measures design (serious ROB), 1 uncontrolled before-after study (moderate ROB).
  - Studies recruited parents with the following conditions: MDD (3 studies  $N = 445$ ), schizophrenia spectrum disorder (2 studies,  $N = 141$  parents), bipolar disorder (3 studies,  $N = 230$ ), and mixed populations of SMI conditions (1 study,  $N = 48$  parents).
- The most common intervention mode was in-person multi-family groups (4 studies), followed by web-based self-directed modules (3 studies).
  - Most studies ( $N = 6$ ) cited an evidence-based parenting skills protocol as the basis for their parenting skills training approach.
  - Of the 5 studies delivered in-person, most ( $N = 4$ ) directly involved the child as part of the parenting skills training program.
- Parent-level outcomes: Eight studies assessed parenting outcomes. While the overall trend was toward positive improvements in key parent outcomes, not all were significant.
  - The overall trend supported a positive impact of behavioral parenting programs on the outcome of parenting skills (results from 5 of 7 studies were significant), although a meta-analysis of 3 web-based self-directed programs was not significant. None of the web-based studies sought to include other family members like spouses or children.
  - Most studies measuring parental self-efficacy (3 of 5 studies) reported significant increases in parents' sense of competency in parenting.
  - Only 1 study assessed stress related to parenting; results demonstrated significant improvements in parental stress.
  - No identified studies assessed parental emotion regulation and parenting knowledge among parents with histories of SMI.
- Family-level outcomes: Five studies measured family functioning and 1 measured family conflict. The studies show mixed results in family functioning outcomes.
  - Only 2 of the 5 studies reported significant improvements. Both studies were in-person multi-family parenting groups.
- Child-level outcomes: Child problem behaviors were assessed in most studies ( $N = 7$ ); results were mixed.

- All 4 studies of the parenting skills programs that reported significant impacts on child behaviors were adapted from evidence-based parent programs.
- The positive studies used 3 different interventions: in-person family counseling plus multi-family group sessions with parallel but separate group sessions for children (1 study), a home-based program (1 study), and a web-based self-directed program (2 studies).

## Detailed Description

We identified 9 studies<sup>29-38</sup> ( $N = 904$  families) that met our inclusion criteria for behavioral parenting programs conducted among parents with histories of SMI. Most of the studies were conducted in samples of less than 100 families, with 3<sup>29,33,35</sup> being conducted in studies of less than 50 participants. Studies recruited parents with the following conditions: MDD (3 studies,<sup>34-36</sup>  $N = 445$ ), schizophrenia spectrum disorder (2 studies,<sup>29,32</sup>  $N = 141$ ), bipolar disorder (3 studies,<sup>30,31,37</sup>  $N = 230$ ), and mixed population of SMI conditions (1 study,<sup>33</sup>  $N = 48$ ).

Parenting programs used 4 main intervention modes: in-person multi-family groups (4 studies<sup>30,34-36</sup>), in-person home visits with a self-directed workbook (1 study<sup>29</sup>), an online chat-based group (1 study<sup>33</sup>), and web-based self-directed modules (3 studies<sup>31,32,37</sup>). Most studies ( $N = 6$ ) did not directly involve the child as part of the parenting skills training program. For synchronous parenting skills interventions, sessions ranged in length from 45 minutes to 2 hours over the course of 8 to 14 weeks. Studies employed a mix of interventionists, with only 2 using licensed providers<sup>35,36</sup> and 3 using graduate students<sup>29,30,34</sup> supervised by clinical psychologists. The 3 self-directed internet-based studies ranged in length from 10 to 16 weeks. Appendix D provides further details of each included intervention.

Study designs include 5 RCTs,<sup>31,32,34,35,37</sup> 3<sup>32,35,37</sup> of which had high ROB.<sup>30,33,35</sup> Two studies<sup>30,36</sup> were controlled before-after designs (moderate ROB), 1<sup>29</sup> study used a repeated measures design with serious ROB, and 1 was an uncontrolled before-after study with moderate ROB.<sup>33</sup> Sources of bias among the RCTs identified for this KQ included deviations of intended interventions, missing outcome data, and outcome measures. Common ROB for the other studies identified for KQ2 included confounding, selection of participants into the study, missing data, and outcome measures. (Refer to Appendix F for details of the ROB assessments.)

Due to the heterogeneity in study designs and outcomes, we were able to conduct only 1 meta-analysis. Other outcomes are narratively synthesized. Next, we describe the results for each category of outcomes by intervention type.

## Parent-level Outcomes

Eight studies assessed at least 1 parenting outcome of interest. Of these, 7 assessed parenting skills, 5 examined parental self-efficacy, and 1 focused on parental stress. No studies assessed the impact of parenting skills programs among parents with SMI on the outcomes of parental emotion regulation and parenting knowledge. Parent-level outcomes are organized by parenting skills, parenting self-efficacy, and parental stress and further refined by intervention type.

## Parenting Skills

The 7 studies that assessed the outcome of parenting skills included 4 RCTs (3 high ROB<sup>32,35,37</sup>, 1 low ROB<sup>31</sup>), 1 uncontrolled before-after study,<sup>33</sup> 1 controlled before-after study,<sup>30</sup> and 1 repeated measures study.<sup>29</sup> Most studies (5 out of 7) reported a significant impact of the parenting skills training interventions on parenting skills.<sup>29,30,32,33,37</sup> Below, we summarize results by intervention type, focusing first on randomized designs, followed by those with fewer ROB concerns.

### *Group-based interventions*

One RCT (high ROB),<sup>35</sup> 1 controlled before-after study (moderate ROB),<sup>30</sup> and 1 uncontrolled before-after study (moderate ROB)<sup>33</sup> assessed the impact of parenting skills training programs on parenting skills using group sessions. Two of these were in-person groups and reported mixed results, and 1 was conducted in an online secure chat room and reported positive results on parenting practices.

The RCT assessed the impact of an intervention consisting of 8 weekly multi-family group 2-hour sessions that took place in person compared to a waitlist control among 44 parents with major depressive disorder and found no significant difference using the Positive Parenting Practice Scale.<sup>35</sup> The controlled before-after study assessed the impact of weekly group sessions spread out over 12 weeks that focused on strengthening stress-coping and resilience among parents with bipolar disorder.<sup>30</sup> Sessions were 2 hours and after completing the session participants were given the opportunity to practice their skills related to problem solving and healthy communication. This study reported significant differences in observed negative parental behaviors ( $p < 0.001$ ) and positive parental behaviors ( $p < 0.001$ ).

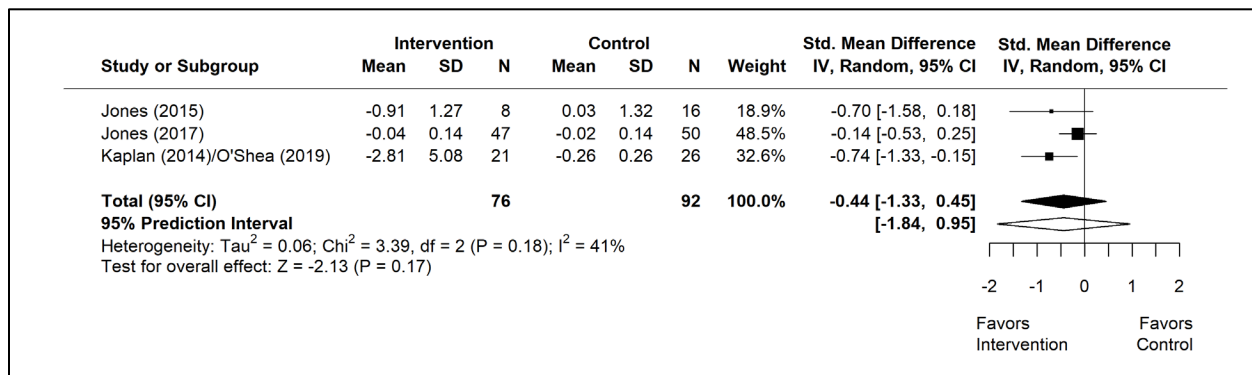
The uncontrolled before-after study enrolled 48 parents with a broad range of SMI conditions and assessed the impacts of an online intervention consisting of 8 90-minute weekly group sessions for parents only that took place in a secured online chatroom.<sup>33</sup> Participants were given homework and practice exercises to complete between session. This study used a Dutch version of a parenting scale and reported positive impacts and a moderate-sized effect on the parental laxness subscale (SMD = 0.52,  $p = 0.007$ ). For the over-reactivity subscale, the study reported a significant difference and a large effect size (SMD = 2.76,  $p = 0.004$ ).

### *Web-based self-directed interventions*

Three RCTs<sup>31,32,37</sup> assessed the impact of self-paced online programs on parenting skills. The first RCT (low ROB)<sup>31</sup> analyzed 97 parents diagnosed with bipolar disorder who were randomized into an intervention group or a waitlist control group. In the intervention group, participants were offered access to interactive self-management educational material focused on bipolar disorder as it relates to parenting issues for 16 weeks. The second RCT (high ROB)<sup>37</sup> analyzed 39 parents with self-diagnosed bipolar disorder who either (a) received a 10-week, web-based intervention focused on managing child behavior plus a listserv moderated by a parent with mental illness and a mental health provider or (b) were randomized to a waitlist control condition. During the intervention course, new web-based information was released to parents weekly in written, video, and audio formats to help them complete their self-help book. In the final RCT (high ROB),<sup>32</sup> 60 mothers diagnosed with either schizophrenia or a mood disorder were randomized to receive either an intervention consisting of a self-guided, online

parenting course or a control condition involving participation in a healthy lifestyle course. In the intervention condition, mothers were instructed to complete weekly 30-minute online sessions for 3 months; each lesson had a short quiz and homework assignment. While negative parenting practices were reduced across the 3 self-directed studies ( $N = 168$ ), web-based interventions did not significantly impact negative parenting practices (SMD =  $-0.44$ , 95% CI  $[-1.33, 0.45]$ ; 95% prediction interval [PI]  $[-1.84, 0.92]$ ) (Figure 2).

**Figure 2. Forest Plot of the Effects of Web-based Self-directed Interventions on Parenting Skills at End of Treatment**



### *Home-based self-help workbook with facilitated engagement interventions*

One repeated measures study (serious ROB) assessed the delivery of a 10-week manualized self-help workbook of the Triple P parenting program for 10 parents diagnosed with schizophrenia.<sup>29</sup> Participant difficulty in implementing the workbook necessitated a change to a facilitated model; study staff visited participants' homes to help with the weekly lessons. Specifically, parents had difficulty understanding tasks in the workbook and required support and guidance in developing plans to implement parenting skills. Additionally, facilitated home-based sessions with role play gave participants the opportunity to practice the skills they were learning in the manual. The Total Parenting Scale was used to assess a range of parenting behaviors and demonstrated large, significant effect sizes at both 3 (SMD =  $2.76$ ,  $p = 0.004$ ) and 6 months (SMD =  $3.28$ ,  $p = 0.003$ ) after baseline.

### *Parenting Self-efficacy*

In total, 5 studies assessed sense of competency in parenting (*ie*, parental self-efficacy). This included 3 RCTs (2 high ROB,<sup>32,35</sup> 1 low ROB<sup>31</sup>), 1 uncontrolled before-and-after study<sup>33</sup> with moderate ROB, and 1 repeated measures study<sup>29</sup> with serious ROB. While reports were mixed by intervention type, most studies (3 of the 5) reported a significant impact on parenting self-efficacy.

### *Group-based interventions*

One high ROB RCT<sup>35</sup> and 1 serious ROB uncontrolled before-after study<sup>33</sup> assessed the impact of parenting skills training programs on self-efficacy for parenting. The RCT found that an in-person multi-family group program (8 weekly 2-hour meetings) did not significantly impact self-efficacy ( $p = 0.06$ ) compared to waitlist control among 44 parents with major depressive disorder. In contrast, the uncontrolled study reported moderate effects of an online program

conducted in a secure group chat room consisting of 8 weekly sessions lasting 90-minutes (SMD = 0.46,  $p = 0.009$ ) for 48 parents with a diagnosis of SMI.

#### *Web-based self-directed interventions*

Two RCTs assessed the impact of self-paced online programs on parental self-efficacy. The first RCT ( $N = 97$ ; low ROB)<sup>31</sup> found that 16 weeks of the web-based Triple P Positive Parenting Program<sup>39,40</sup> resulted in significant improvements in parenting confidence for parents with bipolar disorder, compared with waitlist control ( $p < 0.01$ ). The other RCT (high ROB)<sup>32</sup> assessed web-based self-directed programs plus a listserv moderated by parent and a mental health professional among 60 mothers diagnosed with a schizophrenia spectrum or mood disorder and did not find a significant impact on confidence in parenting.

#### *Home-based self-help workbook with facilitated engagement interventions*

In a repeated measures study (serious ROB)<sup>29</sup> of 10 mothers with schizophrenia spectrum disorder, a self-help variant of the Triple P Positive Parenting Program<sup>39,40</sup> was implemented with in-person guidance and support from study staff over 10 weeks. This study reported significant impacts on parental self-efficacy 3 months after baseline (SMD = 2.49,  $p = 0.001$ ).

### **Parental Stress**

#### *Web-based self-directed interventions*

Parental stress was reported by the low ROB RCT that delivered 16 weeks of the Triple P Positive Parenting program to 97 parents with bipolar disorder.<sup>31</sup> Parenting stress showed significant improvement post intervention compared with waitlist control ( $p = 0.01$ ).

### **Summary of Parent-level Results**

The included studies show mixed results in parent-level outcomes. Still, the overall trend was toward positive improvements in key parent outcomes. Of the 7 studies that reported on parenting skills, 5 demonstrated significant impacts. Similarly, most studies measuring parental self-efficacy also reported significant increases in parents' sense of competency in parenting. While only 1 study assessed stress related to parenting, this study also reported significant improvements in parental stress. No clear pattern emerged across intervention types, likely due to differences within each of the intervention types based on dose, populations, and intervention content.

### **Family-level Outcomes**

In total, 5 of the 9 studies assessed at least 1 family-level outcome: 5 measured family functioning and 1 measured family conflict. Family-level outcomes are organized by family functioning and further refined by intervention type.

#### *Family Functioning*

In total, 5 studies assessed family functioning. This included 3 RCTs (2 high ROB;<sup>32,35</sup> 1 low ROB<sup>31</sup>) and 2 controlled before-after studies<sup>30,36</sup> (moderate ROB). Only 2 studies<sup>30,35</sup> reported a significant impact of the parenting skills training interventions on improved family functioning.



*Group-based interventions*

Three studies assessed the impact of parenting interventions that used a multi-family group mode: 2 moderate ROB controlled before-after studies<sup>30,36</sup> and 1 high ROB RCT.<sup>35</sup> In the RCT, 44 parents with MDD were randomized to 8 weeks of in-person multi-family parenting training or a waitlist control. At end of treatment, parents in the multi-family group reported significant improvement in family functioning ( $p < 0.05$ ) and positive trends in family conflicts and parental disagreements that did not reach statistical significance.

The 2 controlled before-after studies both added a separate, parallel children's group to the multi-family group parenting program; results were mixed. The first controlled before-after study<sup>30</sup> assessed 12 weekly sessions among 55 parents with bipolar disorder. Using video recordings of structured parent-child cooperation tasks, the intervention demonstrated positive improvements in family functioning at end of treatment ( $p = 0.005$ ) that persisted to 6 months post-treatment ( $p < 0.001$ ). The other controlled before-after study<sup>36</sup> assessed a 10-week intervention consisting of in-person family counseling plus multi-family group sessions with parallel but separate group sessions for children for 175 parents with MDD. While the intervention group resulted in child-reported improvements in family functioning, these improvements did not significantly differ between groups.

*Web-based self-directed interventions*

Two RCTs assessed the impact of a web-based self-directed parenting program and found no significant impacts on family functioning. The first study<sup>31</sup> (low ROB) assessed the impact of parents randomized to a 16-week online Triple P program or waitlist among 97 parents with bipolar disorder. The other RCT<sup>32</sup> (high ROB) randomized 60 mothers with schizophrenia spectrum disorder to 3 months of an online self-directed parenting program plus a moderated listserv.

**Summary of Family-level Results**

The included studies show mixed results in family-level outcomes. While all studies yielded improvements in various measures of family functioning, only 2<sup>30,35</sup> of the 5 studies reported significant improvements. Both studies were in-person multi-family parenting groups, with 1 also having a children's group component.<sup>30</sup>

**Child-level Outcomes**

Among parents with a history of SMI, 7 of 9 studies explored the impact of parenting skills training programs on child behavioral problems. These included 3 RCTs (1 high ROB,<sup>37</sup> 1 low ROB,<sup>31</sup> 1 with some concerns ROB<sup>34</sup>), 2 controlled before-after studies (both with moderate ROB),<sup>30,36</sup> 1 uncontrolled before-after study<sup>33</sup> (moderate ROB), and 1 repeated measures study (serious ROB). Child-level outcomes are further refined by intervention type.

*Child Behaviors**Group-based interventions*

One RCT (some concerns for ROB),<sup>34</sup> 2 controlled before-after studies (moderate ROB),<sup>30,36</sup> and 1 uncontrolled before-after study (moderate ROB)<sup>33</sup> assessed the impact of parenting skills training programs on child behavioral problems. Of these, 3 studies assessed in-person groups,

with only 1 controlled before-after study<sup>36</sup> reporting significant effects. In this moderate ROB controlled before-after study, 175 parents with MDD were assigned to a 10-week intervention consisting of in-person family counseling plus multi-family group sessions with parallel but separate group sessions for children. Child behavioral outcomes were assessed using children's and parents' reports of children's emotional and behavioral problems as outcomes as well as 5 indices of parent-child relationships. Follow-up assessments indicated significantly lower levels of children's emotional and behavioral problems at post-test according to self-report (SMD = 0.40,  $p < .01$ ) and parental report (SMD = 0.37,  $p < .01$ ). The last study, an uncontrolled before-after design,<sup>33</sup> assessed an online parenting program that used a secure chat room and reported no significant differences in parent reports of child problem behaviors.

#### *Web-based self-directed interventions*

Two RCTs assessed the impact of a web-based self-directed parenting skills program; both studies reported significant impacts on child problem behaviors. The first RCT (low ROB)<sup>31</sup> tested the impact of parents randomized either to either a 16-week online Triple P program or a waitlist among 97 parents with bipolar disorder. This study reported a significant difference in parent reports of child behavioral problems favoring the intervention ( $p < 0.01$ ) that persisted through 48-week follow-up. The other RCT (high ROB),<sup>37</sup> also among parents with bipolar disorder ( $N = 78$ ), reported a large-sized effect at end of treatment (SMD = 1.00,  $p < 0.004$ ).

#### *Home-based self-help workbook with facilitated engagement*

In a serious ROB repeated measures study<sup>29</sup> of 10 mothers with schizophrenia spectrum disorder, a self-help Triple P workbook<sup>39,40</sup> was implemented with in-person guidance and support from study staff over a 10-week period. This study reported significant impacts on both intensity (SMD = 2.38,  $p = 0.001$ ) and frequency (SMD = 2.71,  $p = 0.001$ ) of problematic child behaviors at end of treatment that were sustained at 3- and 6-months' follow-up assessments.

### **Summary of Child-level Results**

The included studies show mixed results regarding the impact of parenting skills training on children's problem behaviors among parents with SMI. While all studies showed improvements, 4<sup>29,31,36,37</sup> of the 7 studies reported significant improvements. The positive studies used 3 different interventions: in-person family counseling plus multi-family group session with a parallel but separate group session for children (1 study<sup>36</sup>), home-based program (1 study<sup>29</sup>), and web-based self-directed program (2 studies<sup>31,37</sup>). Of note, all 4 of the parenting skills programs that had significant impacts on child behaviors were adapted from 2 evidence-based parenting programs: Triple P<sup>31,37</sup> (3 studies<sup>29,31,37</sup>) and Systematic Training for Effective Parenting<sup>41</sup> (1 study<sup>36</sup>) (Table 3).

**Table 3. Pattern of Outcomes Assessing Effectiveness of Parenting Skills Training Programs Among Parents With SMI**

Intervention Type <sup>a</sup>	Parent Outcomes				Family Outcomes		Child Outcomes	
	Parenting Skills	Parent Knowledge	Parent Self-efficacy	Parent Stress	Emotion Regulation	Family Functioning	Family Conflict	Child Behavioral Problems
<b>Study</b>								
<b>KQ2: Populations With Parental Histories of Serious Mental Illness</b>								
<b>Home-based Self-help Workbook With Facilitated Engagement</b>								
Wolfenden, 2022 <sup>29</sup>	Dark Blue		Dark Blue					Dark Blue
<b>In-person Multi-family Group Intervention</b>								
Compas, 2009 <sup>34b</sup>								Light Blue
Sanford, 2003 <sup>35b</sup>	Light Blue		Light Blue			Dark Blue	Light Blue	
Serravalle, 2021 <sup>30</sup>	Dark Blue					Dark Blue		Light Blue
<b>Virtual Group-based Chat Intervention</b>								
van der Zanden, 2010 <sup>33</sup>	Dark Blue		Dark Blue					Light Blue
<b>Web-based Self-directed Intervention</b>								
Jones, 2015 <sup>37</sup>	Dark Blue							Dark Blue
Jones, 2017 <sup>31b</sup>	Light Blue		Dark Blue			Light Blue		Dark Blue
Kaplan, 2014 <sup>32/</sup> O'Shea, 2019 <sup>42b</sup>	Dark Blue		Light Blue			Light Blue		
<b>In-person Individual Family Counseling + Multi-family Group + Children's Group Intervention</b>								
Fernando, 2018 <sup>36</sup>						Light Blue		Dark Blue

Notes. <sup>a</sup>Light blue shading indicates that an outcome was reported in the study. Dark blue shading indicates an outcome that was statistically significant.

