

APPENDIX A. SEARCH STRATEGIES

MEDLINE AND EMBASE

1	(barrier\$1 or facilitat* or intervention\$1 or audit* or feedback or academic detail\$1 or implement* adj3 (intervention* or model* or plan* or process* or strateg* or system*) or approach* adj3 (collaborative or complementary or comprehensive or innovative or integrated) or Treatment uptake or intervention uptake or referral practice* or treatment preference* or engagement or disseminat* or adopt* or sustain* or acceptance or acceptability or feasibility or attitude* or Incentive structure* or allowance structure* or accreditation or plan do study act or needs assessment or learning collaborat* or credentialing or licensure or implementation blueprint or quality monitor* or resource sharing or champions or early adopters or opinion leaders or network weaving or local technical assistance or scale up or train*).ti,ab,kw
2	Practice patterns, physicians/ or attitude of health personnel/ or health services accessibility/ or patient acceptance of health care/ or clinical decision-making/ or physician-patient relations/ or patient participation/ or Reimbursement, Incentive/ or accreditation/ or needs assessment/ or credentialing/
3	1 or 2 (All implementation terms)
4	(veteran or veterans).ti,ab,kw
5	Veterans/ or Veterans Health/ or United States Department of Veterans Affairs/
6	4 or 5 (all veteran terms)
7	Integrated delivery system*.ti,ab,kw
8	Delivery of health care, integrated/
9	7 or 8 (all integrated delivery system terms)
10	6 or 9 (combined veteran and integrated delivery terms)
11	((chronic adj2 pain) or (pain and (musculoskeletal or (low adj back) or neck or shoulder or hip or knee or joint))).ti, ab, kw
12	Chronic Pain/ or low back pain/ or shoulder pain/ or back pain/ or musculoskeletal pain/ or neck pain/
13	11 or 12 (all pain terms)
14	((CBT or cognitive behavioral therap* or cognitive therap* or prolonged exposure therap* or cognitive processing therap* or problem?solving t* or cognitive psychotherapy* or ACT or (acceptance commitment therap*) or MBSR or (mindfulness?based stress reduction) or mindful* or meditat* or (psychological adj1 therap*) or (behavioral adj1 therap*)) or DBT or dialectical behavior* therap* or family therap* or couples therap* or implosive therap* or mind-body therap* or interpersonal therap* or contingency management or social skills training or motivational enhancement therap* or present?centered t*).ti,ab,kw
15	Cognitive Behavioral Therapy/ or Mind-Body Therapies/ or Implosive Therapy/ or Dialectical Behavior Therapy/ or Family Therapy/ or Couples Therapy/ or Implosive Therapy / or interpersonal psychotherapy/
16	14 or 15 (all intervention terms)
17	3 and 10 and 16 (Implementation terms, intervention terms, and veteran/integrated care terms)
18	3 and 13 and 16 (implementation terms, intervention terms, and pain terms)
19	17 or 18 (implementation and intervention terms with veteran/integrated delivery or pain terms)
20	Limit 19 to English language

CINAHL

1	barrier\$1 or facilitat* or intervention\$1 or audit* or feedback or “academic detail\$1” or implement* N3 (intervention* or model* or plan* or process* or strateg* or system*) or approach* N3 (collaborative or complementary or comprehensive or innovative or integrated) or “Treatment uptake” or “intervention uptake” or “referral practice*” or “treatment preference*” or engagement or disseminat* or adopt* or sustain* or acceptance or acceptability or feasibility or attitude* or “Incentive structure*” or “allowance structure*” or accreditation or “plan do study act” or “needs assessment” or “learning collaborat*” or credentialing or licensure or “implementation blueprint” or quality monitor* or “resource sharing” or champions or “early adopters” or “opinion leaders” or “network weaving” or “local technical assistance” or “scale up or train*”)
2	(MH "Practice Patterns") or (MH "Attitude of Health Personnel") or (MH "Health Services Accessibility+") or (MH "Decision Making, Clinical+") or (MH "Physician-Patient Relations") or (MH "Consumer Participation") or (MH "Reimbursement, Incentive") (MH "Accreditation+") or (MH "Needs Assessment") or (MH "Credentialing+")
3	1 or 2 (All implementation terms)
4	veteran or veterans
5	(MH "Veterans+") or (MH "Veterans Health Services") or (MH "Hospitals, Veterans") or (MH "United States Department of Veterans Affairs")
6	4 or 5 (all veteran terms)
7	Integrated delivery system*
8	(MH "Health Care Delivery, Integrated")
9	7 or 8 (all integrated delivery system terms)
10	6 or 9 (combined veteran and integrated delivery terms)
11	(“chronic N2 pain”) or “musculoskeletal pain” (“low N1 back pain”) or “neck pain” or “shoulder pain” or “hip pain” or “knee pain” or “joint pain”
12	(MH "Chronic Pain") or (MH "Low Back Pain") or (MH "Shoulder Pain") or (MH "Back Pain+") or (MH "Neck Pain")
13	11 or 12 (all pain terms)
14	CBT or “cognitive behavioral therap*” or “cognitive therap*” or “prolonged exposure therap*” or “cognitive processing therap*” or “problem#solving t*” or “cognitive psychotherapy*” or ACT or “acceptance commitment therap*” or MBSR or “mindfulness#based stress reduction” or mindful* or meditat* or “psychological N1 therap*” or “behavioral N1 therap* or DBT or “dialectical behavior* therap*” or “family therap*” or “couples therap*” or “implosive therap*” or “mind-body therap*” or “interpersonal therap*” or “contingency management” or “social skills training” or “motivational enhancement therap*” or “present# centered t*”
15	(MH "Cognitive Therapy+") or (MH "Mind Body Techniques+") or (MH "Behavior Therapy+") or (MH "Dialectical Behavior Therapy") or (MH "Family Therapy") or (MH "Couples Counseling") or (MH "Interpersonal Psychotherapy")
16	14 or 15 (all intervention terms)
17	3 and 10 and 16 (Implementation terms, intervention terms, and veteran/integrated care terms)
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19	17 or 18 (implementation and intervention terms with veteran/integrated delivery or pain terms)
20	Limit 19 to English language

