Evidence Synthesis Program

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

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This report was prepared by the Evidence Synthesis Program Center located at the **Durham VA Medical Center,** directed by Jennifer M. Gierisch, PhD, MPH, and Karen M. Goldstein, MD, MSPH and funded by the Department of Veterans Affairs, Veterans Health Administration, Health Services Research and Development.

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

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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Technical Expert Panel

To ensure robust, scientifically relevant work, the TEP guides topic refinement; provides input on key questions and eligibility criteria, advising on substantive issues or possibly overlooked areas of research; assures VA relevance; and provides feedback on work in progress. TEP members are listed below:

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The Coordinating Center sought input from external peer reviewers to review the draft report and provide feedback on the objectives, scope, methods used, perception of bias, and omitted evidence (see Appendix G for disposition of comments). Peer reviewers must disclose any relevant financial or non-financial conflicts of interest. Because of their unique clinical or content expertise, individuals with potential conflicts may be retained. The Coordinating Center works to balance, manage, or mitigate any potential nonfinancial conflicts of interest identified.

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FIGURES AND TABLES

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

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.[1,2] 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.[3-6] Yet the majority of evidence-based behavioral parenting programs have centered on the child's presentation, including behavioral or emotional challenges,[7] 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.[8]

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.[9-12] 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.[12] Among Veterans, an important source of excess family stress is a parental history of sexual trauma, including military sexual trauma.[13] Differences in parenting practices have been observed in both civilian and Veteran populations among women with sexual trauma.[8] For example, mothers with histories of sexual trauma can have impaired interactions with their infants[14] and be less sensitive and more intrusive with school-age children.[15] 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.[16,17] Similarly, parents with depression report lower levels of parenting self-efficacy, which can worsen parental depression and positive parenting practices.[18]

Military Veterans are at high risk for experiencing stressors that can impact parenting practices.[14,19,20] 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,[21,22] a known contributor to

parenting challenges.[20] While not all military-connected families will experience negative family sequala 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.[23,24] 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.[25] Moreover, there is evidence that parental mental health may not impede the benefits of parenting skills training programs.[26]

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.[27] 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[a]	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: KQ1: Military sexual trauma or other sexual trauma in adulthood KQ2: Serious mental illness (SMI) as determined by meeting 1 of the following criteria: • 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) • 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) KQ3: Military service in the United States or other countries' armed forces, including those now separated from service (*ie*, Veterans) KQ1-3: Any mixed populations comprised of conditions/exposures listed for KQ1-3 if meeting 75% or more of the overall study population	• Family caregivers who are not primary caregivers • Parents of infants and children under age 2 • Mixed populations of infants and children if the children under age 2 comprise 25% or more of the total population • Inpatient populations • Imprisoned populations
Intervention	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	• 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) • Peer or professional led support groups without manualized content • Multi-modal programs that include individualized or group adjunctive psychotherapies (*eg,* cognitive behavioral therapy,

Study Characteristic	Inclusion Criteria	Exclusion Criteria
	Parenting skills programs may include enhancements (*eg*, additional psychoeducation) that aim to address needs of specific parent groups (*eg*, SPMI, sexual trauma, military service) Qualifying programs can be delivered: • Virtually or in-person • Individually or in groups • Synchronously (video, telephone) or asynchronously (*eg,* self-paced video tutorials on a website)	dialectics behavioral therapy) aimed at improving the mental health condition of the parent without parenting skills training components
Comparators[b]	Any comparator (*eg*, usual care, active comparator, historical controls)	No comparator
Outcome[b]	KQ1-3: • Parent outcomes (*ie*, emotion regulation, positive parenting skills, parenting knowledge, parenting self-efficacy, parental stress) • Family outcomes (*ie*, family conflict, family functioning) • Child outcomes (*ie*, disruptive behaviors) KQ4: Characteristics of effective parenting programs such as: • Content (*eg*, use of home-based components or visitations, homework or practice between sessions, observations of parent-child interactions) • Format (*eg*, group-based, virtual, involvement of child in parenting program) • Dose • Recruitment technique, enrollment, engagement or adherence, or • Implementation factors (*eg*, barriers or facilitators to implementation, qualifications of the interventionist, satisfaction with training program)	Any outcomes not listed
Setting	• Community or outpatient setting • Virtual or in-person setting	• Inpatient care • Residential programs • Prison
Study design	• Randomized trials • Nonrandomized trials • Controlled before-after studies • Interrupted time-series studies or	• Descriptive studies with no outcomes data • Qualitative studies • Case reports and case studies