<sup>b</sup>Randomized controlled trial study design.

## KEY QUESTION 3: AMONG PARENTS WITH A HISTORY OF MILITARY SERVICE, WHAT ARE THE EFFECTS OF PARENTING SKILLS TRAINING INTERVENTIONS ON KEY PARENT, FAMILY, AND CHILD OUTCOMES?

### Key Points

- In total, we identified 5 studies ( $N = 3,268$  families;  $N = 4,772$  participants) that assessed the impact of parenting skills training programs among families with a parental history of military service.
  - Only 2 studies were RCTs, of which only 1 was low ROB.
  - Only 1 study was conducted exclusively among Veterans ( $N = 41$ ).
- Parenting programs were delivered by individual family therapy (2 studies); multi-family groups (2 studies); and virtual home visits with live coaching (1 study).
  - Nearly all interventions (4) directly involved children as part of the parenting skills training program.
  - All included studies cited an evidence-based parenting skills training program as the basis for their parenting intervention.
- Parent-level outcomes: Studies assessed these outcomes: parenting skills (1 study), 2 parental stress (2 studies), and parental emotion regulation (2 studies). No included studies explored parenting self-efficacy or parenting knowledge.
  - The overall trend was toward positive changes in parent outcomes, though not all were significant.
- Family-level outcomes: Only 3 studies assessed family functioning; no studies assessed family conflict.
  - The 2 nonrandomized designs reported significant impacts on family function, while the low ROB RCT demonstrated significant improvements for mothers but not for fathers.
- Child-level outcomes: Child behaviors were assessed in 3 studies. While all reported significant improvements in some aspects of child behaviors, 2 studies had serious ROB issues.

### Detailed Description

We identified 5 eligible studies<sup>43-47</sup> ( $N = 3,268$  families;  $N = 4,772$  participants) that assessed the impact of parenting skills training interventions among parents with a history of military service. The median study size was 200 families (range: 41 to 2,615). Most studies were conducted among families with at least 1 active-duty parent ( $N = 3$  studies<sup>43,45,47</sup>). One<sup>44</sup> was conducted with families of active duty servicemembers or families with a Veteran parent with a history of deployments. Only 1 study was conducted exclusively with Veterans who were eligible to receive services through the VA ( $N = 41$ ).<sup>46</sup>

Parenting programs used 3 main interventions: individual family therapy (1 in-person<sup>45</sup>, 1 via videoconferencing<sup>43</sup>), in-person multi-family groups (2 studies<sup>44,47</sup>), and virtual home visits with live coaching (1 study<sup>46</sup>). The number of sessions/visits ranged from 6 to 14, with a range in length from 60 minutes to 2 hours. All included studies used interventions adapted from evidence-based parenting skills training programs.

All but 1 intervention<sup>47</sup> directly involved the child as part of the parenting skills training program. Child involvement was variable across studies. The 2 individual family therapy interventions<sup>43,45</sup> had at least 2 sessions where children attended family therapy with the parent(s). An in-person multi-family<sup>44</sup> group program had a separate children's play group held concurrently during parent sessions. One study included observed parent-child interactions by videoconference platform and interventionist real-time feedback via a "bug in ear" system.<sup>46</sup>

Nearly all (80%) of the studies employed a licensed provider to implement the parenting skills training interventions, with most ( $N = 3$ ) using a master's-level clinician. One study<sup>47</sup> employed a mix of non-clinical facilitators, including National Guard service members and Veterans. Appendix D provides further details of each included intervention.

Study designs include 2 RCTs<sup>43,47</sup> (1 low ROB,<sup>43,47</sup> 1 with some ROB concerns<sup>43,47</sup>). Overall sources of ROB for RCTs included the randomization process, outcome measures, and selection of results reported. Nonrandomized designs include the following: 1 controlled before-after design<sup>44</sup> (moderate ROB), 1 repeated measures design<sup>45</sup> (serious ROB), and 1 uncontrolled<sup>46</sup> before-after study (moderate ROB). Sources of bias included confounding, missing data, and outcome measures. (Refer to Appendix F for details of the ROB assessments.)

Due to the heterogeneity in study designs, outcomes, and intervention types, we were not able to conduct meta-analysis. Other outcomes are narratively synthesized. Next, we synthesize the results for each category of outcomes by intervention type.

## Parent-level Outcomes

Included studies assessed these outcomes: parenting skills (1 study), parental stress (2 studies), and emotion regulation of the parent (2 studies). No studies assessed parenting self-efficacy and parenting knowledge. Parent-level outcomes are organized by parenting skills, parental stress, and parental emotion regulation and further refined by intervention type.

### Parenting Skills

#### *In-person multi-family group intervention*

One RCT (rated as some concerns for ROB)<sup>47</sup> tested parenting skills training interventions among 336 National Guard and Reserve families ( $N = 608$  parents). Families needed to have at least 1 child aged 5–12 years and a parent with a deployment to Operation Iraqi Freedom, Operation Enduring Freedom, or Operation New Dawn (OIF/OEF/OND). Families were randomized to an in-person group-based parenting program (After Deployment, Adaptive Parenting Tools; ADAPT) modeled after the evidence-based parenting skills training program Parent Management Training–Oregon Model (PMTO)<sup>48</sup> or a usual care condition of web and print resources on parenting. The core components of the PMTO model were extended to include (1) information specific to military families on deployments, (2) mindfulness exercises as a technique to improve parent emotion regulation, and 3) emotion coaching skills. The facilitators

were a mix of non-military human service providers (eg, school guidance counselors) and Veterans and National Guard servicemembers who received 11 days of training and biweekly coaching from PMTO-certified staff. The intervention was deployed in 2-hour weekly sessions for 14 weeks. Children were not involved in the intervention, but 80% of families had 2 parents participating in the program. In an intent to treat analysis, controlling for observed baseline parenting skills, the ADAPT intervention resulted in increased effective parenting skills at 1 year compared to the usual care control ( $p = 0.01$ ) with a moderate effect size (SMD = 0.35).

### *Parental Stress*

In total, 2 studies assessed the outcome of parental stress: a low ROB RCT<sup>43</sup> and a serious ROB<sup>46</sup> uncontrolled before-after study. Both used a virtual implementation mode and included the child in the parenting skills training interventions. Results were mixed on the outcome of parental stress.

#### *Virtual individual family therapy intervention*

One low ROB RCT<sup>43</sup> compared a trauma-informed family therapy program (Families OverComing Stress-Early Childhood; FOCUS-EC) among 200 military-connected families with young children (aged 3-6 years) who had at least 1 parent who had served post 9/11. FOCUS-EC is an adaptation of an evidence-based family-centered intervention, Families OverComing Stress (FOCUS), which has been implemented widely throughout US military installations.<sup>45,49,50</sup> FOCUS-EC was delivered by a doctoral- or master's-prepared mental health provider over videoconferencing and included 6 modules delivered in 60–90-minute sessions over 4–10 meetings. Children were involved in some portions of the virtual family counseling when modules were focused on skills practice and fostering emotion regulation through playtime, and most families (75%) had both parents participate in the program. Parents randomized to the control condition had access to an online parent education program. While the intervention did not significantly reduce parental stress compared to the control, parents in the FOCUS-EC reported greater reductions in PTSD symptoms at 6 months compared to the online parent education program ( $p < 0.05$ ).

The other study to assess parental stress<sup>46</sup> was an uncontrolled before-after study (serious ROB) among 41 Veterans with a child aged 3 to 9 years. The Online Parenting Pro-Tips (OPPT) program used web-based educational modules on child development, positive parenting skills, and challenges related to military families plus 6 60-minute psychotherapy sessions delivered by videoconferencing every 2 weeks by master's-level social workers or counselors. About 30 minutes of these virtual sessions were devoted to therapist observations and live coaching via “bug in ear” feedback of Veteran and child interactions and produced significant reductions in parental stress at end of treatment (SMD = 0.98,  $p = .0003$ ).

### *Parental Emotion Regulation*

In total, 2 studies assessed the outcome of parental emotion regulation: an RCT (some concerns ROB) and a controlled before-after study (moderate ROB). Both used an in-person multi-family group and reported mixed results on parental emotion regulation.

*In-person multi-family group intervention*

The RCT of the ADAPT intervention<sup>47,51</sup> (described above) conducted a secondary analysis to assess the impact of the parenting program on emotion regulation problems via pre-post ANCOVA models separately for mothers and fathers. Mothers randomized to the ADAPT intervention reported a small but significant impact on emotion regulation problems at 12 months post-baseline ( $p < 0.05$ ). For fathers, the results were not significant. The other identified study to report on parental emotion regulation was a controlled before-after study (moderate ROB) among 76 military-connected families (activity duty and Veterans) with a history of deployments and with at least 1 child under the age of 8. The parenting intervention, “Strong Military Families,” was adapted from another parenting program for high-risk mothers.<sup>52</sup> The Strong Military Families program consisted of 10 multi-family group sessions and up to 3 individual parent sessions over 10-12 weeks. Children participated in a concurrent playgroup, and group facilitators provided supported opportunities for parent-child interactions at the beginning and end of each session. Parents in the comparison condition were given a written self-help guide of the intervention. The multi-family group intervention resulted in significant improvements in some positive aspects of emotion regulation (positive affect:  $p < 0.05$ , emotion responsiveness:  $p < 0.05$ ) but did not significantly impact expression of negative emotion regulation (*eg*, anger, irritability, withdrawal, hostility) as assessed by observations of parent-child interactions.

**Summary of Parent-level Results**

The included studies show mixed results on key parent-level outcomes. For parenting skills, the only study that assessed this outcome demonstrated moderately sized improvements that were significant. Yet, for all other parenting outcomes, results were mixed either between studies (*ie*, 2 parental stress studies and only 1 reporting significant results) or within studies (*ie*, emotion regulation improved for mothers but not fathers; positive aspect of emotion regulation improved but negative aspects did not), which limits the strength of conclusions about program effects by different interventions.

**Family-level Outcomes**

In total, 3 of the 5 studies assessed family function, and no studies assessed family conflict. Family-level outcomes are organized by family functioning and further refined by intervention type.

*Family Functioning*

The 3 studies that assessed family functioning included an RCT of low ROB,<sup>43</sup> a repeated measures design,<sup>45</sup> and an uncontrolled before-after study<sup>46</sup> (both serious ROB). These studies used 2 different intervention modalities: individual family counseling (2 studies; 1 virtual and 1 in-person) and virtual home visits with live parent coaching (1 study). All 3 studies directly involved children in some aspect of the parenting program. Both nonrandomized designs reported significant impacts on family function, while the low ROB RCT reported improvements for mothers only.

*Individual family therapy intervention*

One low-ROB RCT<sup>43</sup> compared FOCUS-EC, a virtually delivered trauma-informed family therapy program (described above) among 200 military-connected families, to a control

condition that had access to an online parent education program. While the FOCUS-EC intervention produced greater decreases in parent-child dysfunctional interactions via parent reports at all 3 assessments (3, 6, and 12 months), the results were only significantly improved for mothers at 12 months post-baseline. Fathers did not report significant differences in family functioning at any follow-ups compared to controls.

The other individual family therapy intervention<sup>45</sup> used an in-person modality and was assessed via repeated-measures studies (serious ROB). This study was conducted through military installations in Japan and the United States among 2,615 unique families ( $N = 3,499$  parents; 3,810 children) who had at least one child aged 3-17. The Families OverComing Under Stress (FOCUS) intervention was deployed through 8 sessions that ranged from 30-90 minutes and included a mix of parent-only (3 sessions), child-only (2 sessions), and family sessions (3 sessions) and was delivered by a master's- or doctoral-level mental health provider. Overall, both civilian and military parents reported a decrease in unhealthy family functioning ( $p < 0.001$ ) and lower odds of meeting the threshold for unhealthy family functioning (odds ratio [OR] = 0.50, 95% CI [0.43, 0.58]).

#### *Family home visitation with live coaching intervention*

The other study<sup>46</sup> to assess family function was an uncontrolled before-after study (serious ROB) among 41 Veterans with a child aged 3–9 years. The OPPT intervention used a virtual home visits model with live parent coaching (described above) and reported significant reductions in family dysfunction at end of treatment (SMD = 0.53,  $p = 0.03$ ).

### **Summary of Family-level Results**

Only 3 studies reported family functioning outcomes; these intervention approaches all directly involved children in the parenting program. These 3 studies reported significant impacts on family function. No studies assessed family conflict.

### **Child-level Outcomes**

Three of the 5 studies identified assessed the impact of parenting skills training programs on child behaviors among military-connected families. These included 1 RCT<sup>43</sup> (low ROB), 1 repeated measures study<sup>45</sup> (serious ROB), and 1 uncontrolled before-after study<sup>46</sup> (serious ROB). Child-level outcomes are further refined by intervention type.

#### *Child Behaviors*

##### *Individual family therapy intervention*

Two studies assessed the impact of individual family therapy on child behaviors. The first was a low ROB RCT<sup>43</sup> that compared FOCUS-EC, a trauma-informed family therapy program (described above) among 200 military-connected families, to a control condition that had access to an online parent education program. Compared to an online parent education program, the FOCUS-EC intervention produced greater decreases in parental reports of difficult child behaviors at 12 months post-baseline ( $p < 0.01$ ), though the effect size was small (SMD = 0.20). When parents were assessed separately, only mothers ( $N = 194$ ) reported significant improvements in difficult child behaviors (SMD = 0.30,  $p < 0.05$ ). Observational measures of child behaviors yielded similar results with FOCUS-EC demonstrating significantly greater



increases in positive child behavior (SMD = 0.40,  $p < 0.01$ ) in the total sample ( $N = 349$ ), but these were only significant for mothers at 12 months (SMD = 0.42,  $p < 0.001$ ).

The second individual family therapy intervention,<sup>45</sup> FOCUS, used a repeated measures study design (serious ROB). This study was conducted through military installation with 2,615 unique families (3,499 parents; 3,810 children). Among all children, the odds of parent-reported child difficulties (OR = 0.22, 95% CI [0.19, 0.25]) and difficulties with pro-social behaviors (OR = 0.46, 95% CI [0.41, 0.52]) significantly dropped at 6-month follow-ups.

*Family home visitation with live coaching intervention*

The other study to assess the impact of parenting programs on child behaviors was an uncontrolled before-after study (serious ROB) among 41 Veterans with a child aged 3–9 years.<sup>46</sup> The OPPT intervention used a virtual home visits model with live parent coaching. At end of treatment, parents reported fewer problem behaviors (SMD = 0.87,  $p = 0.03$ ). Also, the frequency of clinically elevated parent ratings of problem behaviors ( $p = 0.02$ ) and intensity of child behaviors ( $p = 0.03$ ) showed significant improvement post-treatment.

**Summary of Child-level Results**

Only 3 studies reported on the impact of parenting programs on child behaviors (Table 4). Children were directly involved in all interventions. All 3 studies reported significant impacts on child behaviors. Two studies had serious ROB considerations.

**Table 4. Pattern of Outcomes Assessing Effectiveness of Behavioral Parenting Programs Among Military-connected Families**

Intervention Type <sup>a</sup>	Parent Outcomes					Family Outcomes		Child Outcomes
	Parenting Skills	Parent Knowledge	Parent Self Efficacy	Parent Stress	Emotion Regulation	Family Functioning	Family Conflict	Child Behavioral Problems
<b>Study</b>								
<b>KQ1: Populations With Parental Histories of Military Service</b>								
<b><i>In-person Individual Family Intervention</i></b>								
Lester, 2016 <sup>45</sup>						■		■
<b><i>In-person Multi-family Group Intervention</i></b>								
Gewirtz, 2018 <sup>47b</sup>	■				■			
Julian, 2018 <sup>44</sup>					■			
<b><i>Virtual Individual Family Intervention</i></b>								

Intervention Type <sup>a</sup>	Parent Outcomes				Family Outcomes		Child Outcomes	
	Parenting Skills	Parent Knowledge	Parent Self Efficacy	Parent Stress	Emotion Regulation	Family Functioning	Family Conflict	Child Behavioral Problems
Mogil, 2021 <sup>43b</sup>								
<b>Virtual Family Home Visitation With Live Coaching Intervention</b>								
Riegler, 2020 <sup>46</sup>								

Notes. <sup>a</sup> Light blue shading indicates an outcome was reported in the study. Dark blue shading indicates a statistically significant outcome.

<sup>b</sup> Randomized trial design.

## KEY QUESTION 4: WHAT ARE INTERVENTION CHARACTERISTICS (eg, FORMAT, DOSE, CONTENT) OF THE IDENTIFIED EFFECTIVE PARENTING SKILLS TRAINING INTERVENTIONS?

### Key Points

- Of the 8 studies that reported on impact of parenting training programs on the uptake of parenting skills, 71% ( $N = 6$ ) demonstrated significant improvements in parenting skills.
  - The majority of these studies were conducted among families with a parental history of SMI ( $N = 5$ ).
- Half of the identified effective programs were delivered in person. Group-based formats were the most common mode of intervention delivery.
- Only 2 of the 6 programs involved direct interactions with the child during a portion of the parenting program.
- All parenting skills interventions used manualized protocols.
  - Most programs incorporated homework assignments to reinforce parenting skills.
  - The most common areas covered in the parenting programs were discipline and behavior management strategies (5 studies) and fostering positive interactions with the child(ren) (5 studies).
- Adherence was high for the interventions delivered in person, with both group-based interventions having participation rates of over 70%.
  - Of note, use of a military-connected facilitator led to greater program participation (73.25% vs 59.78% of sessions) in 1 study.
  - In studies that assessed participant satisfaction, ratings were all very favorable.

## Detailed Description

Of the 8 studies that assessed parenting skills, 6 studies, representing a total of  $N = 658$  families, reported significant changes in parenting skills. Only 1 of the 5 studies meeting eligibility for KQ3 (*ie*, families with a military history) assessed the impact of a parenting skills program on parenting skills; this study demonstrated a positive impact on uptake of parenting skills in an RCT<sup>47,53</sup> of 336 families with at least 1 activity duty parent. Among the 9 studies meeting eligibility for KQ2 (*ie*, parental history of SMI), 7 assessed the impact of the parenting training program on parenting skills. Of these 7 studies, 5<sup>29,30,33,37,38,42</sup> (71%) reported significant effects of parenting training programs on positive parenting skills among parents with a history of serious mental illness: 3 RCTs, 1 controlled before-after study, 1 uncontrolled before-after study, and 1 repeated measure study. Three studies were found to be some concerns/moderate ROB,<sup>30,33,38,54</sup> and 3 serious/high ROB<sup>29,32,37</sup> (designation term depending on instrument used). Common sources of ROB for RCTs relevant to this KQ included issues with randomization, outcome measures, and selection of results reported. For other study designs, sources of bias included confounding, selection of participants, and missing data. (Refer to Appendix F for details of the ROB assessments.)

The intervention delivery mode varied widely among these 6 studies. Half of the studies used a virtual deployment method (2 web-based, self-directed;<sup>32,37</sup> 1 online chat group<sup>33</sup>) and half used a group-based format.<sup>30,33,38,54</sup> For those delivered in person, 1 used a home-based program<sup>29</sup> and 2 studies<sup>30,38,47,53</sup> focused on in-person multi-family group interventions. While none of these interventions were delivered by health care providers, 4 studies used a trained professional, which included peers, health promotion workers, graduate students, and non-licensed facilitators, to deliver the intervention. The other 2 studies<sup>32,37,42</sup> were self-directed internet-based programs with no interventionists to deliver the content. One of these online programs<sup>32</sup> offered access to a listserv co-moderated by a parent with mental illness and a mental health professional. For synchronous parenting skills interventions, sessions ranged in length from 30-minute<sup>42</sup> to 2-hour<sup>33</sup>-long sessions over the course of 8<sup>33</sup> to 14<sup>47,53</sup> weeks. The 2 asynchronously self-directed internet-based studies<sup>32,37,42</sup> ranged from 10 weeks to 3 months (Table 5).