PSYCIINFO

1	(barrier\$1 or facilitat* or intervention\$1 or audit* or feedback or academic detail\$1 or implement* adj3 (intervention* or model* or plan* or process* or strateg* or system*) or approach* adj3 (collaborative or complementary or comprehensive or innovative or integrated) or Treatment uptake or intervention uptake or referral practice* or treatment preference* or engagement or disseminat* or adopt* or sustain* or acceptance or acceptability or feasibility or attitude* or Incentive structure* or allowance structure* or accreditation or plan do study act or needs assessment or learning collaborat* or credentialing or licensure or implementation blueprint or quality monitor* or resource sharing or champions or early adopters or opinion leaders or network weaving or local technical assistance or scale up or train*).ti,ab,hw,id
2	Practice patterns, physicians/ or exp Health Personnel Attitudes/ or health services accessibility/ or patient acceptance of health care/ or clinical decision-making/ or physician-patient relations/ or exp Client Participation/ or Reimbursement, Incentive/ or accreditation/ or exp Needs Assessment/ or credentialing/
3	1 or 2 (All implementation terms)
4	(veteran or veterans).ti,ab,hw,id
5	exp Military Veterans/ or Veterans Health/ or United States Department of Veterans Affairs/
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12	Chronic Pain/ or low back pain/ or shoulder pain/ or exp Back Pain/ or musculoskeletal pain/ or neck pain/
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15	exp Cognitive Behavior Therapy/ or exp Mind Body Therapy/ or exp Implosive Therapy/ or exp Dialectical Behavior Therapy/or exp Family Therapy/ or exp Couples Therapy/or exp Implosive Therapy/ or exp Interpersonal Psychotherapy/
16	14 or 15 (all intervention terms)
17	3 and 10 and 16 (Implementation terms, intervention terms, and veteran/integrated care terms)

APPENDIX B. ELIGIBILITY CRITERIA

INCLUSION CRITERIA

	KQ 1	KQ 2
Populations	Community-dwelling adults with chronic pain (<i>ie</i> , pain \geq 3 months; described as “chronic pain”; or included pain conditions such as fibromyalgia or arthritis)	Community-dwelling adults with chronic mental health conditions
Interventions	<ul style="list-style-type: none"> • Cognitive behavioral therapy • Mindfulness-based stress reduction • Acceptance & commitment therapy 	<ul style="list-style-type: none"> • Cognitive behavioral therapy • Mindfulness-based stress reduction • Acceptance & commitment therapy • Cognitive processing therapy • Interpersonal psychotherapy • Prolonged exposure therapy • Cognitive behavioral conjoint therapy • Contingency management • Couples & family therapy • Social skills training • Dialectical behavioral therapy • Present centered therapy • Motivational enhancement therapy • Problem solving therapy
Comparators	Any (active or inactive)	
Outcomes	Pre-implementation studies: <ul style="list-style-type: none"> • Patient-, provider-, and system-level barriers and facilitators Evaluations of implementation strategies: <ul style="list-style-type: none"> • Reach—uptake by target population • Effectiveness—patient outcomes, cost-effectiveness • Adoption—uptake by clinical staff (<i>eg</i>, participation in delivery, referrals) • Implementation—consistency and fidelity • Maintenance—sustainability 	Pre-implementation studies: <ul style="list-style-type: none"> • Provider- and system-level barriers and facilitators
Timing	Any duration	
Setting	Any outpatient setting (including telehealth or mobile technology) in US, UK, Ireland, Canada, or Australia	Integrated healthcare delivery systems, outpatient setting (including telehealth or mobile technology) in US, UK, Ireland, Canada, or Australia
Study Design	RCTs or observational studies	
Other	English language	