Study Characteristic	Inclusion Criteria	Exclusion Criteria
	repeated measures studies • Prospective and retrospective cohort studies • Uncontrolled before-after studies (*ie*, pre-post study).	with no outcome information • Studies that included only outcomes data from 1 point in time (post only, uncontrolled clinical study) • Modeling studies that used simulated data • Not a clinical study (*eg*, editorial, nonsystematic review, letter to the editor) May also exclude if there are many studies: • Self-described pilot studies without adequate power to assess impact of intervention on outcomes. • Studies of small sample sizes (N < 100)
Countries	OECD[c]	Non-OECD
Publication types	Full publication in a peer-reviewed journal	• Letters, editorials, reviews, dissertations, meeting abstracts, protocols without results • Publications in predatory journals[d] (*eg*, rapid pay-to-publish models without rigorous peer review)

Notes. [a] 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.
[b] Primary studies had be comparative in design. Yet outcomes for KQ4 did not need to be comparative (*eg*, satisfaction with intervention, barriers, facilitators).
[c] 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.
[d] 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* [28] 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.[28] 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?)

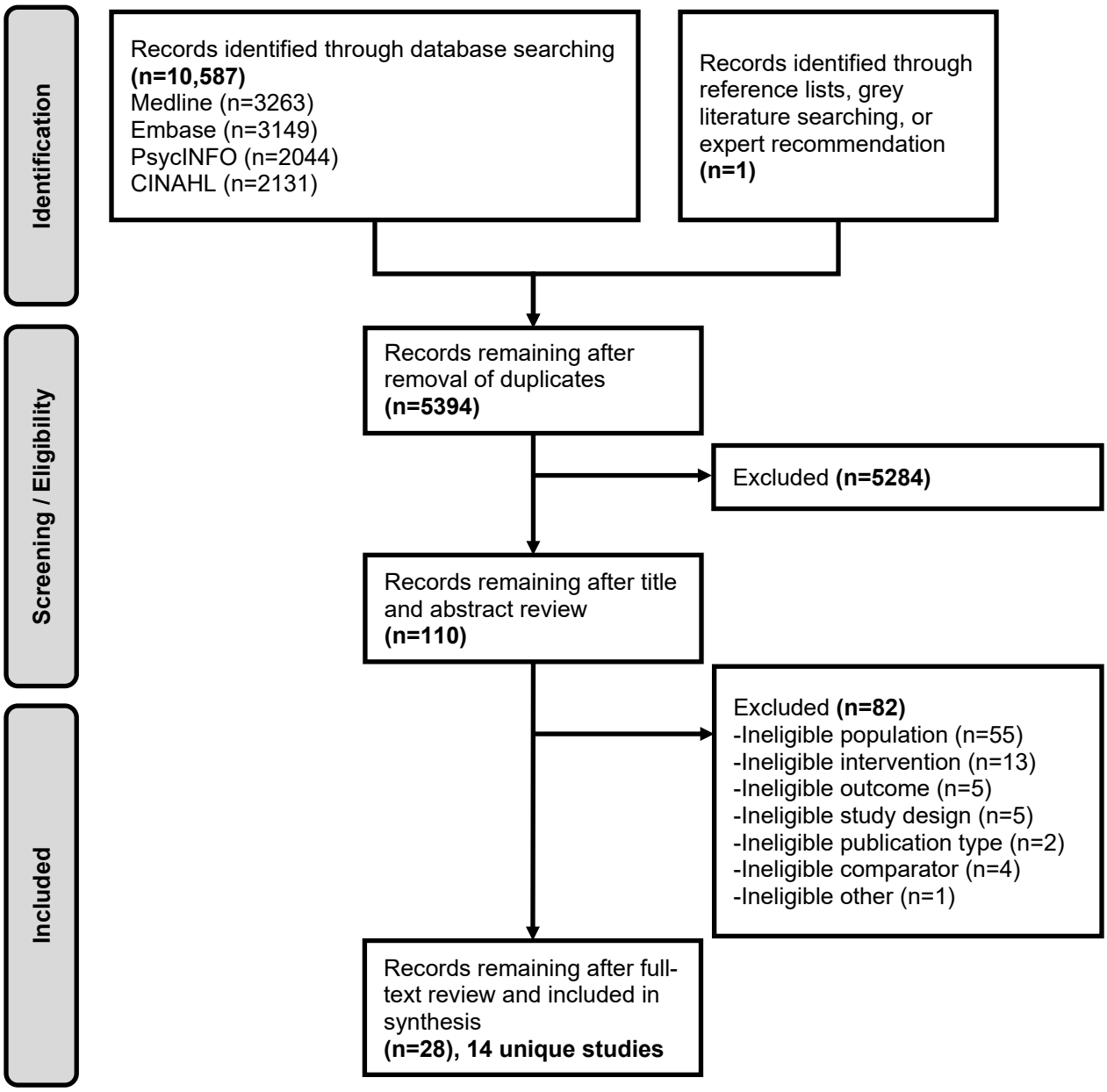
Additional domains to be used when appropriate are coherence, dose-response association, impact of plausible residual confounders, strength of association (magnitude of effect), and publication bias. These domains were considered qualitatively, and we assigned a summary COE rating after discussion by 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. Because no studies in parents with sexual trauma in adulthood were located and because our search strategy was sufficiently broad to capture lifetime sexual trauma, we reexamined studies excluded during full-text screening to determine whether any studies were conducted among parents with sexual trauma earlier in life. We found no studies in parents with childhood sexual trauma that also met all other eligibility criteria.