**Table 5. Characteristics of Effective Parenting Skills Training Programs**

Intervention Type	Target Population (n)	Intervention Name (Parenting Skills Training Program)	Intervention Techniques	Child Involvement	Provider Type	Dose
Study and Design						
<b>KQ1: Populations with Parental Histories of Military Service</b>						
<b><i>In-person Multi-family Group Intervention</i></b>						
Gewirtz, 2018 <sup>47,53</sup>  RCT	National Guard and Reserve Families with 1 parent who had deployed to recent conflicts (N = 336 families; 608 parents)	After Deployment, Adaptive Parenting Tools (ADAPT) (Parent Management Training Program – Oregon model) <sup>48</sup>	Rehearsal, role playing, or practice, curriculum or manual	No	Trained peer/lay person facilitator, including military-connected facilitator	Fourteen weekly 2-hour sessions
<b>KQ2: Populations with Parental Histories of Serious Mental Illness</b>						
<b><i>Home-based Self-help Workbook With Facilitated Engagement</i></b>						
Wolfenden, 2022 <sup>29</sup>  Repeated measures study	Schizophrenia spectrum disorder (N = 10)	Triple P (Positive Parenting Program) <sup>39,40</sup>	Curriculum or manual, home-based components, homework, modeling	Observed parent-child interactions during home visits	Non-licensed trained facilitator (includes graduate students)	Ten sessions delivered weekly over 10–14 weeks, lasting 45–60 minutes
<b><i>In-person Multi-family Group Intervention</i></b>						
Serravalle, 2021 <sup>30,38</sup>  Controlled before-after study	Bipolar disorder (N = 55 families)	Reducing Unwanted Stress in the Home (RUSH) Parenting program: How to behave so your children will too! <sup>55</sup>	Curriculum or manual, observations of parent-child interactions NOT at home	Separate, but concurrent child sessions	Non-licensed trained facilitator (senior graduate students in clinical psychology)	Parents: 12 2-hour sessions over 12 weeks  Child sessions were 1 hour long, with 5 individualized bi-weekly booster calls that lasted 15 minutes each

Intervention Type	Target Population (n)	Intervention Name (Parenting Skills Training Program)	Intervention Techniques	Child Involvement	Provider Type	Dose
<b>Virtual Group-based Chat Intervention</b>						
van der Zanden, 2010 <sup>33</sup>  Uncontrolled before-after design	Parents with mental illness (N = 48)	KopOpOuders, translated from Dutch: Chin Up, Parents  (No named parenting skills training program)	Curriculum or manual, homework	No	Trained health promotion workers	Eight 90-minute weekly sessions
<b>Web-based Self-directed Intervention</b>						
Jones, 2015 <sup>37</sup>  RCT	Bipolar Disorder (N = 78)	Triple P (Positive Parenting Program) <sup>39,40</sup>	Curriculum or manual, homework	No	Electronic/non-human	Ten weeks
Kaplan, 2014 <sup>32</sup> / O'Shea, 2019 <sup>42</sup>  RCT	Mothers diagnosed with schizophrenia spectrum or mood disorder (N = 60)	Parenting Internet Education  (No named parenting skills training program)	Curriculum or manual, homework	No	Electronic/non-human	Three months of 30-minute weekly sessions

## Intervention Skills and Techniques

All 6 parenting skills interventions followed manualized protocols, covering pre-specified curricula. All but 1 study incorporated homework assignments to complete between sessions to reinforce parenting skills. Three of the interventions were adapted from an evidence-based parent management training model. Two studies<sup>29,37,56</sup> were based on the Triple P Positive Parenting Program,<sup>39,40</sup> and 1<sup>47,53</sup> on the Parent Management Training-Oregon Model (PMTO).<sup>47,48,53</sup> One intervention was based on a program in the lay press.<sup>55</sup> Based on a coding scheme used in a CDC-sponsored systematic review<sup>5</sup> of parenting components associated with parenting training program effectiveness, we mapped elements of the 6 programs to the 8 content components commonly used in parenting skills training programs. (See Appendix D for a description of these components.) Most studies focused on interventions that developed parental skills or knowledge in 4 key areas: discipline and behavior management (5 studies), positive interactions with child (5 studies), promoting children's social skills or prosocial behavior (4 studies), and emotion communication (5 studies). Although not as broadly covered across studies, other skills that were highlighted in these studies' interventions included child development knowledge and care, disciplinary communication, and promoting children's cognitive or academic skills. These domains are outlined in the parenting skills and knowledge matrix (Table 6).

None of the virtual interventions included direct contact with children. Two of the 3 in-person studies directly involved the children of the parent participants.<sup>29,30,38</sup> The study by Wolfenden et al<sup>29</sup> incorporated an in-home visit for parent-child observations, while Serravalle et al<sup>30,38</sup> incorporated parent-child observations outside of the home and 12 in-person weekly group

session for children that were run concurrently with the parents-only multi-family group sessions.

**Table 6. Parenting Skills and Knowledge Components Across the Effective Parenting Interventions**

Study	Child Development Knowledge and Care	Positive Interactions with Child	Responsiveness, Sensitivity, and Nurturing	Emotion Communication	Disciplinary Communication	Discipline and Behavior Management	Promoting Child Social Skills or Prosocial Behavior	Promoting Child Cognitive or Academic Skills	Total Number of Components
Gewirtz, 2018 <sup>47,53</sup>	N	Y	Y	Y	Y	Y	N	Y	6
Jones, 2015 <sup>37</sup>	N	Y	N	Y	Y	Y	Y	N	5
Kaplan, 2014 <sup>32</sup> / O'Shea, 2019 <sup>42</sup>	Y	N	N	N	N	Y	N	Y	3
Serravalle, 2021 <sup>30,38</sup>	N	Y	N	Y	Y	Y	Y	N	5
van der Zanden, 2010 <sup>33</sup>	Y	Y	N	Y	N	Y	Y	N	5
Wolfenden, 2022 <sup>29</sup>	Y	Y	Y	Y	N	N	Y	N	5

### Implementation Factors

We also explored selected implementation factors related to engagement: recruitment techniques, intervention adherence, and participant satisfaction with parenting programs.

#### Recruitment Techniques

In general, recruitment techniques focused on potential participants within settings that were frequented by the population of interest, such as parent support groups, family picnics, mental health service centers, reintegration events, or health care clinics. The most common recruitment techniques included advertisements in newsletters, email, magazine postings, and websites. Other common recruitment methods included outreach to local support meetings and referrals from service providers (*ie*, general practitioners, social services, homecare services). One study<sup>37,56</sup> with a web-based intervention emphasized online recruitment methods. For military-

connected families, recruitment focused on reintegrating events for military families, through collaboration with local VA health care centers and Veteran service organizations deployment.<sup>57</sup>

### *Adherence to Intervention*

Only 4 of the studies reported on adherence to the intervention. In the ADAPT intervention,<sup>47,53,57</sup> an in-person group intervention, 75.4% of participants attended at least 1 in-person group session, and 70.7% of sessions were attended by at least 1 parent. Engagement in the intervention was enhanced when the group sessions were led by a military-connected facilitator (73.25% vs 59.78% sessions,  $p = 0.01$ ). The other in-person group intervention also reported high rates of adherence to the intervention. In a proof-of-concept study of a multi-family group for parents with bipolar disorder and their children, 76% of families completed the 12-week program.<sup>30,38</sup> In contrast, an online chat group intervention reported low levels of intervention engagement as measured by website usage and completed sessions.<sup>33</sup> In total, 57% of participants completed at least half of the sessions and only 20% attended all 8 weekly sessions. The remaining intervention was a home-based parenting program with home visits assessed in a small, repeated measures study<sup>29</sup> of 10 parents with psychosis. In sum, 50% of the parents with psychosis completed all 10 weekly sessions.

### *Participant Satisfaction*

Three studies<sup>29,33,54,57</sup> reported participant satisfaction with the intervention. Overall, parent satisfaction with parenting skills training interventions was very high. In the ADAPT multi-family group intervention among military families,<sup>54,57</sup> participants reported high satisfaction with group sessions (mean = 3.44, SD = 0.48; range: 0 to 4). The online group chat intervention<sup>33</sup> also reported high program satisfaction (mean = 7.8; SD = NR, range: 1–10). The final study<sup>29</sup> assessed participant satisfaction both quantitatively and qualitatively with a home-based program. Qualitative findings were overwhelmingly positive, though participants noted literacy issues with the self-help materials. Quantitative<sup>29</sup> evaluations were also favorable. Parents rated overall satisfaction with the program very high with an average score of 95% (range of participant scores: 76%–100%).

## DISCUSSION

We identified 14 unique studies, with most of these (64%;  $N = 9$ ) being relevant to KQ2 (parent with a history of SMI). Half of the studies were RCTs, with only 1 rated as low ROB. The other studies were a mix of nonrandomized design with 3 being rated as having serious ROB concerns. In total, the studies in this review encompassed 5 major intervention types (*ie*, multi-family groups, individual family therapy, home visitation with live coaching, chat-based virtual groups, and self-directed programs) with a slim majority (57%) being delivered in person. The majority of included studies took a family-system perspective and involved more than 1 member of the family (*eg*, spouse/co-parent, child); most ( $N = 8$ ) directly involve children in the deployment of the behavioral parenting program. Of the 14 included studies, 8 studies reported on the uptake of parenting skills; 71% ( $N = 6$ ) demonstrated significant improvements in parenting skills and were included in KQ4 on intervention characteristics. Of note, we did not identify any studies that recruited families in which 1 of the parents was a survivor of adult sexual trauma. Moreover, none of the included studies captured sexual trauma histories in the included samples.

To provide context for the findings described in this report, we conducted COE ratings for outcomes prioritized by VA operational partners from the VA Office of Mental Health and Suicide Prevention: parenting skills, self-efficacy in parenting, parental stress, emotion regulation of parent, and family functioning/conflict. These COE ratings reflect the degree of confidence we have in the summary findings. We conducted our COE assessments by intervention type (*eg*, in-person group) across the KQ1 and KQ2 outcomes and presented findings for randomized and observational studies separately. Overall, we note that while the effect estimates were consistent in showing a benefit of behavioral parenting programs, our confidence assessments were frequently downgraded because of ROB concerns. We also downgraded studies for indirectness if the tested behavioral parenting program did not align with elements VA operational partners indicated would enhance feasibility of VA implementation (*eg*, direct involvement of child) or if the study was conducted in a population that was less applicable to the Veteran population (*eg*, only conducted among parents with a SMI less prevalent in the Veteran population).

### **KQ1 Key Findings and Certainty of Evidence: Parents with a History of Sexual Trauma**

We identified no eligible studies.

### **KQ2 Key Findings and Certainty of Evidence: Parents with a History of Serious Mental Illnesses**

In total, we identified 9 eligible studies ( $N = 904$  families) that assessed parenting skills programs among parents with SMI. Most studies had small sample sizes, with 4 having high/serious ROB concerns. The dominant SMI population assessed across these studies was parental history of MDD. Parenting programs used 4 main delivery methods: in-person multi-family groups, in-person home visits with a self-directed workbook, online chat-based groups, and web-based self-directed modules. A slim majority (55%) cited an evidence-based parenting program as the basis for their intervention, and most did not directly involve the child as part of the parenting skills training program. Yet, of the interventions delivered in person, all involved another family member (*ie*, spouse, child).



The overall trend was towards positive changes in parent, child, and family outcomes; yet not all achieved statistical significance. The lack of significance might be due, in part, to insufficient power due to small sample sizes in most studies.

The majority (69%; 9 of 13 reported outcomes) of parent-centered outcomes assessed across these studies reported significant effects of behavioral parenting programs among families with at least 1 parent with SMI. Even among those that were not significant, studies trended towards improvements. While a smaller percentage of studies reported significant outcomes for the prioritized family- (40%; 2 of 5 studies) and child-centered outcomes (57%; 4 of 7 studies), all studies reported some improvements in these outcomes.

Across nearly all outcomes, COE ranged from low to very low (Table 7). Ratings were commonly downgraded when interventions contained elements VA operational partners indicated would make VA implementation less feasible (*ie*, home-based, involved children, chat-based only) or were conducted in populations with conditions less prevalent than those found among Veterans with mental health conditions (*eg*, assessed only among parents with bipolar disorder vs parents with a history of MDD). Also, outcomes were commonly downgraded due to ROB issues. The majority of included RTCs were rated as high ROB, and most of the included studies were observations with ROB challenges. The only outcome to be rated as moderate COE was parental stress assessed in a low ROB RCT of a web-based self-directed program.

**Table 7. Certainty of Evidence for Parenting Skills, Parental Self-efficacy, Parental Stress, and Family Functioning Among Parents With a History of Serious Mental Illness**

Outcome	Number of Studies	Findings	Certainty of Evidence (Rationale)
<i>Group-based In Person</i>			
Parental skills	1 RCT (25 patients)	Positive parenting: $F = 0.3$ ( $p > 0.10$ ), hostile parenting: $F = 0.0$ ( $p > 0.10$ ), consistency: $F = 2.6$ ( $p > 0.10$ );	<b>Low certainty</b> (downgraded for serious ROB and serious imprecision)
	1 observational study (66 patients)	Parental negativity: $b = -0.17$ (SE 0.04) ( $p > 0.001$ ); Wald $Z = 16.08$ ( $p > 0.001$ ) Parental positivity: Wald $Z = 22.17$ ( $p < 0.001$ )	<b>Very low certainty</b> (downgraded for serious ROB, serious indirectness, and serious imprecision)
<i>Group-based Chat Only</i>			
Parenting skills	1 observational study (28 patients)	Laxness: $t = 2.90$ , $d = 0.52$ , $p = 0.007$ ; Overactivity: $t = 4.02$ , $d = 0.48$ , $p = 0.000$	<b>Very low certainty</b> (downgraded for serious ROB, serious

Outcome	Number of Studies	Findings	Certainty of Evidence (Rationale)
indirectness, and serious imprecision)			
<i>Home-based</i>			
Parenting skills	1 observational study (5 patients)	Total parenting: $t = 8.9$ , $d = 3.28$ , $p = 0.003$	<b>Very low certainty</b> (downgraded for serious ROB, serious indirectness, serious imprecision)
<i>Web-based Self-directed</i>			
Parenting skills	3 RCTs (267 patients)	Change in total parenting: Difference in slope ranged from $0.03$ ( $p = 0.24$ ) to $0.94$ ( $p < 0.001$ ) and $t$ -test $-1.7$ ( $p = 0.1$ ) $d = 0.49$ to $-1.25$ ( $p = 0.23$ ) $d = 0.26$	<b>Very low certainty</b> (downgraded for serious ROB, serious indirectness, and serious imprecision)
<i>Group-based In Person</i>			
Parenting self-efficacy	1 RCT (25 patients)	Sense of parenting competence: $F = 3.7$ , $df 30$ , ( $p = 0.06$ )	<b>Low certainty</b> (downgraded for serious ROB, serious imprecision)
<i>Group-based Chat Only</i>			
Parenting self-efficacy	1 observational study (28 patients)	Incompetence: $t = 3.13$ , $d = 0.61$ , $p = 0.004$ , Competence: $t = 2.81$ , $d = 0.46$ , $p = 0.009$	<b>Very low certainty</b> (downgraded for serious ROB, serious indirectness, serious imprecision)
<i>Home-based</i>			
Parenting self-efficacy	1 observational study (5 patients)	Behavior: $t = -8.9$ , $d = 4.24$ , $p = 0.003$ , setting: $t = 9.6$ , $d = 3.19$ , $p = 0.002$	<b>Very low certainty</b> (downgraded for serious ROB, serious indirectness, and very serious imprecision)
<i>Web-based Self-directed</i>			
Parenting self-efficacy	2 RCTs (228 patients)	Parenting confidence: difference in slope $-1.17$ (SE $0.41$ ), (95% CI $[-1.98, -0.37]$ ) $p < 0.01$	<b>Very low certainty</b> (downgraded for serious ROB, serious inconsistency, serious

Outcome	Number of Studies	Findings	Certainty of Evidence (Rationale)
		Parenting sense of competence: $t = 0.56$ , $d = 0.19$ , $p = 0.58$	indirectness, and serious imprecision)
		HFPI parental efficacy: $t = -1.39$ , $d = 0.24$ , $p = 0.17$	
<i>Web-based Self-directed</i>			
Parental Stress	1 RCT (97 patients)	Parenting stress index: Difference in slope: 1.94 (SE 0.77) (95% CI [0.42, 3.45]), $p = 0.01$	<b>Moderate certainty</b> (downgraded for serious indirectness)
<i>In-person Individual + Group</i>			
Family conflict and functioning	1 observational study (71 patients)	Parent-child-relationship inventory for children: pre- and post-test ratings of the parent-child relationship did not significantly differ between both groups on any of the subscales (all $p > .04$ ) Care subscale: $d = 0.18$ (95% CI [-0.32, 0.69]) Control subscale: $d = -0.08$ (95% CI [-0.58, 0.43]) Limitations subscale: $d = -0.48$ (95% CI [-1.00, 0.02]) Confidence subscale: $d = 0.34$ (95% CI [-0.17, 0.85])	<b>Very low certainty</b> (downgraded for serious ROB, serious indirectness, and serious imprecision)
<i>In-person Group-based</i>			
Family conflict and functioning	1 RCT (25 patients)	Parental conflict with other parent effect estimate: $F = 1.5$  Family conflict scale: effect estimate = 0.4  Family assessment device: effect estimate $F = 6.6$ , $p < 0.05$	<b>Low certainty</b> (downgraded for serious ROB, and serious imprecision)
	1 observational study (66 patients)	Dyadic mutuality: Wald $Z = 22.18$ ( $p < 0.001$ ), $b = 0.15$ , SE = 0.04 ( $p < 0.001$ )	<b>Very low certainty</b> (downgraded for serious ROB, serious indirectness, and serious imprecision)

Outcome	Number of Studies	Findings	Certainty of Evidence (Rationale)
<i>Web-based Self-directed</i>			
Family conflict and functioning	2 RCT (228 patients)	Family coherence: Difference in slope: 0.05 (SE 0.10), $p = 0.62$ (95% CI [-0.14, 0.23])  Family coping inventory: $t = -0.2$ , $d = 0.07$ , $p = 0.84$	<b>Very low certainty</b> (downgraded for serious ROB, serious indirectness, serious imprecision)

### KQ3 Key Findings and Certainty of Evidence: Parents with a History of Military Service

In total, we identified 5 studies ( $N = 3,268$  families;  $N = 4,772$  participants) that assessed the impact of parenting skills training interventions among families with a history of military service. Most studies were nonrandomized designs ( $N = 3$ ) and were conducted among families with at least 1 active-duty parent. Parenting programs used 3 main delivery methods: individual family therapy (2 studies), multi-family groups (2 studies), and virtual home visits with live coaching (1 study). Most studies cited an evidence-based parenting program as the basis for their intervention approach and directly involved the child as part of the parenting skills training program. Spousal involvement was also common in these interventions.

The overall trend was towards improvements in key parent, family, and child outcomes, though not all were significant. Effect sizes were generally modest. We observed no clear pattern across intervention types for key outcomes, but these outcomes were reported infrequently across the included studies. No studies reported on the impacts on parental self-efficacy or parenting knowledge. Yet our confidence assessments were frequently downgraded. Across parent-centered outcomes, the COE ranged from moderate to very low (Table 8). Reasons for downgrading COE were ROB issues and indirectness of the population (eg, National Guard and Reserve soldiers and spouses only). We also downgraded on indirectness for interventions with direct child engagement (ie, virtual home visit model) and those that were conducted in observational studies with considerable ROB issues. For family-focused outcomes, the COE ranged from moderate to very low. Both interventions involved models that directly engaged children and/or were fashioned after a home visit model. Also, there were ROB issues; there was serious ROB in the uncontrolled before-after study.

**Table 8. Certainty of Evidence for Parenting Skills, Parental Stress, and Parental Emotion Regulation Among Military-connected Families**

Outcome	Number of Studies	Findings	Certainty of Evidence (Rationale)
<i>In-person Group</i>			
Parenting skills	1 RCT (336 patients)	B = 0.16, $p < 0.01$ Change in baseline to 12-month follow up latent construct of observed parenting	<b>Low certainty</b> (downgraded for serious ROB, and serious indirectness)
<i>Virtual Individual</i>			
Parental stress	1 RCT (349 patients)	Change in baseline to 12 months = 1.43, $d = 0.20$ , $p > 0.05$	<b>Moderate certainty</b> (downgraded for serious indirectness)
<i>Virtual Home Visitation Live Coaching</i>			
Parental stress	1 observational study (22 patients)	t test= $t(19) 4.36$ , $p = 0.0003$ , $d = 0.98$	<b>Very low certainty</b> (downgraded for serious ROB, serious indirectness, and serious imprecision)
<i>In-person Group</i>			
Parental emotion regulation	1 RCT (336 patients)	Mothers 12 months post-baseline: ( $F(1, 230) = 4.43$ , $p < 0.05$ ); for fathers, the results were not significant	<b>Low certainty</b> (downgraded for serious ROB, and serious indirectness)
Parental emotion regulation	1 observational study (107 patients)	Emotional responsiveness: Change in $R^2 = 0.09$ , $p < 0.05$ Positive affect effect: change in $R^2 = 0.02$ , $p > 0.05$ Withdrawn: $R^2 = 0.00$ , $p > 0.05$ Irritability: change in $R^2 = 0.04$ , $p > 0.05$	<b>Very low certainty</b> (downgraded for serious ROB and serious imprecision)

Outcome	Number of Studies	Findings	Certainty of Evidence (Rationale)
<i>In-person Individual</i>			
Family functioning/ conflict	1 observational study (3,499 patients)	Decrease in unhealthy family functioning: $(0.19 \pm 0.01, p < 0.0001)$	<b>Very low certainty</b> (downgraded for serious ROB and serious indirectness)
<i>Virtual Home Visitation Live Coaching</i>			
Family functioning/ conflict	1 observational study (22 patients)	Family functioning $t$ test 2.41 ( $p = 0.03$ ), $X^2=2.15$ , $d = 0.53$	<b>Very low certainty</b> (downgraded for serious ROB, serious indirectness, and serious imprecision)
<i>Virtual Individual Counseling</i>			
Family functioning/ conflict	1 RCT (349 patients)	Dysfunctional parenting: Change from baseline to 12 months = 1.12, $d = 0.20$ , $p > 0.05$ Observed parent affect and behavior change from baseline to 12 months: $-0.38$ , $d = 0.39$ , $p < 0.001$	<b>Moderate certainty</b> (downgraded for serious indirectness)

## KQ4 Key Findings: Characteristics of Effective Parenting Programs

In total, 71% (6 of 8 studies) demonstrated significant improvements in parenting skills. The majority of these studies were conducted among families with a parental history of SMI ( $N = 5$ ). Half of the identified effective programs were delivered in person. Group-based formats were also the most common mode of intervention delivery. Only 2 programs involved direct interactions with the child during portions of the parenting program. Generally, adherence was high for the interventions delivered in person, with both group-based interventions having participation rates of over 70%. In studies that assessed participant satisfaction, ratings were all very favorable.

## CLINICAL AND POLICY IMPLICATIONS

Effective parenting interventions benefit not only parents but also children and families as a whole. Given that parent-child interactions are reciprocal, in that parental mental health impacts children and children's emotions and behaviors impact parents, parent-focused programs are best viewed from a family-system perspective. VHA service expansion to integrate spouse caregivers into service provision provides evidence of the acknowledgement of a family-systems perspective to enhance capacity directly for the Veteran. Use of a well-established parenting

intervention—such as Triple P, the most commonly used parenting intervention in the reviewed studies—is most likely to yield significant outcomes. Adapting these programs for Veteran parents who are vulnerable to high levels of stress could be a beneficial way to target specific population needs while building off proven strategies.

Parenting skills programs will be most beneficial when parents engage in the parenting program and practice positive parenting skills with their children.<sup>58</sup> Further, programs require a commitment of time (*eg*, at least weekly sessions for 8-14 weeks in the reviewed studies). As such, accessibility and adherence are key factors to consider. Although no specific intervention format proved to be most beneficial in our review, the VHA should consider delivery methods that work best for busy families managing additional challenges such as parent mental illnesses, reintegration stressors, and traumas or moral injuries from experiences during military service.<sup>59,60</sup> Though telehealth sessions can have drawbacks (*eg*, they require a stable internet connection), virtual sessions have shown comparable outcomes to in-person parenting programs and may allow for greater accessibility and flexibility<sup>61,62</sup>: families can join without having to take time off work, arrange childcare, or travel to VHA offices, and additional family members can join and learn the parenting skills. Group-based services also offer a way to provide a service efficiently to more individuals,<sup>63</sup> and the effectiveness of group interventions was supported by our findings. Another potential benefit of group-based parenting interventions is that they may offer participating parents a broader network for social support from Veteran peers.

Given the high demand for mental health services among Veterans and the broader community, VHA can also consider the level of training needed to deliver effective parenting programs. For example, training peer facilitators in manualized parenting skills interventions expands the workforce of individuals who can provide this service. Also, use of peer interventionists can increase parenting program adherence. In one of the effective group-based interventions included in this review (ADAPT parenting program<sup>47</sup>), use of military-connected facilitators significantly improved engagement in the parenting programs. Veteran peer support specialists are currently employed by the VHA in mental health settings. These Veterans are trained to use their lived experience of mental health recovery to help patients with mental health concerns. Similarly, Veteran peer facilitators could be trained to provide evidence-based, manualized behavioral parenting programs within the VHA. Community care options could also be made available to Veterans and their families; yet many community parenting programs are oversubscribed, which could impact access to programs outside the VHA.<sup>64</sup> Additional drawbacks of community-based programs include disconnect from ongoing care provision at the VHA, as well as the possibility that these community programs may not be well attuned to the unique parenting needs of the Veteran population.

While self-directed online programs are a promising approach, the 3 included in this review demonstrated mixed results. In several of the studies included in this review, self-directed parenting programs served as the comparison condition and produced small impacts on promoting positive parenting practices or child behaviors.<sup>44,47</sup> Recent studies have empirically tested facilitated versus self-directed variants of Triple P and found that facilitated models significantly improve participant satisfaction, engagement and program completion, and parent and child outcomes.<sup>65</sup> Together, these findings suggest that parenting programs that provide guidance and support are needed to develop the competencies and confidence to improve parent, child, and family outcomes. Results from KQ4 underscore that even among families with additional stressors (*eg*, parents with SMI, military-connected families), behavioral parenting

programs can significantly improve parenting skills. These interventions do not need to directly engage with children to improve outcomes and can be offered in flexible group or virtual formats with facilitated engagement to offer support and guidance.

## PRIOR SYSTEMATIC REVIEWS

Several prior systematic reviews provide additional context for our findings. Waldrop et al<sup>66</sup> completed a systematic review of 11 studies examining the effectiveness of parenting interventions aimed at improving maternal-child interaction to understand if these interventions also address mental health symptoms (*ie*, depression, anxiety, stress) in mothers. Ultimately, the study found mixed results that parenting interventions improved maternal mental health symptoms for depression, anxiety, or stress.<sup>66</sup> Our review did not have parental mental health as an outcome of interest. Notably, the review by Waldrop et al did not identify any overlapping included articles with the results from our review. This is likely due to the differences in eligible study designs, interventions, and outcomes of interest. Specifically, our outcomes of interest were not limited to outcomes in the mother; we were also interested in parent, child, and family outcomes as well as intervention-related outcomes.

Including 18 studies, a systematic review by Branco et al<sup>67</sup> sought to identify studies of group-based structured parenting programs published between the years 2015 and 2019. This review limited the publication years because it was an update of a previous review.<sup>68</sup> They identified 14 unique parenting programs in a variety of high-, middle-, and low-income countries, with a substantial number of parenting programs in low-income countries as compared to the original systematic review.<sup>69</sup> Our review was limited to OECD countries, since results from reviews performed in OECD countries may be most applicable to findings in the United States. Like our review, Branco et al<sup>67</sup> reported that the majority of studies that assessed child outcomes improved problematic child behaviors. Also like our review, it showed promising results for group-based parenting programs globally, especially in the growing literature from low-income countries. These previous systematic reviews<sup>66,67,70</sup> provide important context for our review by indicating how broad and nuanced the exploration of the effectiveness of behavioral parenting programs can be. It is important to note that while these reviews generated unique findings, there was no overlap in included studies, which demonstrates the distinctiveness of our review. As such, our review expands upon previous systematic reviews to build important new insights regarding interventions to improve parenting outcomes among 2 key populations: (1) parents with additional stressors associated with parental histories of SMI or adult sexual trauma and (2) parents who served in the military.

## LIMITATIONS

Our review has several strengths, including a protocol-driven design, a comprehensive search designed in collaboration with an expert search librarian, inclusion of broad study designs, and careful quality assessment via established ROB tools. Both our review and the literature, however, have limitations. Overall, the number of identified studies for many outcomes was small, and most of the literature had design limitations that impacted study quality. We identified no studies conducted among populations with a history of adult sexual trauma, a key interest of the VA nominating partners. Further, while we conducted careful narrative synthesis, it is difficult to discern patterns in interventions with limited numbers of studies across any outcome. Other limitations are detailed below.



## Publication Bias

Given the small number of studies, statistical methods to detect publication bias are not useful. Another strategy, such as searching ClinicalTrials.gov for completed but unpublished studies, is not a particularly effective way to identify publication bias.<sup>71</sup> Thus, we did not conduct formal publication bias analysis.

## Study Quality

We were also limited by the existing literature. While we identified 7 RCTs, only 1 was low ROB. The remaining studies were nonrandomized designs, with nearly half having significant ROB considerations. Inadequate measurement and adjustment for key confounding variables, sample selection, and missingness impacted judgments of higher ROB across included studies.

## Heterogeneity

Behavioral parenting programs are a complex health intervention, which has intrinsic heterogeneity. This review included RCTs and a wide variety of observational study designs. Moreover, we included a variety of intervention types that ranged from highly individualized virtual home visit models with high degrees of child involvement to in-person multifamily groups that were led by peer facilitators with no direct child engagement. Further, we sought to synthesize information across 3 levels of outcomes (parent, child, family) encompassing 8 unique outcomes. Studies varied considerably in their measurement of these 8 outcomes (eg, researcher observations vs self-reports) and the methods used to test intervention effects. We sought to address this fundamental heterogeneity by clustering our narrative synthesis by type of outcome and then by intervention approach. Further, we gave more conceptual weight to higher quality designs to prioritize evidence from those studies.

## Applicability of Findings to the VA Population

Of the 14 included studies, 5 were conducted among military-connected families, which makes them more applicable to Veterans than studies in the general population of civilians. Yet only one of these studies was conducted solely among Veterans. The other 9 were conducted in populations with SMI. For our review, we defined SMI broadly, including studies that were conducted in populations selected for PTSD, to increase applicability to the Veteran population. While we did not identify any studies conducted only among parents with PTSD, the majority of parents in the included studies for KQ2 were selected based on histories of MDD, a highly prevalent mental health condition. Depression is one of the most common mental health conditions among Veterans. We did not identify any studies that were designed for parents with a history of sexual trauma, which is a common trauma among women Veterans. As stated above, we limited eligibility to studies conducted in OECD countries, which improves applicability to the VHA. Taken as a whole, findings presented here likely have applicability to Veteran populations seeking care through the VHA.

## Recently Published Studies and Ongoing Work

We also identified 2 studies published after we concluded our search. The first was a VHA-based uncontrolled before-after pilot study of Strength at Home—Parents (SAHP), a trauma-informed parenting program, conducted among 21 Veterans with elevated PTSD symptoms.<sup>72</sup> The intervention consisted of 8 group sessions separated by gender to accommodate any participants

who may have experienced MST and, consequently, may be uncomfortable in mixed-gender groups. The in-person sessions were planned for 2 hours and integrated trauma-informed relationship improvement treatments<sup>73</sup> with content to address aspects of parenting impacted by PTSD symptoms (eg, attachment, positive parenting behaviors) and education on child development, emotion regulation, and communication skills. Results provide evidence to support a high degree of satisfaction, credibility, and acceptability of the intervention among Veteran participants. While not designed to test the impact of the intervention on effectiveness targets, preliminary results suggest improvements in parenting practices and family functioning.

We also identified a second uncontrolled before-after study conducted with 111 mothers engaged with family preservation services in New York City.<sup>74</sup> While not selected for histories of trauma, all participants met diagnostic criteria for PTSD. The intervention consisted of 23 sessions of weekly individual therapy that integrated evidence-based interventions: Skills Training in Affective and Interpersonal Regulation (STAIR; 9 sessions infused with parenting skills building), trauma-focused narrative therapy (6 sessions), and Parent-Child Care (PC-CARE; 8 sessions of a dyadic play therapy between the mother and child). Results suggest that the intervention is feasible. In a completers analysis of 70 mothers, significant changes post-intervention were observed for parenting stress, parenting skills, and child behaviors, as well as maternal PTSD and depression.<sup>74</sup> An RCT of this intervention is underway and is slated for completion in 2025 (ClinicalTrials.gov identifier: NCT04752618).

It is important to note that the Parenting STAIR intervention assessed in this uncontrolled before-after study differs from the Parenting STAIR intervention piloted in the VA. First, the Parenting STAIR assessed with mothers in New York City was 23 sessions compared to a range of 12 to 17 sessions of Parenting STAIR piloted in the VA. Next, these programs differed in content as well. The community Parenting STAIR integrated parenting skills into STAIR from the first session and included an additional trauma-focused approach (6 sessions of narrative therapy). In contrast, the Parenting STAIR program piloted in the VA offered 5 sessions of evidence-informed parenting skills training to Veterans who completed the course of Skills Training in Affective and Interpersonal Regulation. Last, the community Parenting STAIR intervention directly involved children in the intervention via 8 sessions of evidence-based parent-child play therapy; this component is not a part of Parenting STAIR piloted in the VA.

To project forthcoming evidence from currently active studies in this area, we conducted a rapid review of ClinicalTrials.gov to identify studies in active recruitment, those not yet recruiting, or those that were closed but that do not yet have evidence of related publications. We identified only 2 ongoing studies that may be applicable to this review. Both are currently recruiting participants. The first study is an RCT (projected sample size: 20 to 40 parents) assessing a group-based parenting program augmented with 2 individual sessions among parents with clinically elevated depressive symptoms (ClinicalTrials.gov identifier: NCT04298437). To be eligible for this study, children must also have clinically elevated emotion regulation or behavioral issues. The other study is a variant of the FOCUS-EC intervention, an individual family therapy intervention with children involved in 2 of the 8 weekly therapy sessions, included in our review.<sup>45</sup> Unlike the FOCUS-EC intervention included here among active duty military-connected families, this study is being conducted with 60 families with a parental history of interpersonal child trauma (ClinicalTrials.gov identifier: NCT05264415).

## RESEARCH GAPS/FUTURE RESEARCH

This comprehensive review of the literature identified several gaps in the current evidence that warrant future investigation. To inform future work in this area, we consider the PICOT framework (Table 9). This approach considers the population, intervention, comparator, outcome, and timing (PICOT) to identify gaps.

**Table 9. Evidence Gaps for Parenting Skills Training on Key Outcomes**

PICOTS Domain	Evidence Gap/Area for Future Exploration
<b>Population</b>	<ul style="list-style-type: none"> <li>• Parents with histories of military sexual trauma and adult sexual trauma</li> <li>• Parents with histories of PTSD</li> <li>• Parents with mixed populations of SMI conditions</li> <li>• Veterans with children under the age of 18</li> </ul>
<b>Intervention</b>	<ul style="list-style-type: none"> <li>• Peer-to-peer individual approaches</li> <li>• Peer facilitator-led groups</li> <li>• Interventions that assess the minimum amount of facilitated engagement needed to improve key outcomes (eg, self-directed + some group or individual support)</li> </ul>
<b>Comparator</b>	<ul style="list-style-type: none"> <li>• Head-to-head comparisons of virtual vs in-person modes</li> <li>• Direct comparison of peer-led versus provider-led parenting groups</li> <li>• Direct comparison of the additive effects of direct child involvement</li> </ul>
<b>Outcomes</b>	<ul style="list-style-type: none"> <li>• Parental knowledge</li> <li>• Parental stress</li> <li>• Parental emotion regulation</li> <li>• Family conflict and overall family functioning</li> <li>• Participant satisfaction</li> </ul>
<b>Timing</b>	<ul style="list-style-type: none"> <li>• Outcomes beyond 12 months to assess sustainment of key parent, family, and child outcomes</li> </ul>

## CONCLUSIONS

The current systematic review sought to synthesize the effectiveness of parenting programs among parents with stressors due to parental history of sexual trauma and/or SMI, as well as among parents with histories of military service. We also sought to clarify the characteristics of effective programs—including the content and format of delivery—to inform implementation considerations for the VHA. Though the evidence base for parenting skills training to increase parenting competence and reduce family stress is robust in community samples, our review identified only 14 studies conducted among our populations of interest. Most of the studies identified in this review reported significant improvements on prioritized parent, child, and family outcomes, showing a general pattern of improvements across diverse types of parenting skills training programs that mirror findings in other studies of parenting programs.<sup>1,67</sup> Yet certainty of evidence ratings were generally low due to issues with risk of bias of included studies or indirectness of populations or intervention approaches to the VA health care context. When evaluating parenting skills training programs, it is important to consider the feasibility and scalability of implementation across the VHA.

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## APPENDIX A. SEARCH STRATEGIES

**Database: MEDLINE (via Ovid)**

Search date: 9/7/2022

Note: Ovid MEDLINE(R) ALL 1946 to September 06, 2022

Search Set	Search Strategy	Results
#1 <i>Parenting skills training terms</i>	*parents/ed or ((parent or parents or parental or parenting) adj6 (training or trainings or skill or skills or education or educational or intervention or interventions or interventional or program or programs or programme or programmes or programming or course or courses or workshop or workshops)).ti,ab. or (triple P or "positive parenting program" or "positive parenting programs").ti,ab.	39,061
#2 <i>Psychological trauma terms</i>	exp "Trauma and Stressor Related Disorders"/ or exp "Stress Disorders, Traumatic"/ or exp Combat Disorders/ or exp Psychological Trauma/ or exp Sexual Trauma/ or exp "Stress Disorders, Post-Traumatic"/ or exp "Stress Disorders, Traumatic, Acute"/ or exp Domestic Violence/ or exp Spouse Abuse/ or exp Stalking/ or exp Rape/ or (trauma or traumas or traumatic or psychotrauma or psychotraumatic or PTSD or posttraumatic or post-traumatic or "combat disorder" or "combat disorders" or stalking or stalker or stalkers or rape or rapes or raped).ti,ab. or ((sex or sexual or sexually or domestic or "intimate partner" or "intimate partners" or spouse or spouses or spousal or physical or physically) adj2 (abuse or abuses or abused or abuser or abusers or violence or assault or assaults or assaulted)).ti,ab. or ((psychological or psychologically or psychologic) adj2 (aggression or aggressor or aggressors or injury or injuries or abuse or abuses or abusive)).ti,ab.	507,155
#3 <i>Military / veterans terms</i>	exp veterans/ or exp veterans health/ or exp hospitals, veterans/ or exp veterans health services/ or exp military personnel/ or exp military family/ or exp "psychology, military"/ or exp military psychiatry/ or exp "military health services"/ or exp military health/ or (veteran or veterans or military or army or navy or naval or marine or marines or "service member" or "service members" or "service men" or servicemen or "service women" or servicewomen or postdeployment or post-deployment or "post deployment" or "after deployment").ti,ab	235,049
#4 <i>Mental illness terms</i>	exp "Bipolar and Related Disorders"/ or exp Bipolar Disorder/ or Depressive Disorder/ or exp Depressive Disorder, Major/ or exp Depressive Disorder, Treatment-Resistant/ or *Mood Disorders/ or *Mental Disorders/ or Personality Disorders/ or exp Antisocial Personality Disorder/ or exp Borderline Personality Disorder/ or exp Compulsive Personality Disorder/ or exp Histrionic Personality Disorder/ or exp Paranoid Personality Disorder/ or exp Schizoid Personality Disorder/ or exp Schizotypal Personality Disorder/ or exp Schizophrenia Spectrum and Other Psychotic Disorders/ or exp Affective Disorders, Psychotic/ or exp Paranoid Disorders/ or exp Psychotic Disorders/ or exp Schizophrenia/ or ("mental illness" or "mental illnesses" or "mentally ill" or "psychiatric illness" or "psychiatric illnesses" or "psychiatric disorder" or "psychiatric disorders" or "mental disorder" or "mental disorders" or "mood disorder" or "mood disorders" or depression or depressive or bipolar or schizophrenia or schizophrenic OR schizophreniform OR schizoaffective or schizo-affective or "schizo affective" or schizoid OR schizoidism OR schizotypal or schizo-typal or "schizo tygal" or psychotic or psychosis or psychoses or mania or manic OR psychopath OR psychopaths OR psychopathy OR psychopathic OR paranoia or paranoid or "personality disorder" or	790,619

	"personality disorders").ti,ab. or ((antisocial or borderline or compulsive or obsessive or histrionic) adj2 (disorder or disorders)).ti,ab.	
#5 <i>Combining</i>	2 or 3 or 4	1,461,170
#6 <i>Combining</i>	1 and 5	5,486
#7 <i>Study Design: EPOC filter or RCTs</i>	exp "Cohort Studies"/ or exp "Longitudinal Studies"/ or exp "Follow-Up Studies"/ or exp "Evaluation Studies as Topic"/ or exp "Controlled Before-After Studies"/ or exp "Interrupted Time Series Analysis"/ or "Randomized Controlled Trial".pt. or "Controlled Clinical Trial".pt. or "Clinical Trial".pt. or "Evaluation Studies".pt. or "Comparative Study".pt. or (randomized or randomised or randomization or randomisation or placebo or randomly or trial or trials or groups or "evaluation study" or "evaluation studies" or "intervention study" or "intervention studies" or cohort or cohorts or longitudinal or longitudinally or prospective or prospectively or "follow up" or follow-up or followup or "comparative study" or "comparative studies" or nonrandom or "non-random" or nonrandomized or "non-randomized" or nonrandomised or "non-randomised" or quasi-experiment* or quazi-experiment* or quasiexperiment* or quaziexperiment* or quasirandom* or quazirandom* or quasi-random* or quazi-random* or quasi-control* or quazi-control* or quasicontrol* or quazicontrol*).ti,ab. or (controlled AND study).ti,ab. or ("pre-post" or "pre post" or "posttest" or "post-test" or "post test" or pretest or "pre-test" or "pre test" or "repeated measure" or "repeated measures").ti,ab. or (before AND after).ti,ab. or (before AND during).ti,ab. or ("time series" AND interrupt*).ti,ab. or ("time points" AND (multiple or one or two or three or four or five or six or seven or eight or nine or ten or month or monthly or day or daily or week or weekly or hour or hourly)).ti,ab.	9,172,480
#8 <i>combining</i>	6 and 7	3,299
#9 <i>Exclusions – study designs</i>	8 not (case reports or editorial or letter or comment or congress).pt.	3,264
#10 <i>Exclusions – animal-only</i>	9 not (exp animals/ not exp humans/)	3,263