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[29-38] (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[29,33,35] being conducted in studies of less than 50 participants. Studies recruited parents with the following conditions: MDD (3 studies,[34-36] N = 445), schizophrenia spectrum disorder (2 studies,[29,32] N = 141), bipolar disorder (3 studies,[30,31,37] N = 230), and mixed population of SMI conditions (1 study,[33] N = 48).

Parenting programs used 4 main intervention modes: in-person multi-family groups (4 studies[30,34-36]), in-person home visits with a self-directed workbook (1 study[29]), an online chat-based group (1 study[33]), and web-based self-directed modules (3 studies[31,32,37]). 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[35,36] and 3 using graduate students[29,30,34] 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,[31,32,34,35,37] 3[32,35,37] of which had high ROB.[30,33,35] Two studies[30,36] were controlled before-after designs (moderate ROB), 1[29] study used a repeated measures design with serious ROB, and 1 was an uncontrolled before-after study with moderate ROB.[33] 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[32,35,37], 1 low ROB[31]), 1 uncontrolled before-after study,[33] 1 controlled before-after study,[30] and 1 repeated measures study.[29] Most studies (5 out of 7) reported a significant impact of the parenting skills training interventions on parenting skills.[29,30,32,33,37] 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),[35] 1 controlled before-after study (moderate ROB),[30] and 1 uncontrolled before-after study (moderate ROB)[33] 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.[35] 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.[30] 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 ($p < 0.001$).