**Database: Embase (via Elsevier)**

Search date: 9/7/2022

*Note: Search from Results*

Search Set	Search Strategy	Results
#1 <i>Parenting skills training terms</i>	((parent OR parents OR parental OR parenting) NEAR/6 (training OR trainings OR skill OR skills OR education OR educational OR intervention OR interventions OR interventional OR program OR programs OR programme OR programmes OR programming OR course OR courses OR workshop OR workshops)).ti,ab OR (triple P OR 'positive parenting program' OR 'positive parenting programs'):ti,ab	82,705
#2 <i>Psychological trauma terms</i>	'posttraumatic stress disorder'/exp OR 'combat stress'/exp OR 'sexual trauma'/exp OR 'psychotrauma'/exp OR 'acute stress disorder'/exp OR 'domestic violence'/exp OR 'partner violence'/exp OR 'stalking'/exp OR 'rape'/exp OR (trauma OR traumas OR traumatic OR psychotrauma OR	697,740

	psychotraumatic OR PTSD OR posttraumatic OR 'combat disorder' OR 'combat disorders' OR stalking OR stalker OR stalkers OR rape OR rapes OR raped):ti,ab OR ((sex OR sexual OR sexually OR domestic OR 'intimate partner' OR 'intimate partners' OR spouse OR spouses OR spousal OR physical OR physically) NEAR/2 (abuse OR abuses OR abused OR abuser OR abusers OR violence OR assault OR assaults OR assaulted)):ti,ab OR ((psychological OR psychologically OR psychologic) NEAR/2 (aggression OR aggressor OR aggressors OR injury OR injuries OR abuse OR abuses OR abusive)):ti,ab	
#3 <i>Military / veterans terms</i>	'veteran'/exp OR 'veterans health'/exp OR 'military health'/exp OR 'military health service'/exp OR 'veterans health service'/exp OR 'military personnel'/exp OR 'military medical personnel'/exp OR 'military family'/exp OR 'military spouse'/exp OR 'military medicine'/exp OR 'military hospital'/exp OR (veteran OR veterans OR military OR army OR navy OR naval OR marine OR marines OR 'service member' OR 'service members' OR 'service men' OR servicemen OR 'service women' OR servicewomen OR postdeployment OR 'post deployment' OR 'after deployment'):ti,ab	292,425
#4 <i>Mental illness terms</i>	'bipolar disorder'/exp OR 'depression'/exp OR 'mood disorder'/exp OR 'mental disease'/mj OR 'personality disorder'/exp OR 'antisocial personality disorder'/exp OR 'borderline state'/exp OR 'compulsive personality disorder'/exp OR 'histrionic personality disorder'/exp OR 'paranoid personality disorder'/exp OR 'psychopathy'/exp OR 'schizoidism'/exp OR 'schizotypal personality disorder'/exp OR 'schizophrenia spectrum disorder'/exp OR 'brief psychotic disorder'/exp OR 'schizoaffective psychosis'/exp OR 'schizophrenia'/exp OR 'schizophreniform disorder'/exp OR ('mental illness' OR 'mental illnesses' OR 'mentally ill' OR 'psychiatric illness' OR 'psychiatric illnesses' OR 'psychiatric disorder' OR 'psychiatric disorders' OR 'mental disorder' OR 'mental disorders' OR 'mood disorder' OR 'mood disorders' OR depression OR depressive OR bipolar OR schizophrenia OR schizophrenic OR schizophreniform OR schizoaffective OR 'schizo affective' OR schizoid OR schizoidism OR schizotypal OR 'schizo typical' OR psychotic OR psychosis OR psychoses OR mania OR manic OR psychopath OR psychopaths OR psychopathy OR psychopathic OR paranoia OR paranoid OR 'personality disorder' OR 'personality disorders'):ti,ab OR ((antisocial OR borderline OR compulsive OR obsessive OR histrionic) NEAR/2 (disorder OR disorders)):ti,ab	1,343,265
#5 <i>Combining</i>	#2 OR #3 OR #4	2,216,628
#6 <i>Combining</i>	#1 AND #5	8,681
#7 <i>Study Design: EPOC filter OR RCTs</i>	'cohort analysis'/exp OR 'longitudinal study'/de OR 'randomized controlled trial'/exp OR 'controlled clinical trial'/exp OR 'single blind procedure'/exp OR 'double blind procedure'/exp OR 'crossover procedure'/exp OR 'crossover procedure':de OR 'double-blind procedure':de OR 'randomized controlled trial':de OR 'single-blind procedure':de OR (random* OR factorial* OR crossover* OR cross NEXT/1 over* OR placebo* OR doubl* NEAR/1 blind* OR singl* NEAR/1 blind* OR assign* OR allocat* OR volunteer*):ti,ab OR ('evaluation study' OR 'evaluation studies' OR 'intervention study' OR 'intervention studies' OR cohort OR cohorts OR longitudinal OR longitudinally OR prospective OR prospectively OR 'follow up' OR follow-up OR followup OR 'comparative study' OR 'comparative studies' OR nonrandom OR 'non-random' OR nonrandomized OR 'non-randomized' OR nonrandomised OR 'non-randomised' OR quasi-experiment* OR quazi-experiment* OR quasiexperiment* OR	7,725,543

	quaziexperiment* OR quasirandom* OR quazirandom* OR quasi-random* OR quazi-random* OR quasi-control* OR quazi-control* OR quasicontrol* OR quazicontrol*):ti,ab OR (controlled AND study):ti,ab OR ('pre-post' OR 'pre post' OR 'posttest' OR 'post-test' OR 'post test' OR pretest OR 'pre-test' OR 'pre test' OR 'repeated measure' OR 'repeated measures'):ti,ab OR (before AND after):ti,ab OR (before AND during):ti,ab OR ('time series' AND interrupt*):ti,ab OR ('time points' AND (multiple OR one OR two OR three OR four OR five OR six OR seven OR eight OR nine OR ten OR month OR monthly OR day OR daily OR week OR weekly OR hour OR hourly)):ti,ab	
#8 <i>combining</i>	#6 AND #7	4,250
#9 <i>Exclusions – study designs</i>	#8 NOT ('case report'/exp OR 'case study'/exp OR 'editorial'/exp OR [editorial]/lim OR 'letter'/exp OR [letter]/lim OR 'note'/exp OR [note]/lim OR [conference abstract]/lim OR 'conference abstract'/exp OR 'conference abstract'/it)	3,206
#10 <i>Exclusions – animal-only</i>	#9 AND [humans]/lim	3,149

**Database: APA PsycINFO (via Ovid)**

Search date: 9/7/2022

Note: APA PsycInfo 1806 to August Week 5 2022

Search Set	Search Strategy	Results
#1 <i>Parenting skills training terms</i>	((parent or parents or parental or parenting) adj6 (training or trainings or skill or skills or education or educational or intervention or interventions or interventional or program or programs or programme or programmes or programming or course or courses or workshop or workshops)).ti,ab. or (triple P or "positive parenting program" or "positive parenting programs").ti,ab.	48,106
#2 <i>Psychological trauma terms</i>	"stress and trauma related disorders"/ or acute stress disorder/ or exp posttraumatic stress disorder/ or posttraumatic stress/ OR trauma/ or emotional trauma/ or traumatic experiences/ or combat experience/ or exp intimate partner violence/ or domestic violence/ or emotional abuse/ or physical abuse/ or exp sexual abuse/ or stalking/ or rape/ or (trauma or traumas or traumatic or psychotrauma or psychotraumatic or PTSD or posttraumatic or post-traumatic or "combat disorder" or "combat disorders" or stalking or stalker or stalkers or rape or rapes or raped).ti,ab. or ((sex or sexual or sexually or domestic or "intimate partner" or "intimate partners" or spouse or spouses or spousal or physical or physically) adj2 (abuse or abuses or abused or abuser or abusers or violence or assault or assaults or assaulted)).ti,ab. or ((psychological or psychologically or psychologic) adj2 (aggression or aggressor or aggressors or injury or injuries or abuse or abuses or abusive)).ti,ab.	211,281
#3 <i>Military / veterans terms</i>	exp military personnel/ or military veterans/ or military families/ or exp Military Enlistment/ or exp Military Psychology/ or exp Military Medical Personnel/ or exp Military Psychiatry/ or exp Military Deployment/ or (veteran or veterans or military or army or navy or naval or marine or marines or "service member" or "service members" or "service men" or servicemen or "service women" or servicewomen or postdeployment or post-deployment or "post deployment" or "after deployment").ti,ab	61,924

#4 <i>Mental illness terms</i>	exp bipolar disorder/ or bipolar i disorder/ or bipolar ii disorder/ or exp mania/ or exp borderline states/ or exp chronic mental illness/ or exp dissociative disorders/ or *mental disorders/ or exp personality disorders/ or antisocial personality disorder/ or avoidant personality disorder/ or borderline personality disorder/ or histrionic personality disorder/ or obsessive compulsive personality disorder/ or paranoid personality disorder/ or schizoid personality disorder/ or schizotypal personality disorder/ or serious mental illness/ or affective disorders/ or exp major depression/ or psychosis/ or acute psychosis/ or affective psychosis/ or chronic psychosis/ or "paranoia (psychosis)"/ or exp schizophrenia/ or schizophreniform disorder/ or schizoid personality disorder/ or schizotypal personality disorder/ or ("mental illness" or "mental illnesses" or "mentally ill" or "psychiatric illness" or "psychiatric illnesses" or "psychiatric disorder" or "psychiatric disorders" or "mental disorder" or "mental disorders" or "mood disorder" or "mood disorders" or depression or depressive or bipolar or schizophrenia or schizophrenic OR schizophreniform OR schizoaffective or schizo-affective or "schizo affective" or schizoid OR schizoidism OR schizotypal or schizo-typal or "schizo typal" or psychotic or psychosis or psychoses or mania or manic OR psychopath OR psychopaths OR psychopathy OR psychopathic OR paranoia or paranoid or "personality disorder" or "personality disorders").ti,ab. or ((antisocial or borderline or compulsive or obsessive or histrionic) adj2 (disorder or disorders)).ti,ab.	657,718
#5 <i>Combining</i>	2 or 3 or 4	860,166
#6 <i>Combining</i>	1 and 5	6,587
#7 <i>Study Design: EPOC filter or RCTs</i>	clinical trials/ or cohort analysis/ or followup studies/ or longitudinal studies/ or exp randomized controlled trials/ or exp randomized clinical trials/ or repeated measures/ or time series/ or (0300 or 0430 or 0450 or 0451).md. or (randomized or randomised or randomization or randomisation or placebo or randomly or trial or trials or groups or "evaluation study" or "evaluation studies" or "intervention study" or "intervention studies" or cohort or cohorts or longitudinal or longitudinally or prospective or prospectively or "follow up" or follow-up or followup or "comparative study" or "comparative studies" or nonrandom or "non-random" or nonrandomized or "non-randomized" or nonrandomised or "non-randomised" or quasi-experiment* or quazi-experiment* or quasiexperiment* or quaziexperiment* or quasirandom* or quazirandom* or quasi-random* or quazi-random* or quasi-control* or quazi-control* or quasicontrol* or quazicontrol*).ti,ab. or (controlled AND study).ti,ab. or ("pre-post" or "pre post" or "posttest" or "post-test" or "post test" or pretest or "pre-test" or "pre test" or "repeated measure" or "repeated measures").ti,ab. or (before AND after).ti,ab. or (before AND during).ti,ab. or ("time series" AND interrupt*).ti,ab. or ("time points" AND (multiple or one or two or three or four or five or six or seven or eight or nine or ten or month or monthly or day or daily or week or weekly or hour or hourly)).ti,ab.	1,286,126
#8 <i>combining</i>	6 and 7	3,077
#9 <i>Exclusions – study designs</i>	8 not (exp Case Report/ or (0200 or 0700 or 0750 or 1400).md. or (0120 or 0200 or 0240 or 0280 or 0300 or 0400 or 0500).pt.)	2,045
#10 <i>Exclusions – animal-only</i>	9 not (animal.po. not human.po.)	2,044

Database: CINAHL Complete (via EBSCO)

Search date: 9/7/2022

Search Set	Search Strategy	Results
#1 <i>Parenting skills training terms</i>	((TI parent OR AB parent) OR (TI parents OR AB parents) OR (TI parental OR AB parental) OR (TI parenting OR AB parenting)) N6 ((TI training OR AB training) OR (TI trainings OR AB trainings) OR (TI skill OR AB skill) OR (TI skills OR AB skills) OR (TI education OR AB education) OR (TI educational OR AB educational) OR (TI intervention OR AB intervention) OR (TI interventions OR AB interventions) OR (TI interventional OR AB interventional) OR (TI program OR AB program) OR (TI programs OR AB programs) OR (TI programme OR AB programme) OR (TI programmes OR AB programmes) OR (TI programming OR AB programming) OR (TI course OR AB course) OR (TI courses OR AB courses) OR (TI workshop OR AB workshop) OR (TI workshops OR AB workshops))) OR ((TI "triple P" OR AB "triple P") OR (TI "positive parenting program" OR AB "positive parenting program") OR (TI "positive parenting programs" OR AB "positive parenting programs"))	25,903
#2 <i>Psychological trauma terms</i>	(MH "Stress Disorders, Post-Traumatic+") OR (MH "Psychological Trauma+") OR (MH "Sexual Trauma") OR (MH "Domestic Violence+") OR (MH "Intimate Partner Violence") OR (MH "Gender-Based Violence") OR (MH "Stalking") OR (MH "Rape") OR ((TI trauma OR AB trauma) OR (TI traumas OR AB traumas) OR (TI traumatic OR AB traumatic) OR (TI psychotrauma OR AB psychotrauma) OR (TI psychotraumatic OR AB psychotraumatic) OR (TI PTSD OR AB PTSD) OR (TI posttraumatic OR AB posttraumatic) OR (TI post-traumatic OR AB post-traumatic) OR (TI "combat disorder" OR AB "combat disorder") OR (TI "combat disorders" OR AB "combat disorders") OR (TI stalking OR AB stalking) OR (TI stalker OR AB stalker) OR (TI stalkers OR AB stalkers) OR (TI rape OR AB rape) OR (TI rapes OR AB rapes) OR (TI raped OR AB raped)) OR (((TI sex OR AB sex) OR (TI sexual OR AB sexual) OR (TI sexually OR AB sexually) OR (TI domestic OR AB domestic) OR (TI "intimate partner" OR AB "intimate partner") OR (TI "intimate partners" OR AB "intimate partners") OR (TI spouse OR AB spouse) OR (TI spouses OR AB spouses) OR (TI spousal OR AB spousal) OR (TI physical OR AB physical) OR (TI physically OR AB physically)) N2 ((TI abuse OR AB abuse) OR (TI abuses OR AB abuses) OR (TI abused OR AB abused) OR (TI abuser OR AB abuser) OR (TI abusers OR AB abusers) OR (TI violence OR AB violence) OR (TI assault OR AB assault) OR (TI assaults OR AB assaults) OR (TI assaulted OR AB assaulted))) OR (((TI psychological OR AB psychological) OR (TI psychologically OR AB psychologically) OR (TI psychologic OR AB psychologic)) N2 ((TI aggression OR AB aggression) OR (TI aggressor OR AB aggressor) OR (TI aggressors OR AB aggressors) OR (TI injury OR AB injury) OR (TI injuries OR AB injuries) OR (TI abuse OR AB abuse) OR (TI abuses OR AB abuses) OR (TI abusive OR AB abusive)))	208,759
#3 <i>Military / veterans terms</i>	(MH "Military Personnel+") OR (MH "Veterans+") OR (MH "Hospitals, Veterans") OR (MH "Military Deployment+") OR (MH "Military Family") OR (MH "Military Medicine") OR (MH "Military Health") OR (MH "Military Health Services") OR (MH "Military Nursing") OR ((TI veteran OR AB veteran) OR (TI veterans OR AB veterans) OR (TI military OR AB military) OR (TI army OR AB army) OR (TI navy OR AB navy) OR (TI naval OR AB naval) OR (TI marine OR AB marine) OR (TI marines OR AB marines) OR (TI "service member" OR AB "service member") OR (TI "service	70,139

	members" OR AB "service members") OR (TI "service men" OR AB "service men") OR (TI servicemen OR AB servicemen) OR (TI "service women" OR AB "service women") OR (TI servicewomen OR AB servicewomen) OR (TI postdeployment OR AB postdeployment) OR (TI post-deployment OR AB post-deployment) OR (TI "post deployment" OR AB "post deployment") OR (TI "after deployment" OR AB "after deployment"))	
#4 <i>Mental illness terms</i>	(MM "Mental Disorders") OR (MH "Mental Disorders, Chronic") OR (MH "Personality Disorders+") OR (MH "Antisocial Personality Disorder") OR (MH "Borderline Personality Disorder") OR (MH "Compulsive Personality Disorder") OR (MH "Histrionic Personality Disorder") OR (MH "Schizotypal Personality Disorder") OR (MH "Psychotic Disorders") OR (MH "Bipolar Disorder+") OR (MH "Affective Disorders, Psychotic+") OR (MH "Paranoid Disorders") OR (MH "Postpartum Psychosis") OR (MH "Schizophrenia+") OR ((TI "mental illness" OR AB "mental illness") OR (TI "mental illnesses" OR AB "mental illnesses") OR (TI "mentally ill" OR AB "mentally ill") OR (TI "psychiatric illness" OR AB "psychiatric illness") OR (TI "psychiatric illnesses" OR AB "psychiatric illnesses") OR (TI "psychiatric disorder" OR AB "psychiatric disorder") OR (TI "psychiatric disorders" OR AB "psychiatric disorders") OR (TI "mental disorder" OR AB "mental disorder") OR (TI "mental disorders" OR AB "mental disorders") OR (TI "mood disorder" OR AB "mood disorder") OR (TI "mood disorders" OR AB "mood disorders") OR (TI depression OR AB depression) OR (TI depressive OR AB depressive) OR (TI bipolar OR AB bipolar) OR (TI schizophrenia OR AB schizophrenia) OR (TI schizophrenic OR AB schizophrenic) OR (TI schizophreniform OR AB schizophreniform) OR (TI schizoaffective OR AB schizoaffective) OR (TI schizo-affective OR AB schizo-affective) OR (TI "schizo affective" OR AB "schizo affective") OR (TI schizoid OR AB schizoid) OR (TI schizoidism OR AB schizoidism) OR (TI schizotypal OR AB schizotypal) OR (TI schizo-typal OR AB schizo-typal) OR (TI "schizo typal" OR AB "schizo typal") OR (TI psychotic OR AB psychotic) OR (TI psychosis OR AB psychosis) OR (TI psychoses OR AB psychoses) OR (TI mania OR AB mania) OR (TI manic OR AB manic) OR (TI psychopath OR AB psychopath) OR (TI psychopaths OR AB psychopaths) OR (TI psychopathy OR AB psychopathy) OR (TI psychopathic OR AB psychopathic) OR (TI paranoia OR AB paranoia) OR (TI paranoid OR AB paranoid) OR (TI "personality disorder" OR AB "personality disorder") OR (TI "personality disorders" OR AB "personality disorders")) OR (((TI antisocial OR AB antisocial) OR (TI borderline OR AB borderline) OR (TI compulsive OR AB compulsive) OR (TI obsessive OR AB obsessive) OR (TI histrionic OR AB histrionic)) N2 ((TI disorder OR AB disorder) OR (TI disorders OR AB disorders)))	305,707
#5 <i>Combining</i>	S2 OR S3 OR S4	547,452
#6 <i>Combining</i>	S1 AND S5	3,961
#7 <i>Study Design: EPOC filter or RCTs</i>	(ZT "randomized controlled trial") OR (MH "Randomized Controlled Trials") OR (MH "Double-Blind Studies") OR (MH "Prospective Studies+") OR (MH "Single-Blind Studies") OR (MH "Triple-Blind Studies") OR (MH "Crossover Design") OR (MH "Experimental Studies") OR (MH "Clinical Trials") OR (MH "Intervention Trials") OR (MH "Preventive Trials") OR (MH "Therapeutic Trials+") OR (MH "Controlled Before-After Studies") OR (MH "Interrupted Time Series Analysis") OR (MH "Nonrandomized Trials") OR (MH "Quasi-Experimental Studies+") OR (MH "Multiple Time Series") OR (MH "Time Series") OR (MH "Repeated Measures") OR (TI	2,073,422



	<p>randomized OR AB randomized) OR (TI randomised OR AB randomised) OR (TI randomization OR AB randomization) OR (TI randomisation OR AB randomisation) OR (TI placebo OR AB placebo) OR (TI randomly OR AB randomly) OR (TI trial OR AB trial) OR (TI trials OR AB trials) OR (TI groups OR AB groups) OR (TI "evaluation study" OR AB "evaluation study") OR (TI "evaluation studies" OR AB "evaluation studies") OR (TI "intervention study" OR AB "intervention study") OR (TI "intervention studies" OR AB "intervention studies") OR (TI cohort OR AB cohort) OR (TI cohorts OR AB cohorts) OR (TI longitudinal OR AB longitudinal) OR (TI longitudinally OR AB longitudinally) OR (TI prospective OR AB prospective) OR (TI prospectively OR AB prospectively) OR (TI "follow up" OR AB "follow up") OR (TI follow-up OR AB follow-up) OR (TI followup OR AB followup) OR (TI "comparative study" OR AB "comparative study") OR (TI "comparative studies" OR AB "comparative studies") OR (TI nonrandom OR AB nonrandom) OR (TI non-random OR AB non-random) OR (TI nonrandomized OR AB nonrandomized) OR (TI non-randomized OR AB non-randomized) OR (TI nonrandomised OR AB nonrandomised) OR (TI non-randomised OR AB non-randomised) OR (TI quasi-experiment* OR AB quasi-experiment*) OR (TI quazi-experiment* OR AB quazi-experiment*) OR (TI quasiexperiment* OR AB quasiexperiment*) OR (TI quaziexperiment* OR AB quaziexperiment*) OR (TI quasirandom* OR AB quasirandom*) OR (TI quazirandom* OR AB quazirandom*) OR (TI quasi-random* OR AB quasi-random*) OR (TI quazi-random* OR AB quazi-random*) OR (TI quasi-control* OR AB quasi-control*) OR (TI quazi-control* OR AB quazi-control*) OR (TI quasicontrol* OR AB quasicontrol*) OR (TI quazicontrol* OR AB quazicontrol*) OR ((TI controlled OR AB controlled) AND (TI study OR AB study)) OR ((TI pre-post OR AB pre-post) OR (TI "pre post" OR AB "pre post") OR (TI posttest OR AB posttest) OR (TI post-test OR AB post-test) OR (TI "post test" OR AB "post test") OR (TI pretest OR AB pretest) OR (TI pre-test OR AB pre-test) OR (TI "pre test" OR AB "pre test") OR (TI "repeated measure" OR AB "repeated measure") OR (TI "repeated measures" OR AB "repeated measures")) OR ((TI before OR AB before) AND (TI after OR AB after)) OR ((TI before OR AB before) AND (TI during OR AB during)) OR ((TI "time series" OR AB "time series") AND (TI interrupt* OR AB interrupt*)) OR ((TI "time points" OR AB "time points") AND ((TI multiple OR AB multiple) OR (TI one OR AB one) OR (TI two OR AB two) OR (TI three OR AB three) OR (TI four OR AB four) OR (TI five OR AB five) OR (TI six OR AB six) OR (TI seven OR AB seven) OR (TI eight OR AB eight) OR (TI nine OR AB nine) OR (TI ten OR AB ten) OR (TI month OR AB month) OR (TI monthly OR AB monthly) OR (TI day OR AB day) OR (TI daily OR AB daily) OR (TI week OR AB week) OR (TI weekly OR AB weekly) OR (TI hour OR AB hour) OR (TI hourly OR AB hourly)))</p>	
#8 <i>combining</i>	S6 AND S7	2,283
#9 <i>Exclusions – study designs</i>	S8 NOT PT ( Abstract OR Algorithm OR Anecdote OR Bibliography OR Biography OR Book OR Book Chapter OR Book Review OR Cartoon OR Case Study OR Commentary OR Editorial OR Letter OR Masters Thesis OR Doctoral Dissertation OR Forms OR Games OR Pamphlet OR Pamphlet Chapter OR Poetry )	2,131
#10 <i>Exclusions – animal-only</i>	S9 NOT (((MH "Animals+") OR (MH "Animal Studies") OR (TI "animal model*")) NOT (MH "human"))	2,131

## APPENDIX B. EXCLUDED STUDIES

Exclude reasons: 1=Ineligible population, 2=Ineligible intervention, 3=Ineligible comparator, 4=Ineligible outcome, 5=Ineligible study design, 6=Ineligible publication type, 7=Ineligible Other.