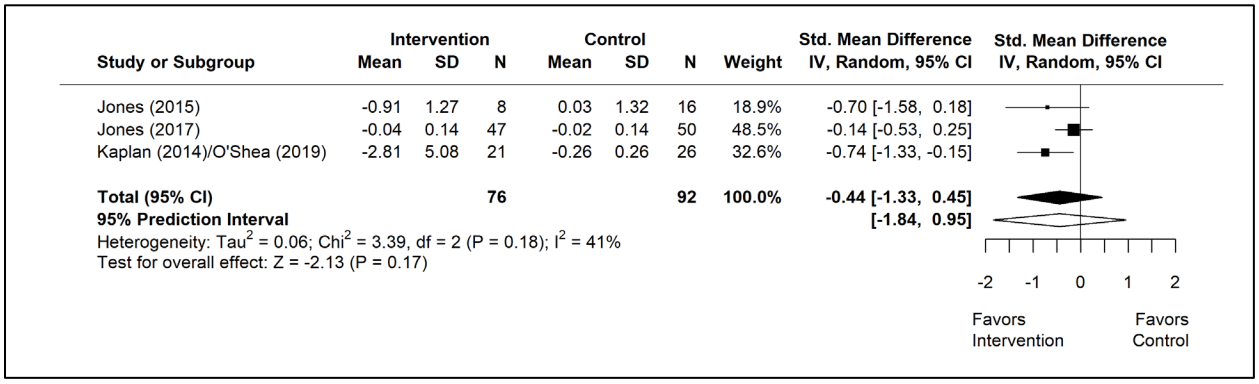
The uncontrolled before-after study enrolled 48 parents with a broad range of SMI conditions and assessed the impacts of an online intervention consisting of 8 90-minute weekly group sessions for parents only that took place in a secured online chatroom.[33] Participants were given homework and practice 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[31,32,37] assessed the impact of self-paced online programs on parenting skills. The first RCT (low ROB) [31] 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)[37] 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),[32] 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.[29] 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,[32,35] 1 low ROB[31]), 1 uncontrolled before-and-after study[33] with moderate ROB, and 1 repeated measures study[29] 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[35] and 1 serious ROB uncontrolled before-after study[33] 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)[31] found that 16 weeks of the web-based Triple P Positive Parenting Program[39,40] resulted in significant improvements in parenting confidence for parents with bipolar disorder, compared with waitlist control ($p < 0.01$). The other RCT (high ROB)[32] 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)[29] of 10 mothers with schizophrenia spectrum disorder, a self-help variant of the Triple P Positive Parenting Program[39,40] 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.[31] 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;[32,35] 1 low ROB[31]) and 2 controlled before-after studies[30,36] (moderate ROB). Only 2 studies [30,35] 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[30,36] and 1 high ROB RCT.[35] 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[30] 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[36] 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[31] (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[32] (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[30,35] 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.[30]

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,[37] 1 low ROB,[31] 1 with some concerns ROB[34]), 2 controlled before-after studies (both with moderate ROB),[30,36] 1 uncontrolled before-after study[33] (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),[34] 2 controlled before-after studies (moderate ROB),[30,36] and 1 uncontrolled before-after study (moderate ROB)[33] 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[36] 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,[33] 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)[31] 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),[37] 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[29] of 10 mothers with schizophrenia spectrum disorder, a self-help Triple P workbook [39,40] 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[29,31,36,37] 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[36]), home-based program (1 study[29]), and web-based self-directed program (2 studies[31,37]). 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[31,37] (3 studies[29,31,37]) and Systematic Training for Effective Parenting[41] (1 study[36]) (Table 3).

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

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

Notes. [a]Light blue shading indicates that an outcome was reported in the study. Dark blue shading indicates an outcome that was statistically significant.
[b]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[43-47] (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[43,45,47]). One[44] 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).[46]

Parenting programs used 3 main interventions: individual family therapy (1 in-person[45], 1 via videoconferencing[43]), in-person multi-family groups (2 studies[44,47]), and virtual home visits with live coaching (1 study[46]). 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[47] directly involved the child as part of the parenting skills training program. Child involvement was variable across studies. The 2 individual family therapy interventions[43,45] had at least 2 sessions where children attended family therapy with the parent(s). An in-person multi-family[44] 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.[46]

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[47] 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[43,47] (1 low ROB,[43,47]1 with some ROB concerns[43,47]). 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[44] (moderate ROB), 1 repeated measures design[45] (serious ROB), and1 uncontrolled[46] 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)[47] 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)[48] 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[43] and a serious ROB[46] 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[43] 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.[45,49,50] 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 though 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[46] 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 miliary 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[47,51] (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.[52] 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,[43] a repeated measures design,[45] and an uncontrolled before-after study[46] (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[43] 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[45] 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[46] 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[43] (low ROB), 1 repeated measures study[45] (serious ROB), and 1 uncontrolled before-after study[46] (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[43] 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,[45] 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.[46] 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[a] / Study	Parent Outcomes					Family Outcomes		Child Outcomes
	Parenting Skills	Parent Knowledge	Parent Self Efficacy	Parent Stress	Emotion Regulation	Family Functioning	Family Conflict	Child Behavioral Problems
KQ1: Populations With Parental Histories of Military Service								
In-person Individual Family Intervention								
Lester, 2016[45]						■		■
In-person Multi-family Group Intervention								
Gewirtz, 2018[47b]	■				■			
Julian, 2018[44]					■			
Virtual Individual Family Intervention								

Intervention Type[a] / Study	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[43b]								
Virtual Family Home Visitation With Live Coaching Intervention								
Riegler, 2020[46]								