Citation	Exclude Reason
Alexander, 2018 <sup>1</sup>	5
Allchin, 2020 <sup>2</sup>	4
Altafim, 2021 <sup>3</sup>	1
Anis, 2022 <sup>4</sup>	1
Aylward, 2019 <sup>5</sup>	1
Ballard, 2018 <sup>6</sup>	1
Barnicot, 2022 <sup>7</sup>	1
Beardslee, 1997 <sup>8</sup>	2
Beardslee, 1996 <sup>9</sup>	2
Bearslee, 2007 <sup>10</sup>	2
Becker, 2008 <sup>11</sup>	1
Boyd, 2017 <sup>12</sup>	1
Butler, 2000 <sup>13</sup>	2
Byrne, 2019 <sup>14</sup>	1
Casselmann, 2015 <sup>15</sup>	2
Cicchetti, 1999 <sup>16</sup>	2
Coates, 2017 <sup>17</sup>	4
Cooper, 2017 <sup>18</sup>	1
Cullum, 2022 <sup>19</sup>	1
Day, 2020 <sup>20</sup>	1
DeGarmo, 2004 <sup>21</sup>	1
Dempsey, 2016 <sup>22</sup>	1
DeVoe, 2017 <sup>23</sup>	1
Fernandez, 2004 <sup>24</sup>	1
Franz, 2011 <sup>25</sup>	1
Gewirtz, 2018 <sup>26</sup>	5
Giallo, 2021 <sup>27</sup>	1
Graham-Bermann, 2015 <sup>28</sup>	1
Green, 2014 <sup>29</sup>	1
Grip, 2011 <sup>30</sup>	1
Grogan-Kaylor, 2019 <sup>31</sup>	1
Gross, 2018 <sup>32</sup>	1
Haight, 2005 <sup>33</sup>	1
Heckman, 2004 <sup>34</sup>	2
Howell, 2015 <sup>35</sup>	1

Citation	Exclude Reason
Hurlburt, 2013 <sup>36</sup>	1
Isobel, 2016 <sup>37</sup>	1
Jaite, 2019 <sup>38</sup>	1
Katz, 2020 <sup>39</sup>	1
Kemmis-Riggs, 2022 <sup>40</sup>	1
Kotter, 2011 <sup>41</sup>	1
Lieberman, 2005 <sup>42</sup>	1
Lindsey, 2022 <sup>43</sup>	6
Love, 2016 <sup>44</sup>	1
Maher, 2011 <sup>45</sup>	1
Maybery, 2019 <sup>46</sup>	2
McKee, 2014 <sup>47</sup>	4
Mevissen, 2020 <sup>48</sup>	2
Muzik, 2015 <sup>49</sup>	1
Nielsen, 2006 <sup>50</sup>	2
Patterson, 2004 <sup>51</sup>	1
Peled, 2010 <sup>52</sup>	1
Phelan, 2006 <sup>53</sup>	1
Phelan, 2013 <sup>54</sup>	1
Pihkala, 2010 <sup>55</sup>	1
Potharst, 2019 <sup>56</sup>	1
Punamaki, 2013 <sup>57</sup>	2
Renneberg, 2016 <sup>58</sup>	5
Renner, 2020 <sup>59</sup>	1
Resnick, 1985 <sup>60</sup>	1
Rosenblum, 2018 <sup>61</sup>	1
Rosenblum, 2017 <sup>62</sup>	1
Ross, 2020 <sup>63</sup>	4
Saltzman, 2016 <sup>64</sup>	5
Scannapieco, 1993 <sup>65</sup>	1
Shepherd-Banigan, 2020 <sup>66</sup>	1
Silovsky, 2022 <sup>67</sup>	1
Smeerdijk, 2015 <sup>68</sup>	1
Solantaus, 2010 <sup>69</sup>	2
Solantaus, 2009 <sup>70</sup>	1
Steele, 2019 <sup>71</sup>	1
Stemmler, 2013 <sup>72</sup>	1
Suchman, 2016 <sup>73</sup>	7
Sullivan, 2004 <sup>74</sup>	1
Ueno, 2019 <sup>75</sup>	1

Citation	Exclude Reason
Valdez, 2013 <sup>76</sup>	5
van der Asdonk, 2021 <sup>77</sup>	1
van der Ende, 2014 <sup>78</sup>	2
Waters, 2020 <sup>79</sup>	1
Wiegand-Grefe, 2016 <sup>80</sup>	1
Wretman, 2019 <sup>81</sup>	1

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## APPENDIX C. STUDY CHARACTERISTICS TABLE

Study Country # Enrolled # Arms Design	Mean Age (SD) % Female % Race Population Focus	Study Population	Intervention Type (Description)	Reported Primary Outcomes	Outcome Timing	Risk of Bias for Objective and Patient
Compas, 2009 <sup>34</sup> United States 266 2 RCT	42.2 (7.0) 85.5% White: 86.5% African American SMI-MDD	Parents with current or past MDD during the lifetime of their child(ren) and children of these parents from the areas in and surrounding Nashville, Tennessee, and Burlington, Vermont	In-person multi-family group: A family cognitive-behavioral preventative intervention comprising 12 family group in-person sessions educating families about depressive disorders and how depression impacts family functioning, developing coping responses to stress, and improving parenting skills	Parent depressive symptoms, parent DSM-IV MDD diagnoses, child depressive and internalizing symptoms, child externalizing problems, child DSM-IV diagnoses	2 months, 6 months, and 12 months	Some concerns
Companion papers: Watson 2014, <sup>75</sup> Breslend 2019 <sup>76</sup>						
Fernando, 2018 <sup>36</sup> Germany 175 2 Controlled before and after	39.1 (6.18) 73.2% NR SMI-MDD	(1) Children and adolescents aged between 6 and 14 years (2) without history of prior psychiatric treatment or to psychotherapy and (3) whose parents met DSM-IV diagnostic criteria of major depressive disorder according to the Structured Diagnostic Interview for DSM-IV	In-person individual family counseling + multi-family group + children's group: Kanu-intervention was designed to foster coping strategies and resources of affected families through a combination of individual, family- and group-based intervention strategies	Child psychopathology, well-being and quality of life, parent-child relationship	6 months	Moderate



Study Country # Enrolled # Arms Design	Mean Age (SD) % Female % Race Population Focus	Study Population	Intervention Type (Description)	Reported Primary Outcomes	Outcome Timing	Risk of Bias for Objective and Patient
Jones, 2015 <sup>37</sup> United Kingdom 78 2 RCT	37.55 (7.94) 97.4% NR SMI-bipolar disorder	39 parents with self-diagnosed bipolar disorder (determined with the MDQ) who had children between the ages of 4-10	Web-based self-directed: 10-week web-based course on managing child behavior. They also had a book, and new web-based information was released to them weekly in written, video, and audio format, which helped them work through the self-help book. Key areas included: encouraging desirable behavior, managing sleep routines, and coping with stress in the family	Perceived parenting behavior and child behavior problems	10 weeks	High
Jones, 2017 <sup>31</sup> United Kingdom 97 2 RCT	36.63 (6.31) 78.3% NR SMI-bipolar disorder	Parents with diagnosed bipolar disorder who have children aged 3–10 who were recruited through clinical means and self-referral	Web-based self-directed: An integrated bipolar parenting intervention (IBPI) that included 8 module self-management intervention with strategies for bipolar disorder in parents that covered a range of topics concerning bipolar disorder and parenting issues. Opportunities for reflection were provided through interactive and multimedia features, including video clips, collaborative exercises, and self-evaluation	Parenting skills, parental stress, child behavior problems	16 weeks	Low



Study Country # Enrolled # Arms Design	Mean Age (SD) % Female % Race Population Focus	Study Population	Intervention Type (Description)	Reported Primary Outcomes	Outcome Timing	Risk of Bias for Objective and Patient
Julian, 2018 <sup>44</sup> United States 107 2 Controlled before and after	NR 60.7% White: 78.7% Hispanic/Latino: 12.9% Military: US Service members or Veterans with a history of deployment	Participants or their partners had to be either US service members or Veterans with a history of deployment, with one or more children ≤7 years old. Both parents were invited to participate, together or separately	In-person multi-family group: 10 parent group sessions and 1–3 individual parent sessions with facilitators over the course of 10–12 weeks. Parent groups are taught about parent education, with specific attention to the experiences of military families with young children and the parent-child relationship, opportunities are provided for parent-child interaction and parents receive guidance	Parent behavioral responsiveness, parent emotion responsiveness, parent positive effect, parent withdrawn/depressed, parent irritability/anger	12 weeks	Moderate
Gewirtz, 2018 <sup>47</sup> United States 608 2 RCT	36.66 93.4% White: 90.6 Military: US National Guard and Reserve families	Participants included families where 1 parent had deployed to recent conflicts ( <i>ie</i> , Operation Iraqi Freedom or Operation Enduring Freedom, OIF/OEF) and at least 1 child between the ages of four and 12 was living in the home	In-person multi-family group: 14-week parenting program delivered in sessions of 2 hours per week to multi-family groups of 6 to 15 parents per group. Topics address 6 core parenting skills: teaching through encouragement, discipline, problem-solving, monitoring, positive involvement with children, and emotion socialization	Observed parenting: problem solving, Coercive discipline, positive involvement, skill encouragement, monitoring	14 weeks	Some concerns



Study Country # Enrolled # Arms Design	Mean Age (SD) % Female % Race Population Focus	Study Population	Intervention Type (Description)	Reported Primary Outcomes	Outcome Timing	Risk of Bias for Objective and Patient
O'Shea, 2019 <sup>42</sup> United States 131 (60 in analytic sample) 2 RCT  Companion paper: Kaplan 2014 <sup>32</sup>	37 (7.69) 100 White <sup>a</sup> : 84% Black: 20% Hispanic: 10% Native American: 3% Asian: 3% Other: 2% SMI: schizophrenia or mood disorder	Mothers over the age of 18 with a diagnosis of a mood or schizophrenia spectrum disorder as confirmed by doctor or therapist, who have current primary/shared custody and serving as the caretaker of at least 1 child 18 years old or younger, and who speak fluent English and are US residents	Web-based self-directed: once enrolled into the intervention condition, participants could access all lessons/content offered in the online parenting course. Courses were designed to be optimized based on the participant's child's age (birth to 3, 4–9, 10–13, and 14–18). Over 3 months, mothers completed lessons in a wide array of parenting skills and completed homework and a quiz for each lesson	Enhanced parenting skills, improved parental coping skills, and decreased parental stress	3 months/12 months/18 months	High
Lester, 2016 <sup>45</sup> United States and Japan (US military bases) 3,499 1 Repeated measures study  Companion paper: Lester 2012 <sup>77</sup>	33.4 (6.1) 72.3% NR Military: Active duty US military families	Active-duty military families	In-person individual family: 8 in-person, provider-led sessions for individual families. Sessions centered around 4 topics: family resilience check-in, family psychoeducation and developmental guidance with an emphasis on strengthening parenting, and information on the impact of military-related stressors on children, parents, and family, narrative timelines: structured, graphic narratives of the experiences of individual family members surrounding key family transitions and resilience skill building including communication and problem solving	Parent psychological health symptoms: anxiety symptoms and depressive symptoms	1 month/4 months/6 months	Serious



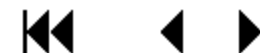
Study Country # Enrolled # Arms Design	Mean Age (SD) % Female % Race Population Focus	Study Population	Intervention Type (Description)	Reported Primary Outcomes	Outcome Timing	Risk of Bias for Objective and Patient
Mogil, 2021 <sup>43</sup> United States 548 2 RCT	32.93 (5.26) 55.59% White: 63.3% Black: 8.02% Native Hawaiian/Pacific Islander: 1.4% Other: 8.88% Military: Families with at least 1 parent who served post-9/11	Families with a child aged 3–6 years with at least 1 parent who served post-9/11 in the US Army, Navy, Marine Corps, or Air Force	Virtual individual family: A virtual, home-visiting telehealth intervention that is trauma-informed and family- centered that consists of 6 modules delivered over 4–10 meetings that last 60–90 minutes	Parent anxiety and depression, parenting stress, parent PTSD, parent-child relationships	3 months/6 months/12 months	Low
Sanford, 2003 <sup>35</sup> Canada 44 2 RCT	41.01 (6.42) 93.02% NR SMI-MDD	Parents who have a clinical diagnosis of MDD according to the referring physician, to be currently under medical care for depression, and to have a child aged 6 through 13 years	In-person multi-family group: 8 weekly, 2-hour sessions with 8 to 12 parent participants (alone or with their partner or a family member) during which parents increased their knowledge of depression and its impact on the family, worked on increasing positive communication, and enhancing positive parenting strategies	Parenting practices (positive/in- effective/consistency), sense of parenting competence, parent conflict, family conflict, depression, depressive symptoms	12 months	High

Study Country # Enrolled # Arms Design	Mean Age (SD) % Female % Race Population Focus	Study Population	Intervention Type (Description)	Reported Primary Outcomes	Outcome Timing	Risk of Bias for Objective and Patient
Serravalle, 2021 <sup>30</sup> Canada 55 2 Controlled before-after	8.20 (1.60) 48% NR SMI: bipolar disorder	Families with a parent having bipolar disorder and having at least 1 biological child between ages 6–11 with fluency in English or French	In-person multi-family group: a 12-week, manual-based prevention intervention program aimed at improving the quality of the caregiving environment while strengthening stress-coping and resilience among the bipolar parents. Sessions are weekly over the 12 weeks and are group sessions for both parent and child. Two-hour sessions follow 3 core modules devoted to the acquisition and practice of skills related to problem-solving, healthy communication, and organization and discipline in the home	Parental positivity and negativity, dyadic mutuality during interactions between bipolar parents and their children, child internalizing and externalizing symptoms	6 months/12 months	Moderate
van der Zanden, 2010 <sup>33</sup> Netherlands 94 1 Uncontrolled before-after (pre/post)	37.0 85% Dutch ethnicity: 90% SMI: depression, bipolar disorder, personality disorder, post-traumatic stress disorder, anxiety disorder, psychosis, eating disorder, alcohol addiction	Parents with mental illness who had custody of their children	Virtual group-based chat: online course consisting of 8, 90-minute weekly sessions in a secured online chat room where participants are communicating with trained mental health workers. The course facilitates the parents' learning potential by highlighting and addressing their shame and guilt about their illness and teaches some general principles of parenting as well as more specific skills. Homework and practice exercises are completed between each session.	Parenting skills: laxness and over-reactivity, sense of parenting competence, parental perceptions of parenting, child well-being	At the end of the 8 sessions/8 weeks	Moderate



Study Country # Enrolled # Arms Design	Mean Age (SD) % Female % Race Population Focus	Study Population	Intervention Type (Description)	Reported Primary Outcomes	Outcome Timing	Risk of Bias for Objective and Patient
Wolfenden, 2022 <sup>29</sup> United Kingdom 10 1 Repeated measures study	32.9 100% White: 80% Black: 20% SMI:schizophrenia	Parents diagnosed with schizophrenia spectrum disorder, who were medication-stable with a child aged 3-10 years old with whom they had more than 10 hours of face-to-face contact per week with no change in care plans and no other parenting support being received	In-person home visitation with counseling: a self-directed variant of the triple P Positive Parenting Program in the form of a manualized self-help workbook was given to the parents. The workbook was designed to change parenting behavior over a 10-week span. Sessional role plays to practice learnt techniques were used to reinforce the development of self-evaluation and problem-solving capabilities	Parenting behavior, Parenting skills, externalizing child behavior, parental hallucinations, parental depression	3 months/6 months	Serious
James Riegler, 2020 <sup>46</sup> United States 41 1 Uncontrolled before-after study (pre/post)	NR NR NR Military: US Veterans eligible to receive services through the VA	Veterans who were a parent or caregiver of a child between the ages of 3 and 9 years	Virtual family home visitation with live coaching intervention: Online Parenting Pro-Tips (OPPT) was a pilot telepsychotherapy parenting skills program for military Veterans that combined web-based educational modules addressing child development and positive parenting with live coaching (via videoconferencing link) of parenting skills. There were 6 sessions with 1 session conducted every 2 weeks	Parental depression, parenting stress, family functioning, child problem behaviors	Approximately 14 weeks	Serious

Notes. <sup>a</sup> Total exceeds 100%.





## APPENDIX D. INTERVENTION CHARACTERISTICS TABLE

### KQ2: POPULATIONS WITH PARENTAL HISTORIES OF SERIOUS MENTAL ILLNESS

<i>Intervention Type</i>									
Study	Target Population	Intervention Name	Original Intervention(s) Adapted for Current Study	Add-Ons or Adaptations	Intervention Techniques (How)	Skills/ Knowledge (What)	Child Involvement	Type of Provider(s)	Dose: Duration, Frequency, Length of Contacts
<i>In-person Home Visitation With Counseling Intervention</i>									
Wolfenden, 2022 <sup>29</sup>	Schizophrenia spectrum disorder	Triple P (Positive Parenting Program)	Triple P (Positive Parenting Program) <sup>39,40</sup>	Because of literacy issues, minor adaptations were made to the delivery of the self-directed workbook and time spent completing practical exercises. Participants required assistance to understand tasks and required support and guidance when planning and implementing the strategies	Curriculum or manual, home-based components: visitations or observations of parent-child interactions at the home, homework, modeling	Child development knowledge and care, emotion communication, positive interactions with child, promoting children's social skills or prosocial behavior, responsiveness/ sensitivity/ nurturing	First author observed parent-child interactions during home visits	Non-licensed trained facilitator (includes graduate students)	Ten sessions of the intervention delivered weekly over 10–14 weeks, lasting 45–60 minutes

<i>Intervention Type</i>									
Study	Target Population	Intervention Name	Original Intervention(s) Adapted for Current Study	Add-Ons or Adaptations	Intervention Techniques (How)	Skills/ Knowledge (What)	Child Involvement	Type of Provider(s)	Dose: Duration, Frequency, Length of Contacts
<i>In-person Multi-family Group Intervention</i>									
Compas, 2009 <sup>34</sup>	Major depressive disorder	Family Group Cognitive Behavioral (FGCB) Preventive Intervention	NR	NR	Curriculum or manual, homework; modeling; rehearsal/role playing/practice, separate child instruction	Discipline and behavior management, positive interactions with child, responsiveness/ sensitivity/ nurturing	Children aged 9–15 years old participated in the family sessions  Parents and children met together in sessions 1-3  During sessions 4-12, parents and children met separately for the bulk of the sessions	Graduate students in clinical psychology; supervision by 2 clinical psychologists	Twelve weekly sessions plus 4 monthly booster sessions
Sanford, 2003 <sup>35</sup>	Major depressive disorder	NR	Two family psychoeducation programs <sup>78,79</sup>  Parent-training model: based on methods from parent education theory, social-learning theory, and family systems theory <sup>80</sup>	NR	Curriculum or manual, homework	Promoting children's social skills or prosocial behavior, emotion communication, positive interactions with child, discipline and behavior management	No child involvement	Nurse, social worker, bachelor's degrees in psychology	Eight weekly 2-hour sessions