Notes. [a] Light blue shading indicates an outcome was reported in the study. Dark blue shading indicates a statistically significant outcome.
[b] 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[47,53] 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[29,30,33,37,38,42] (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,[30,33,38,54] and 3 serious/high ROB[29,32,37] (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;[32,37] 1 online chat group[33]) and half used a group-based format.[30,33,38,54] For those delivered in person, 1 used a home-based program[29] and 2 studies[30,38,47,53] 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[32,37,42] were self-directed internet-based programs with no interventionists to deliver the content. One of these online programs[32] 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-[42] to 2-hour[33]-long sessions over the course of 8[33] to 14[47,53] weeks. The 2 asynchronously self-directed internet-based studies[32,37,42] ranged from 10 weeks to 3 months (Table 5).

Table 5. Characteristics of Effective Parenting Skills Training Programs

Intervention Type Study and Design	Target Population (n)	Intervention Name (Parenting Skills Training Program)	Intervention Techniques	Child Involvement	Provider Type	Dose
KQ1: Populations with Parental Histories of Military Service						
In-person Multi-family Group Intervention						
Gewirtz, 2018[47,53] 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)[48]	Rehearsal, role playing, or practice, curriculum or manual	No	Trained peer/lay person facilitator, including military-connected facilitator	Fourteen weekly 2-hour sessions
KQ2: Populations with Parental Histories of Serous Mental Illness						
Home-based Self-help Workbook With Facilitated Engagement						
Wolfenden, 2022[29] Repeated measures study	Schizophrenia spectrum disorder (*N* = 10)	Triple P (Positive Parenting Program)[39,40]	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
In-person Multi-family Group Intervention						
Serravalle, 2021[30,38] 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![55]	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 Study and Design	Target Population (n)	Intervention Name (Parenting Skills Training Program)	Intervention Techniques	Child Involvement	Provider Type	Dose
Virtual Group-based Chat Intervention						
van der Zanden, 2010[33] 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
Web-based Self-directed Intervention						
Jones, 2015[37] RCT	Bipolar Disorder (*N* = 78)	Triple P (Positive Parenting Program) [39,40]	Curriculum or manual, homework	No	Electronic/ non-human	Ten weeks
Kaplan, 2014[32]/ O'Shea, 2019[42] 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[29,37,56] were based on the Triple P Positive Parenting Program,[39,40] and 1[47,53] on the Parent Management Training-Oregon Model (PMTO).[47,48,53] One intervention was based on a program in the lay press.[55] Based on a coding scheme used in a CDC-sponsored systematic review[5] 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.[29,30,38] The study by Wolfenden et al[29] incorporated an in-home visit for parent-child observations, while Serravalle et al[30,38] 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[47,53]	N	Y	Y	Y	Y	Y	N	Y	6
Jones, 2015[37]	N	Y	N	Y	Y	Y	Y	N	5
Kaplan, 2014[32] / O'Shea, 2019[42]	Y	N	N	N	N	Y	N	Y	3
Serravalle, 2021[30,38]	N	Y	N	Y	Y	Y	Y	N	5
van der Zanden, 2010[33]	Y	Y	N	Y	N	Y	Y	N	5
Wolfenden, 2022[29]	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[37,56] 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.[57]

Adherence to Intervention

Only 4 of the studies reported on adherence to the intervention. In the ADAPT intervention,[47,53,57] 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.[30,38] In contrast, an online chat group intervention reported low levels of intervention engagement as measured by website usage and completed sessions.[33] 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[29] of 10 parents with psychosis. In sum, 50% of the parents with psychosis completed all 10 weekly sessions.

Participant Satisfaction

Three studies[29,33,54,57] 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,[54,57] participants reported high satisfaction with group sessions (mean = 3.44, SD = 0.48; range: 0 to 4). The online group chat intervention[33] also reported high program satisfaction (mean = 7.8; SD = NR, range: 1–10). The final study[29] 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[29] 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 at least 1 of the parents was a survivor of military sexual trauma or other sexual trauma in adulthood. 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)
Group-based In Person			
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);	**Low certainty** (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)	**Very low certainty** (downgraded for serious ROB, serious indirectness, and serious imprecision)
Group-based Chat Only			
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	**Very low certainty** (downgraded for serious ROB, serious