<b>Intervention Type</b>									
<b>Study</b>	<b>Target Population</b>	<b>Intervention Name</b>	<b>Original Intervention(s) Adapted for Current Study</b>	<b>Add-Ons or Adaptations</b>	<b>Intervention Techniques (How)</b>	<b>Skills/ Knowledge (What)</b>	<b>Child Involvement</b>	<b>Type of Provider(s)</b>	<b>Dose: Duration, Frequency, Length of Contacts</b>
Serravalle, 2021 <sup>30</sup>	Bipolar disorder	Reducing Unwanted Stress in the Home (RUSH)	Novel program based on cognitive-behavioral approaches (Abramowitz, 2012; Kendell and Hedtke, 2006; Severe, 2000; Shapiro and Sprague, 2009) <sup>81-83</sup>  Parenting program: How to behave so your children will too! <sup>65</sup>	NR	Curriculum or manual, observations of parent-child interactions not at home, separate child instruction	Disciplinary communication, discipline and behavior management, positive interactions with child, emotion communication, promoting children's social skills or prosocial behavior	Separate but concurrent child sessions	Non-licensed trained facilitator (senior graduate students in clinical psychology)	Parents: 12 2-hour sessions over 12 weeks  Child sessions were 1 hour long  Five 15-minute individualized bi-weekly booster calls
<b>Virtual Group-based Chat Intervention</b>									
van der Zanden, 2010 <sup>33</sup>	Parents with mental illness (depression, bipolar disorder, personality disorder, PTSD, anxiety, psychosis, eating disorders, alcohol addiction, autism)	KopOpOuders (translated from Dutch: Chin Up, Parents)	Social learning theory, <sup>84</sup> the theory of developmental psychopathology, <sup>85</sup> and the contextual theory <sup>86</sup>	NR	Curriculum or manual, homework	Child development knowledge and care, discipline and behavior management, emotion communication, positive interactions with child, promoting children's social skills or prosocial behavior	No child involvement	Trained health promotion workers	Eight 90-minute weekly sessions

<b>Intervention Type</b>									
<b>Study</b>	<b>Target Population</b>	<b>Intervention Name</b>	<b>Original Intervention(s) Adapted for Current Study</b>	<b>Add-Ons or Adaptations</b>	<b>Intervention Techniques (How)</b>	<b>Skills/ Knowledge (What)</b>	<b>Child Involvement</b>	<b>Type of Provider(s)</b>	<b>Dose: Duration, Frequency, Length of Contacts</b>
<b>Web-based Self-directed Intervention</b>									
Jones, 2015 <sup>37,56</sup>	Bipolar disorder	Triple P (Positive Parenting Program) - web-based	Triple P (Positive Parenting Program) <sup>39,40</sup>	Parents were provided with a tip sheet of strategies for detecting and coping with fluctuations of their own mood	Curriculum or manual, homework	Disciplinary communication; discipline and behavior management; positive interactions with child; responsiveness/ sensitivity/ nurturing	No child involvement	Electronic/ non-human	Ten weeks
Jones, 2017 <sup>31</sup>	Bipolar disorder	Triple P (Positive Parenting Program) - web-based	Triple P (Positive Parenting Program) <sup>39,40</sup>	Parents were provided with a tip sheet of strategies for detecting and coping with fluctuations of their own mood	Curriculum or manual, homework	Discipline and behavior management, monitoring; positive interactions with child, promoting children's social skills or prosocial behavior, emotion communication, responsiveness/ sensitivity/ nurturing	No child involvement	Electronic/ non-human	Sixteen weeks
Kaplan, 2014 <sup>32</sup> / O'Shea, 2019 <sup>42</sup>	Mothers diagnosed with a schizophrenia spectrum or mood disorder	Parenting Internet Education	Novel program based on cognitive behavioral therapy	NR	Curriculum or manual, homework	Child development knowledge and care, discipline and behavior management, promoting children's cognitive or academic skills	No child involvement	Internet-based asynchronous	Three months of weekly 30-minute sessions



<b>Intervention Type</b>									
<b>Study</b>	<b>Target Population</b>	<b>Intervention Name</b>	<b>Original Intervention(s) Adapted for Current Study</b>	<b>Add-Ons or Adaptations</b>	<b>Intervention Techniques (How)</b>	<b>Skills/ Knowledge (What)</b>	<b>Child Involvement</b>	<b>Type of Provider(s)</b>	<b>Dose: Duration, Frequency, Length of Contacts</b>
<b><i>In-person Individual Family Counseling + Multi-family Group+ Children's Group Intervention</i></b>									
Fernando, 2018 <sup>36</sup>	Major depressive disorder	Kanu-intervention	Family Talk Intervention (FTI) <sup>87</sup> and Children of Mentally Ill Parents (CHIMPs) <sup>88</sup>  Parenting training component: Systematic Training for Effective Parenting (STEP) <sup>41</sup>	NR	Curriculum or manual, separate child instruction	Promoting children's social skills or prosocial behavior, disciplinary communication, discipline and behavior management, emotion communication	Children participated in child group sessions and family sessions	Psychiatrists, psychologists, social workers	Ten individual sessions for parents and children over 6 months  Kanu-parenting: 10 weekly group sessions  Kanu-group program for children and adolescents: 10 weekly group sessions



### KQ3: POPULATIONS WITH PARENTAL HISTORIES OF MILITARY SERVICE

<i>Intervention Type</i>									
Study	Target Population	Intervention Name	Original Intervention(s) Adapted for Current Study	Add-Ons or Adaptations	Intervention Techniques (How)	Skills/ Knowledge (What)	Child Involvement	Type of Provider(s)	Dose: Duration, Frequency, Length of Contacts
<b><i>In-person Individual Family Intervention</i></b>									
Lester, 2016 <sup>45</sup>	Active-duty military families (US Marine Corps and US Navy installations)	Families OverComing Under Stress (FOCUS)	Two evidence-based family prevention programs <sup>89,90</sup>  One family prevention program for families affected by wartime exposure <sup>91</sup>	NR	Curriculum or manual, separate child instruction, rehearsal, role playing, or practice	Child development knowledge and care, emotion communication, promoting children's social skills or prosocial behavior	Children participated in child-only sessions and in family sessions	Psychiatrist	FOCUS was delivered in 8 sessions  Sessions 1, 2, and 5 were parent-only sessions that lasted 90 minutes  Sessions 3 and 4 were child-only sessions that lasted 30 to 60 minutes  Sessions 6–8 were family sessions (time not reported)
<b><i>In-person Multi-family Group Intervention</i></b>									
Gewirtz, 2018 <sup>47</sup>	National Guard and Reserve families with 1 parent who had deployed to recent conflicts (OIF/OEF/OND)	After Deployment, Adaptive Parenting Tools (ADAPT)	Parent Management Training-Oregon model (PMTO) <sup>92</sup>	Adapted for military families and the deployment context	Rehearsal, role playing, or practice, curriculum or manual	Disciplinary communication, emotion communication, discipline and behavior management, positive interactions with child	No child involvement	Trained peer/lay person facilitator	Fourteen weekly 2-hour sessions and home practice assignments



<b>Intervention Type</b>									
<b>Study</b>	<b>Target Population</b>	<b>Intervention Name</b>	<b>Original Intervention(s) Adapted for Current Study</b>	<b>Add-Ons or Adaptations</b>	<b>Intervention Techniques (How)</b>	<b>Skills/ Knowledge (What)</b>	<b>Child Involvement</b>	<b>Type of Provider(s)</b>	<b>Dose: Duration, Frequency, Length of Contacts</b>
Julian, 2018 <sup>93</sup>	Active-duty military or Veteran families	Strong Military Families (SMF)	Mom Power <sup>52</sup>	NR	Curriculum or manual, rehearsal, role playing, or practice, separate child instruction	Responsiveness/ sensitivity/ nurturing, emotion communication, positive interactions with child	Children had separate, concurrent play group. Facilitators guided parents in interactions with child at beginning (separation practice) and end (reintegration practice) of sessions	One master's prepared clinician and 1 other (non-specified) person	Ten parent group sessions, 1-3 individual sessions with facilitators
<b>Virtual Individual Family Intervention</b>									
Mogil, 2021 <sup>43</sup>	Military-connected families with young children	Families OverComing Under Stress-Early Childhood (FOCUS-EC)	Families OverComing Under Stress (FOCUS) <sup>94</sup>	NR	Curriculum or manual, home-based components: visitations or observations of parent-child interactions at the home	Child development knowledge and care, disciplinary communication, discipline and behavior management, emotion communication, positive interactions with child, promoting children's social skills or prosocial behavior, responsiveness/ sensitivity/ nurturing	Children participated in family sessions	Doctoral or master's level mental health provider	Six modules delivered over 4-10 60-90-minute meetings, virtual home-visits  Sessions 1, 2, 4, and 6 were parent-only sessions that lasted 90 minutes  Sessions 3 and 5 were family sessions (time not reported)



<b>Intervention Type</b>									
<b>Study</b>	<b>Target Population</b>	<b>Intervention Name</b>	<b>Original Intervention(s) Adapted for Current Study</b>	<b>Add-Ons or Adaptations</b>	<b>Intervention Techniques (How)</b>	<b>Skills/ Knowledge (What)</b>	<b>Child Involvement</b>	<b>Type of Provider(s)</b>	<b>Dose: Duration, Frequency, Length of Contacts</b>
<b>Virtual Family Home Visitation with Live Coaching Intervention</b>									
Riegler, 2020 <sup>46</sup>	Veteran families	Online Parenting Pro-Tips (OPPT)	I-InTERACT <sup>95</sup>	Only in discussions to include topics relevant to Veterans	Curriculum or manual, homework, home-based components: visitations or observations of parent-child interactions at the home	Positive interactions with child, disciplinary communication, discipline and behavior management	The Veteran and child play under observation in the second half of virtual psychotherapy sessions while the Veteran receives live coaching via an earpiece	Social worker, licensed counselor	Six 30-minute parenting skills sessions and 6 60-minute virtual psychotherapy sessions every 2 weeks





## APPENDIX E. PARENTING SKILLS INTERVENTION PROGRAM CONTENT DESCRIPTIONS

<b>Intervention Skill</b>	<b>Description</b>
Child development knowledge and care	Providing developmentally appropriate physical care and environment (eg, feeding, diapering, home safety); learning about typical child development and behavior; fostering children's positive emotional development (eg, self-esteem, providing stimulating environment)
Positive interactions with child	Learning the importance of positive, non-disciplinary interactions with children; using skills that promote positive parent-child interactions (eg, demonstrating enthusiasm, following child's interests, offering appropriate recreational options); providing positive attention
Responsiveness, sensitivity, and nurturing	Responding sensitively to child's emotional and psychological needs (eg, soothing); providing developmentally appropriate physical contact and affection
Emotion communication	Using relationship-building communication skills (eg, active listening); helping children identify and appropriately express emotions
Disciplinary communication	Giving clear and developmentally appropriate directions; setting limits and rules; stating behavioral expectations and consequences
Discipline and behavior management	Attitudes about discipline strategies; attributions about child misbehaviors; monitoring and supervision practices; techniques, eg, planned ignoring, positive reinforcement, time out; specific reinforcement and punishment techniques; problem solving about child behaviors; consistent responding or generalization
Promoting children's social skills or prosocial behavior	Educating parents to teach children to share and cooperate, use good manners, and get along with peers, siblings, or adults
Promoting children's cognitive or academic skills	Using incidental teaching; fostering children's language or literacy development; enhancing child's school readiness

Notes. Source: Adapted from Kaminski et al 2008.<sup>5</sup>

## APPENDIX F. RISK OF BIAS ASSESSMENTS

### ROB 2 Risk of Bias Assessment for KQ2 Randomized Trials

Study	Risk of bias domains					Overall
	D1	D2	D3	D4	D5	
Compas 2009						
Jones 2015						
Jones 2017						
Kaplan 2014						
Sanford 2003						

Domains:  
 D1: Bias arising from the randomization process.  
 D2: Bias due to deviations from intended intervention.  
 D3: Bias due to missing outcome data.  
 D4: Bias in measurement of the outcome.  
 D5: Bias in selection of the reported result.

Judgement  
 High  
 Some concerns  
 Low

### ROBINS-I Risk of Bias Assessment for KQ2 Nonrandomized Studies

Study	Risk of bias domains							Overall
	D1	D2	D3	D4	D5	D6	D7	
Fernando 2018								
Serravalle 2022								
van der Zanden 2010								
Wolfenden 2022								

Domains:  
 D1: Bias due to confounding.  
 D2: Bias due to selection of participants.  
 D3: Bias in classification of interventions.  
 D4: Bias due to deviations from intended interventions.  
 D5: Bias due to missing data.  
 D6: Bias in measurement of outcomes.  
 D7: Bias in selection of the reported result.

Judgement  
 Serious  
 Moderate  
 Low

### ROB 2 Risk of Bias Assessment for KQ3 Randomized Trials

		Risk of bias domains					
		D1	D2	D3	D4	D5	Overall
Study	Gewirtz 2018	-	+	+	-	-	-
	Mogil 2021	+	+	+	+	+	+

Domains:  
 D1: Bias arising from the randomization process.  
 D2: Bias due to deviations from intended intervention.  
 D3: Bias due to missing outcome data.  
 D4: Bias in measurement of the outcome.  
 D5: Bias in selection of the reported result.

Judgement  
 - Some concerns  
 + Low

### ROBINS-I Risk of Bias Assessment for KQ3 Nonrandomized Studies

		Risk of bias domains							
		D1	D2	D3	D4	D5	D6	D7	Overall
Study	Julian 2018	-	+	+	-	-	+	+	-
	Lester 2016	X	+	+	+	+	+	+	X
	Riegler 2020	X	+	+	+	X	X	+	X

Domains:  
 D1: Bias due to confounding.  
 D2: Bias due to selection of participants.  
 D3: Bias in classification of interventions.  
 D4: Bias due to deviations from intended interventions.  
 D5: Bias due to missing data.  
 D6: Bias in measurement of outcomes.  
 D7: Bias in selection of the reported result.

Judgement  
 X Serious  
 - Moderate  
 + Low

**ROB 2 Risk of Bias Assessment for KQ4 Randomized Trials**

		Risk of bias domains					Overall
		D1	D2	D3	D4	D5	
Study	Gewirtz 2018	-	+	+	-	-	-
	Jones 2015	+	+	X	+	-	X
	Kaplan 2014	-	-	+	X	+	X

Domains:  
 D1: Bias arising from the randomization process.  
 D2: Bias due to deviations from intended intervention.  
 D3: Bias due to missing outcome data.  
 D4: Bias in measurement of the outcome.  
 D5: Bias in selection of the reported result.

Judgement  
 X High  
 - Some concerns  
 + Low

**ROBINS-I Risk of Bias Assessment for KQ4 Nonrandomized Studies**

		Risk of bias domains							Overall
		D1	D2	D3	D4	D5	D6	D7	
Study	Serravalle 2021	-	+	+	+	-	+	-	-
	van der Zanden 2010	-	-	+	+	-	+	+	-
	Wolfenden 2022	X	-	-	+	X	X	+	X

Domains:  
 D1: Bias due to confounding.  
 D2: Bias due to selection of participants.  
 D3: Bias in classification of interventions.  
 D4: Bias due to deviations from intended interventions.  
 D5: Bias due to missing data.  
 D6: Bias in measurement of outcomes.  
 D7: Bias in selection of the reported result.

Judgement  
 X Serious  
 - Moderate  
 + Low

## APPENDIX G. PEER REVIEW DISPOSITION

Comment #	Reviewer #	Comment	Author Response
<i>Are the objectives, scope, and methods for this review clearly described?</i>			
1	1	Yes	Thank you.
2	2	Yes	Thank you.
3	3	Yes	Thank you.
4	4	Yes	Thank you.
5	5	Yes	Thank you.
6	6	Yes	Thank you.
7	7	Yes	Thank you.
8	8	Yes	Thank you.
<i>Is there any indication of bias in our synthesis of the evidence?</i>			
9	1	No	Acknowledged; thank you.
10	2	No	Acknowledged; thank you.
11	3	No	Acknowledged; thank you.
12	4	No	Acknowledged. Thank you.
13	5	No	Acknowledged. Thank you.
14	6	No	Acknowledged. Thank you.
15	7	No	Acknowledged; thank you.
16	8	No	Acknowledged; thank you.
<i>Are there any published or unpublished studies that we may have overlooked?</i>			
17	1	Yes - Please consider adding the following to discussion section: There has been one published study of Parenting STAIR. It is a pre-post, open trial, but has direct relevance to this review and legislation we are responding to. <a href="https://link.springer.com/article/10.1007/s10826-023-02534-y">https://link.springer.com/article/10.1007/s10826-023-02534-y</a>	Thank you for this comment. Please note that the article mentioned here was indexed in Medline after our search. Yet, we did cite and comment on this article in the Discussion section of the report. To address this comment, we have added some additional contextual information in the Discussion section, including how the published uncontrolled before and after study of Parenting STAIR differs from the Parenting STAIR piloted in the VA.

Comment #	Reviewer #	Comment	Author Response
18	1	There is a small literature on preventative interventions for expecting parents with histories of trauma/sexual trauma that may have relevance and has been recently summarized in a review. <a href="https://pubmed.ncbi.nlm.nih.gov/29558671/">https://pubmed.ncbi.nlm.nih.gov/29558671/</a> . See also <a href="https://www.growingforwardtogether.org/">https://www.growingforwardtogether.org/</a>	The review cited here is centered on expectant parents who have histories of child sexual trauma. In consultation with our VA operational partners and the Technical Expert Panel, the key question related to trauma focuses on military sexual trauma and the civilian equivalent of sexual trauma in adulthood. Also the review suggested here is about expectant parents. Our review is focused on parents of children aged 2 to 17. Thus, the suggested review seems to be out of the scope of this current systematic review centered on parents with conditions common among Veterans.
19	2	No	Acknowledged. Thank you.
20	3	No	Acknowledged. Thank you.
21	4	No	Acknowledged. Thank you.
22	5	<p>Yes - Page 6, line 45. "While we did not identify any studies conducted only among parents with PTSD".</p> <p>I'm not seeing the articles below on the included reference lists. While I believe they would both be excluded due to the study selection criteria described earlier in the paper, I did not find them on the list of excluded articles either.</p> <p>Casselman, R. B., &amp; Pemberton, J. R. (2015). ACT-Based Parenting Group for Veterans with PTSD: Development and Preliminary Outcomes. <i>The American Journal of Family Therapy</i>, 43, 57-66.</p> <p>Creech et al. (2022). Pilot Trial of Strength at Home Parents: A Trauma-Informed Parenting Support Treatment for Veterans. <i>Couple and Family Psychology: Research and Practice</i>, 11, 205-216.</p>	<p>Thank you for highlighting these studies. You are correct that our search did not discover these 2 studies.</p> <p>In reference to Casselman (2015): Upon review of our search approach, we note that this journal (and, as a result, this paper) is not indexed in two of the primary databases we searched (MEDLINE and Embase). The journal is indexed in the other two databases we searched – both APA PsycINFO and CINAHL Complete. We believe the article would have shown up among those results. However, we regret that we did not include the keyword "psychoeducation" in our keyword search strategy of titles and abstracts, as the use of that term would have retrieved this particular paper. In reviewing this paper, we have determined it is not eligible for this review. This paper, which has pre-post outcome data for 3 Veterans does not report on any outcomes of interest.</p>

Comment #	Reviewer #	Comment	Author Response
			The article by Creech et al 2022 was published after we executed our search. Thus, we did not have this study in our tables. We have highlighted this study in our Discussion in a section called “Recent Studies and Ongoing Work.”
23	6	No	Acknowledged; thank you.
24	7	No	Acknowledged; thank you.
25	8	No	Acknowledged; thank you.
<i>Additional suggestions or comments can be provided below.</i>			
26	1	<p>Thank you for the extended time to review this draft and report. Overall, this is well done and we appreciate efforts to complete this work on schedule!</p> <p>The numbering and ordering of key questions is not consistent. We prefer that KQs be consistently listed in order of relevance to the legislation...and consistent with the topic nomination: KQ1 = parenting history of sexual trauma, KQ2 = parenting diagnosis of SMI, KQ3 = parent history of military service, KQ4 = intervention characteristics.</p>	Thank you. We have reordered the key questions.
27	1	Please add abbreviations table.	We add an abbreviations table to all final reports. This table has been added to this final report.
28	1	The introduction and future directions sections suggest that military service alone is a risk factor for parenting problems. I think it is more accurate (and may make more sense to the reader) if the rationale for this review is framed around an interest in parent characteristics (particularly history of trauma/SMI in Veterans) that may affect parenting, as opposed to helping parents to manage children with behavioral problems (i.e., focus on parent characteristics vs child characteristics).	Thank you for this comment. The Introduction and Discussion sections have been revised to reflect the focus of this systematic review is on parental stressors common among Veterans.

Comment #	Reviewer #	Comment	Author Response
29	1	Parenting STAIR is not a VA-wide program. Please correct throughout.	Acknowledged
30	1	Please omit several specific inferences and recommendations about national VHA policy that I think are beyond the scope of this review, which I've noted in comments.	We did not intend for this review to be interpreted as making recommendations about national VHA policy. We have revised these selected instances to improve clarity and focus.
31	1	The report title strikes me as a bit clunky and I don't know that "family stressors related to military service" captures our primary focus.	We have revised the title of the report.
32	1	Why use history of sexual assault (rather than history of sexual trauma) as the language of KQ?	In consultation with the technical expert panel assembled for this review, we refined the scope to encompass the civilian equivalent of military sexual trauma, sexual trauma in adulthood, to better align with the original rationale for this systematic review. Sexual assault was the language used in the key questions but our search was inclusive of sexual trauma. We have revised the language to improve clarity throughout the report that the parental exposure is sexual trauma in adulthood.
33	1	[Executive summary second paragraph of introduction] The order in which risk factors are described is a bit confusing. First paragraph in this section is about trauma and second paragraph mentions military history and then SMI (almost as if they were reviewed together, rather than separately), and then military history is discussed again in 3rd paragraph.	We appreciate the reviewer's comments and have revised the Executive Summary and Introduction for clarity.
34	1	[Executive summary second paragraph of introduction] Before switching focus from trauma to SMI, consider adding a brief summary of the potential impact of parent history of sexual trauma in particular (rather than trauma in general). That would round out a description of the rationale for why this report was requested – why nominating partners (and others) do not think more general parenting skills training may not be well-suited to meet the needs of Veterans who have experienced sexual trauma.	Thank you and we have revised the Introduction section and its corresponding elements in the Executive Summary.