Outcome	Number of Studies	Findings	Certainty of Evidence (Rationale)
			indirectness, and serious imprecision)
Home-based			
Parenting skills	1 observational study (5 patients)	Total parenting: t = 8.9, d = 3.28, p = 0.003	**Very low certainty** (downgraded for serious ROB, serious indirectness, serious imprecision)
Web-based Self-directed			
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	**Very low certainty** (downgraded for serious ROB, serious indirectness, and serious imprecision)
Group-based In Person			
Parenting self-efficacy	1 RCT (25 patients)	Sense of parenting competence: F = 3.7, df 30, (p = 0.06)	**Low certainty** (downgraded for serious ROB, serious imprecision)
Group-based Chat Only			
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	**Very low certainty** (downgraded for serious ROB, serious indirectness, serious imprecision)
Home-based			
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	**Very low certainty** (downgraded for serious ROB, serious indirectness, and very serious imprecision)
Web-based Self-directed			
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	**Very low certainty** (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 HFPI parental efficacy: t = –1.39, d = 0.24, p = 0.17	indirectness, and serious imprecision)
Web-based Self-directed			
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	**Moderate certainty** (downgraded for serious indirectness)
In-person Individual + Group			
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])	**Very low certainty** (downgraded for serious ROB, serious indirectness, and serious imprecision)
In-person Group-based			
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	**Low certainty** (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)	**Very low certainty** (downgraded for serious ROB, serious indirectness, and serious imprecision)

Outcome	Number of Studies	Findings	Certainty of Evidence (Rationale)
Web-based Self-directed			
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: $t = –0.2$, $d = 0.07$, $p = 0.84$	**Very low certainty** (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)
In-person Group			
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	**Low certainty** (downgraded for serious ROB, and serious indirectness)
Virtual Individual			
Parental stress	1 RCT (349 patients)	Change in baseline to 12 months = 1.43, *d* = 0.20, *p* > 0.05	**Moderate certainty** (downgraded for serious indirectness)
Virtual Home Visitation Live Coaching			
Parental stress	1 observational study (22 patients)	t test=*t*(19) 4.36, *p* -0.0003, *d* = 0.98	**Very low certainty** (downgraded for serious ROB, serious indirectness, and serious imprecision)
In-person Group			
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	**Low certainty** (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	**Very low certainty** (downgraded for serious ROB and serious imprecision)

Outcome	Number of Studies	Findings	Certainty of Evidence (Rationale)
In-person Individual			
Family functioning/ conflict	1 observational study (3,499 patients)	Decrease in unhealthy family functioning: (0.19 ± 0.01, $p < 0.0001$)	**Very low certainty** (downgraded for serious ROB and serious indirectness)
Virtual Home Visitation Live Coaching			
Family functioning/ conflict	1 observational study (22 patients)	Family functioning *t test* 2.41 ($p = 0.03$), $X^2=2.15$, $d = 0.53$	**Very low certainty** (downgraded for serious ROB, serious indirectness, and serious imprecision)
Virtual Individual Counseling			
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, $d = 0.39$, $p < 0.001$	**Moderate certainty** (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.[58] 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.[59,60] 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[61,62]: 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,[63] 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[47]), 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. Similarity, 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.[64] 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.[44,47] 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.[65] 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[66] 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.[66] 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[67] 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.[68] 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.[69] 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[67] 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[66,67,70] 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.[71] 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 section, 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 military sexual trauma or other sexual trauma in adulthood, 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.[72] 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[73] 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.[74] 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.[74] 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.[45] 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
Population	• Parents with histories of military sexual trauma and adult sexual trauma • Parents with histories of PTSD • Parents with mixed populations of SMI conditions • Veterans with children under the age of 18
Intervention	• Peer-to-peer individual approaches • Peer facilitator-led groups • Interventions that assess the minimum amount of facilitated engagement needed to improve key outcomes (*eg,* self-directed + some group or individual support)
Comparator	• Head-to-head comparisons of virtual vs in-person modes • Direct comparison of peer-led versus provider-led parenting groups • Direct comparison of the additive effects of direct child involvement
Outcomes	• Parental knowledge • Parental stress • Parental emotion regulation • Family conflict and overall family functioning • Participant satisfaction
Timing	• Outcomes beyond 12 months to assess sustainment of key parent, family, and 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. 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.[1,67] 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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