Comment #	Reviewer #	Comment	Author Response
		<p>For reference/context, this is the language of the legislative requirement:</p> <p>...conduct a study on the feasibility and advisability of expanding the Parenting STAIR program to all medical centers of the Department of Veterans Affairs and including such program as part of care for military sexual trauma for affected members and former members of the Armed Forces.</p> <p>Parenting STAIR is an intervention that was developed for adult survivors of military sexual trauma who are experiencing parenting difficulties related to their sexual trauma history.</p>	
35	1	[Executive summary last paragraph of introduction] Ditto here about order in which these are listed – would prefer that they are listed in same order consistently, and that ordering align with order of interest.	We have rewritten this paragraph and reordered the topics so they align with the KQs.
36	1	[Executive summary first paragraph of discussion] I believe we shared one in-press manuscript with the team.	This comment is in reference to the recently published article Sullivan, K.S., Ancharski, K., Wortham, W. et al. Feasibility and Preliminary Impact of a Community-Based Intervention for Maternal PTSD and Parenting: Parenting-STAIR Pilot. <i>J Child Fam Stud</i> 32, 481–497 (2023). This article was indexed in Medline after our search. Yet, we did cite and comment on this article in the Discussion section in the draft report. To address this comment, we have added some additional contextual information on this study in the Discussion section and note that there are no published studies of Parenting STAIR among Veterans.
37	1	[Executive summary first paragraph of discussion] It may also be worth clarifying that the focus here is on parenting problems that stem from parent characteristics/experiences rather than child characteristics. I think that’s a useful distinction that helps to frame this review.	We agree this is a useful distinction and have incorporated this change into the Executive Summary, introduction, and Discussion.
38	1	[Executive summary second paragraph of discussion] As our focus is on parenting skills training interventions that are designed for and/or have been tested in our populations of	We have revised the Discussion section and parallel content in the Executive Summary.

Comment #	Reviewer #	Comment	Author Response
		interest (and KQs are framed in terms of parent characteristics), I suggest that this section be organized to match KQs, including a brief discussion of key findings/strength of evidence related to parent characteristics (military service/Veterans, history of trauma/sexual trauma, SMI; i.e., KQ1-3) before description of characteristics of effective programs (KQ4)	
39	1	[Executive summary last sentence of the key findings and strength of evidence section] It's not clear to me which rates are referred to here.	We have revised this section to improve clarity.
40	1	[Executive summary future research section] Given focus of this report, perhaps future research should not explore interventions that are designed to address parenting problems associated with military service/deployment and trauma exposure. In other words, it's not so much the parent population (Veteran/military versus civilian) but developing and testing interventions that are designed to address the specific types of parenting problems experienced by our population of interest.	We appreciate the reviewer's attention to a core consideration for this work. There are diverse factors that impact parenting and people's experience as parents. Given that military service can shape individuals and families in multiple ways (eg, extended deployments that impact family dynamics and patterns, increased risks of exposure to traumas, exposure to different cultures, separation from extended family), it seems likely that interventions for Veteran parents and families should take these experiences and exposures into consideration. Future research could address programmatic adaptations such as timing and frequency of sessions, involvement of other parental caregivers, and opportunities for peer support, which may be relevant for improving outcomes for the populations of interest in this review.
41	1	[Background second paragraph] Parenting problems associated with trauma history, particularly sexual trauma, was intended to be the primary focus of this review. Suggest adding a brief paragraph about potential impacts of sexual trauma on parenting	We have revised the background section in light of this comment to highlight the parenting experiences that are framing the rationale for the review.
42	1	[Background fourth paragraph] Would it be accurate to say that most evidence-based parenting programs are designed to address parenting problems linked with child characteristics as opposed to parent characteristics?	Yes, most evidence-based parenting programs (eg, PCIT, Triple P, Defiant Child) have focused on child characteristics rather than parent characteristics. We have added a note about this to the Executive Summary and Introduction.

Comment #	Reviewer #	Comment	Author Response
43	1	[Background last paragraph] The logic here and link to the impetus for this ESP nomination doesn't follow for me.	We have significantly revised the Background section.
44	1	[Background last paragraph] I'm not sure it's necessary to repeatedly mention the due date for our report. If you want to include due date, it is due to our leadership in November. The finalized and fully cleared report is due to Congress in early January 2024.	Acknowledged
45	1	[Table 1] Military sexual trauma is defined by VA as sexual assault or sexual harassment experienced during military service. This is why I have suggested in various places in report that we replace 'sexual assault' with 'sexual trauma', to align with definition of MST.	We have revised the wording throughout to align with the concept of "military sexual trauma." Our search was sufficiently broad to detect the phenomena of sexual trauma.
46	1	[Table 1] Should be emotion regulation throughout	Acknowledged
47	1	[Discussion first paragraph in reference to "currently implementing"] Not accurate	Acknowledged
48	1	[Discussion first paragraph] Published January 2023: Sullivan, K.S., Ancharski, K., Wortham, W. et al. Feasibility and Preliminary Impact of a Community-Based Intervention for Maternal PTSD and Parenting: Parenting-STAIR Pilot. <i>J Child Fam Stud</i> 32, 481–497 (2023). <a href="https://doi.org/10.1007/s10826-023-02534-y">https://doi.org/10.1007/s10826-023-02534-y</a>	Thank you. Please see response above about this study.
49	1	[Discussion third paragraph of the key findings and certainty of evidence: parents with a history of mental illness] There is not a VA STAIR parenting program. Parenting STAIR is a treatment that was piloted in VA. Rather than try to make that distinction, consider instead noting that ratings were downgraded if the assessed intervention did not align with elements operational partners indicated would enhance feasibility of VA implementation (for instance, a home based intervention is not easily implemented within VA, nor is one involving children or chat-based).	Thank you for this clarification. The Discussion section has been revised.
50	1	[Discussion third paragraph of the key findings and certainty of evidence: parents with a history of mental illness] I disagree. The goal was to identify all parenting interventions appropriate for our patient population and for implementation by VA. A web-based format is feasible to be implemented in VA. It does not make sense to downgrade based on	Thank you. We have clarified how we are operationalizing indirectness for GRADE in the Methods and Discussion sections.

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		similarity/difference from Parenting STAIR which is not evidence-based and has not been nationally implemented in VA.	
51	1	[Clinical and policy implications first paragraph] We are not prioritizing young children over others under age 18. The majority of male and female Veterans are too old to have young children at home.	We appreciate the reviewer's comment about our description of young children, and we have removed this statement.
52	1	[Clinical and policy implications second paragraph] Suggest omitting this statement as comments about national VA policy is outside the scope of this review.	We appreciate the reviewer's comment about our mention of a VHA service which includes integration of spouse caregivers. Although we acknowledge that the particular program we noted is designed to broaden caregiving capacity directly for the Veteran, the program is relevant to our current report. Specifically, parenting programs similarly offer support directed toward the Veteran by addressing family stress. We have modified the text to reflect this perspective.
53	1	[Clinical and policy implications third paragraph in reference to parents who attend with their children] I don't think current evidence is sufficient to support this statement and this is a very broadly stated conclusion that is beyond the scope of this review. I think this remains an empirical questions.	We appreciate the reviewer's comment that there are outstanding questions about the extent to which parental attendance, engagement, and practice are tied to outcomes of parenting programs. However, research supports the idea that parents need to interact with the program material in order to gain benefit from it. We have added references to the text to support this statement.
54	1	[Clinical and policy implications third paragraph] These stressor sound more relevant to post-deployment families (many still military) rather than Veterans.	Given that military service can shape individuals and families in multiple ways (eg, extended deployments that impact family dynamics and patterns, increased risks of exposure to traumas, exposure to different cultures, separation from extended family), it seems likely that interventions for Veteran parents and families should take these experiences and exposures into consideration.
55		[Clinical and policy implications third paragraph in reference to access and flexibility] Isn't this also largely an empirical question? I don't think we know enough about the comparative efficacy of telehealth vs face-to-face parenting skills training, or	We thank the reviewer for noting that research on telehealth parenting interventions is still growing. However, there is emerging evidence that these interventions are effective, and some studies have shown no differences from face-to-face treatment.

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		important implementation factors such as adherence and retention.	We have included some additional references to address these questions.
56	1	[Clinical and policy implications third paragraph regarding internet connection] Which may not be available in all areas of the country, such as highly rural.	Thank you. We mention this in the report
57	1	[Clinical and policy implications fourth paragraph] Not clear which populations are referred to here.	We apologize for the lack of clarity in this statement, and we have edited the text accordingly:
58	1	[Clinical and policy implications fourth paragraph] In what way does type of provider (licensed clinician or peer specialist) affect adherence? I'm not following.	We have revised this sentence for clarity.
59	1	[Clinical and policy implications fourth paragraph] I believe authors are referring to peer specialists, who are employed by VA and trained to use their lived experience of mental health recovery to help patients with mental health concerns (peer specialists' scope is limited to mental health settings).	Yes, the reviewer is correct and we have made this distinction clearer in the report.
60	1	[Clinical and policy implications fourth paragraph] I don't see this (lack of service availability in the community) as primary drawback (of community care). I see disconnect between Veterans VHA care and community care, cost to VA and fit with Veterans' specific parenting problems as key drawbacks.	We appreciate the reviewer's comments that there are multiple potential drawbacks to community care, apart from limited availability of parenting programs more generally. We modified the text to include additional suggestions made by the reviewer.
61	1	[Prior systematic reviews first paragraph] It may also be worth mentioning prior reviews in expecting/new parents with trauma histories, such as: <a href="https://pubmed.ncbi.nlm.nih.gov/29558671/">https://pubmed.ncbi.nlm.nih.gov/29558671/</a>  [Discussion ongoing work section] Another option VHA may want to consider is prevention oriented approaches that target at risk populations. For example, an intervention called Survivor Mom Companion has been tested in open trials in pregnant women/new mothers with trauma histories. One could argue that it may be easier to retain women in care while they are pregnant versus after giving birth, when childcare needs may present a barrier. Julia Seng and Mickey Sperlich PIs of this work. Here's a link to more information: <a href="https://www.growingforwardtogether.org/">https://www.growingforwardtogether.org/</a>	We thank the reviewer for providing information about this important intervention, which could set the stage for positive parental well-being and strong infant-parent attachment, which may reduce the chance of intergenerational transmission of trauma in the population mentioned. Although early intervention and supporting parents and young children during critical stages of development may indeed offset later challenges, the scope of the current report included parenting challenges that are relevant for children ages 2 and older. Including information on pregnancy is beyond the scope of the current report, but we agree that generally increasing support for VHA families, including during the pregnancy and immediate post-partum period, is essential.

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62	1	<p>[Discussion ongoing work section] Parenting STAIR (not VA Parenting STAIR program)</p> <p>Do authors think this study merits more discussion? If study has been published in 2022 instead of January 2023 it would have been included in the review. Parenting STAIR is specifically named in legislation this report responds to and all subjects were diagnosed with PTSD; approx. 1/3 related to sexual trauma.</p>	<p>Thank you. This study has been highlighted in the recent studies section of the report, including how it is substantially different from Parenting STAIR piloted in the VA and named in the legislation.</p>
63	3	<p>The report is well done in many respects but seems overly positive given the limited availability of quality RCTs to inform decision-making. The most valid data do not permit much by way of inferences, so I think the conclusions should be tempered to match the statistically significant evidence from moderate or low ROB trials only.</p>	<p>Thank you for this comment. In collaboration with our VA operational partners, we included a wide range of studies to explore the impact of parenting programs centered on parental characteristic or exposures. The GRADE process takes into account study designs and their risk of bias features. Thus, the certainty of evidence (COE) ratings capture your concerns about study design quality in rating that were generally low. We have included the COE ratings in our conclusion statement to further center findings in light of lower COE.</p>
64	3	<p>[Key findings] It is confusing to see the inclusion of SMI families when the report is focused on military stressors. I am sure readers will understand the content better as they read on, but this initial statement suggests that the report has a broader scope than one would expect based on the title</p>	<p>Thank you. We have revised the title.</p>
65	3	<p>[Methods section of executive summary]</p> <p>Given the interest in sexual assault, it would have been helpful to look at PTSDpubs on ptsd.va.gov</p>	<p>Thank you for this suggestion. We conducted a scan of this database and only found one potentially relevant study our search strategy did not identify. Upon further scrutiny of the full text, this article was also found to be an exclude.</p>
66	3	<p>[KQ4 section of executive summary] I suggest focusing this question on RCTs only</p>	<p>Thank you for this comment. In collaboration with our VA operational partners, we included a wide range of studies to explore the impact of parenting programs centered on parental characteristic or exposures</p>
67	5	<p>1) Page 2, line 50. Inclusion of the parenting outcome of 'emotional regulation' is important as this would likely be a</p>	<p>We agree, and eligible studies needed to have at least one of the parent, family, or child focused outcomes listed in the Methods section.</p>

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		key component of a parenting skills training intervention for Veteran parents seeking care at VA.	
68	5	2) Page 4, line 20. "The 3 studies assessed family functioning": This wording seems a bit awkward. Perhaps, "Among the 3 studies that assessed family functioning, no studies assessed family conflict"?	Thank you for this suggested wording.
69	5	3) Page 6, line 45. "While we did not identify any studies conducted only among parents with PTSD". I'm not seeing the articles below on the included reference lists. While I believe they would both be excluded due to the study selection criteria described earlier in the paper, I did not find them on the list of excluded articles either.  Casselman, R. B., & Pemberton, J. R. (2015). ACT-Based Parenting Group for Veterans with PTSD: Development and Preliminary Outcomes. <i>The American Journal of Family Therapy</i> , 43, 57-66.  Creech et al. (2022). Pilot Trial of Strength at Home Parents: A Trauma-Informed Parenting Support Treatment for Veterans. <i>Couple and Family Psychology: Research and Practice</i> , 11, 205-216.	Thank you for bringing these articles to our attention. The Creech (2022) article was published after we completed our search of the literature. Yet, we do discuss this study in the discussion section where we contextualize recent publication.  The Casselman (2015) study did not meet eligibility criteria as it did not report any outcomes of interest.
70	5	4) Page 6, line 58. "This review identified only one study conducted among Veterans". I think this sentence could benefit by including 'conducted exclusively among Veterans'. On page 1, line 8, "This review identified 14 unique studies: 5 among military-connected families". Certainly, differentiating between Veteran and military-connected populations is a very valid and relevant point particularly for this systemic review. But it wasn't until page 20, line 21 that "Only 1 study was conducted exclusively with Veterans" was mentioned so additional clarification at the beginning might be helpful for the reader.  Also of note, this distinction between parenting interventions for an exclusively Veteran population and an active-duty population is important. Many Veterans receiving VA care have separated from the military years if not decades ago and	Thank you. We have made these changes in the text.

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71	5	<p>many families may have formed after the Veteran’s time in the military. Therefore, parenting content with an emphasis on deployments and returns may be less applicable to the broader Veteran population served by the VA.</p> <p>5) When evaluating these parenting programs, it is also important to consider the feasibility and scalability of implementation across the VA. Parenting interventions, particularly those that involve children, can be challenging to implement in a VA setting due to logistical and administrative difficulties as well as legislative mandates that guide delivery of services and limit the scope of options for treating family members. Additionally, VA facilities are not always designed in a manner to engage family members and children.</p> <p>There are also challenges with ensuring workforce capacity to address the needs of children and families. Mental health providers within the VA are focused on their primary task of treating adult Veterans as mandated by Congress. Therefore, they may not be trained or feel competent in treating families and children.</p> <p>Families also face several barriers such as difficulties with scheduling and lack of childcare and may struggle to engage in lengthy, in-person interventions (page 60, line 39-48). Thus, in considering the parenting programs under discussion relevant questions also include: Who will deliver the intervention? Are VA facilities equipped to provide these interventions (e.g., appropriate spaces for families and children; ‘bug in ear’ equipment)? How long is the protocol? How will providers obtain referrals for the program? What are barriers to engagement for families and how can VA attempt to mitigate these barriers?</p>	<p>Thank you for these thoughtful comments. We have integrated many of these ideas into the revised Discussion section.</p>
72	5	<p>6) Page 22, lines 24 &amp; 51. Interesting to note in both studies (Gewirtz et al., 2018 and Mogil et al. 2021), the majority of families had two parents participating in the program which may differentiate these samples from those in other studies.</p>	<p>We agree and highlight in the Executive Summary that most of the effective programs involved a family systems approach and included a spouse or child.</p>





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73	5	7) Page 29, lines 57-60. Interesting finding that participants experienced difficulty implementing the self-guided workbook and understanding tasks in this particular study. At minimum, a coach or other facilitator may be required for participants to engage, understand, and complete the protocol.	We appreciate the reviewer's observation and have added additional text to the discussion.
74	5	8) Page 36, line 48. "Of note, use of a military-connected facilitator led to greater program participation". This is an interesting finding from one study and potentially relevant to the questions of who will deliver the training protocol and how to increase engagement of participants.	Thank you and we agree. We have highlighted this program.
75	5	9) Page 60, line 45. Another potential benefit of group-based parenting interventions is that they may offer participating parents a network of support and information.	Thank you. We have added this contribution to the Discussion section.
76	5	10) It wasn't clear if any of the included studies measured and reported fidelity to the protocol. Was this evaluated with the ROB domain, 'deviations of intended interventions'?	Fidelity to the protocol is a consideration in the ROB assessment.
77	5	11) I greatly appreciate the comprehensive review of the existing literature in this report. Certainly, there is a need for more high-quality studies in the relevant populations of Veteran parents, and Veteran parents with histories of serious mental illness including PTSD and those with histories of sexual assault. Page 52, line 27, Table 6 is also very helpful. In the Discussion, it may be useful to expand on the last line of 'Timing: Outcomes beyond 12 months' and the implications of this gap in the literature. It might also be helpful to include the cited gaps below in the bulleted Key Findings box at the beginning of the Executive Summary (page 1, line 47): "We did not identify any studies conducted only among parents with PTSD" "Only 1 study was conducted exclusively with Veterans"	Thank you. We have revised the Executive Summary to highlight these critical gaps in the literature.
78	8	Thank you for the additional time, and thank you for all that you've invested in this work. Please see track changes in the attached document.  A few summary points for consideration in addition to those detailed below and in the attachment include: • The way SMI is defined for the purposes of this review would bear elaboration much earlier in the paper than it	Thank you for this comment. We have clarified in the Executive Summary that SMI includes PTSD and MDD. A complete description of how we define SMI is found in the Methods section of the report.

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		occurs. While I note that it is specified later that it includes PTSD and MDD, there is enough variability in what the term “SMI” encompasses that the reader would benefit from knowing how it is characterized specifically in this work as early in the document as possible.	
79	8	<ul style="list-style-type: none"> <li>I am concerned about the use of Parenting STAIR in a way that makes it appear to be a gold standard approach that is already formally implemented within VA. In reality, Parenting STAIR is being piloted (not formally rolled out/nationally implemented) and evidence and applicability in published trials is limited. A related concern is the downgrading of evidence when it did not compare with Parenting STAIR. I am concerned that the act of downgrading may have changed the way some of the outcomes were considered.</li> </ul>	<p>We did not intend for the report to convey that Parenting STAIR piloted in the VHA was a gold standard approach. We have clarified this in the introduction. Also we have clarified how we are operationalizing indirectness for GRADE in the Methods and Discussion sections. We did not downgrade the evidence if it was not comparable to Parenting STAIR piloted in the VHA. Studies were downgraded if they had features that would make VA implementation more challenging (eg., direct involvement of child).</p>
80	8	<p>I concur with the observation that, as currently written in the intro and future directions sections, military service is itself akin to a risk factor in parenting difficulties. We know that many military families are resilient (also noted in this report, p2) and I think focusing on the aspects of the parents that may be impacting parenting capacity and ability may not only be a helpful frame for this work, but also for future directions.</p>	<p>We have revised the introduction and discussion section to clarify that the central rationale for this report is on characteristics of the parent related to SMI and sexual trauma. Yet, military service is associated with many experiences that are often risk factors for parenting difficulties (family separations, stress, trauma), but these do not impact everyone the same way. As such, adapting parenting skill interventions to account for military service as a context can be a helpful future research direction.</p>
81	8	<ul style="list-style-type: none"> <li>There are aspects of family reintegration following deployment that may benefit from inclusion(comment on p.9 ), to provide additional context to the multiple stressors that affect families across the continuum of Veteran service eras.</li> </ul>	<p>Thank you. We have added reintegration as a family stressor.</p>
82	8	<ul style="list-style-type: none"> <li>Formatting observations:                             <ul style="list-style-type: none"> <li>-Outcomes of interest: Study selection section on p.2 gives examples of outcomes. It would be useful to the naïve reader to have an overview list or table of the outcomes considered across the studies allow for deeper understanding reading the</li> </ul> </li> </ul>	<p>Thank you for this observation. Such information is typically not provided in the Executive Summary. We detail the outcomes in Table 1, PICOTS eligibility table, which is located on page 3 of the main report.</p>

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		report from the beginning. Figure 4 captures them nicely (starting p. 25) but an earlier overview would be better.	
83	8	Suggest reviewing all mentions of statistical significance as there was significant variability in how these were documented. Some used italicized values for p, d, others did not, etc.	We have addressed this inconsistency.