EXCLUSION CRITERIA

Populations	End-of-life (in hospice and/or \leq 6 mo life expectancy); pain caused by advanced stage cancer (<i>eg</i> , bone metastases); receiving urgent or acute medical therapy for pain-causing condition (<i>eg</i> , chemotherapy, radiation, or surgery)
Interventions	Yoga, Taichi, Qigong
Settings	Acute care (<i>ie</i> , emergency rooms and inpatient floors) or institutional settings (<i>eg</i> , nursing homes)
Study Design	Reviews, study protocols, editorials, case reports

APPENDIX C. CONSOLIDATED FRAMEWORK FOR IMPLEMENTATION RESEARCH (CFIR) DEFINITIONS*

Topic/Domain	Definition	Short Code
I. Intervention Characteristics		
A. Intervention Source	Perception of key stakeholders about whether the intervention is externally or internally developed.	I-Source
B. Evidence Strength & Quality	Stakeholders' perceptions of the quality and validity of evidence supporting the belief that the intervention will have desired outcomes.	I-Evidence
C. Relative Advantage	Stakeholders' perception of the advantage of implementing the intervention versus an alternative solution.	I-Advantage
D. Adaptability	The degree to which an intervention can be adapted, tailored, refined, or reinvented to meet local needs.	I-Adapt
E. Trialability	The ability to test the intervention on a small scale in the organization [8], and to be able to reverse course (undo implementation) if warranted.	I-Trial
F. Complexity	Perceived difficulty of implementation, reflected by duration, scope, radicalness, disruptiveness, centrality, and intricacy and number of steps required to implement	I-Complexity
G. Design Quality and Packaging	Perceived excellence in how the intervention is bundled, presented, and assembled	I-Design
H. Cost	Costs of the intervention and costs associated with implementing that intervention including investment, supply, and opportunity costs.	I-Cost
I. Group Dynamics	For group treatments, interactions between participants (or with facilitator) that impact patient experience and/or outcomes	I-Group dynamics
J. Patient-Therapist Dynamics	Patient-therapist interactions during individual therapy that impact patient experience and/or outcomes	I-Patient-therapist dynamics
II. Intervention Characteristics		
A. Patient Needs & Resources	Patient needs and resources (whether or not these are known to the health care system)	OS-Patient needs
B. Cosmopolitanism	The degree to which an organization is networked with other external organizations.	OS-Cosmo
C. Peer Pressure	Mimetic or competitive pressure to implement an intervention; typically because most or other key peer or competing organizations have already implemented or in a bid for a competitive edge.	OS-Peer pressure

D. External Policy & Incentives	A broad construct that includes external strategies to spread interventions including policy and regulations (governmental or other central entity), external mandates, recommendations and guidelines, pay-for-performance, collaboratives, and public or benchmark reporting.	OS-Ext policy
E. Patient Knowledge & Beliefs	Individuals’ attitudes toward and value placed on the intervention as well as familiarity with facts, truths, and principles related to the intervention.	OS-Patient know
F. Other Patient Attributes	A broad construct to include other personal traits such as tolerance of ambiguity, intellectual ability, motivation, priorities, competence, capacity, and learning style. Also includes demographics and other patient characteristics that do not fit under A or E above.	OS-Patient other
G. General Practice Climate & Patterns	Practices and models of care in the broad community of providers (outside of specific clinic or health system).	OS-General practice
III. Inner Setting		
A. Structural Characteristics	The social architecture, age, maturity, and size of an organization.	IS-Structure
B. Networks & Communications	The nature and quality of webs of social networks and the nature and quality of formal and informal communications within an organization.	IS-Networks
C. Culture	Norms, values, and basic assumptions of a given organization.	IS-Culture
D. Implementation Climate	The absorptive capacity for change, shared receptivity of involved individuals to an intervention and the extent to which use of that intervention will be rewarded, supported, and expected within their organization.	
1. Tension for Change	The degree to which stakeholders perceive the current situation as intolerable or needing change.	IS-Change tension
2. Compatibility	The degree of tangible fit between meaning and values attached to the intervention by involved individuals, how those align with individuals’ own norms, values, and perceived risks and needs, and how the intervention fits with existing workflows and systems.	IS-Compatible
3. Relative Priority	Individuals’ shared perception of the importance of the implementation within the organization.	IS-Priority
4. Organizational Incentives & Rewards	Extrinsic incentives such as goal-sharing awards, performance reviews, promotions, and raises in salary and less tangible incentives such as increased stature or respect.	IS-Incentives
5. Goals and Feedback	The degree to which goals are clearly communicated, acted upon, and fed back to staff and alignment of that feedback with goals.	IS-Goals
6. Learning Climate	A climate in which: a) leaders express their own fallibility and need for team members’ assistance and input; b) team members feel that they are essential, valued, and knowledgeable partners in the change process; c) individuals feel psychologically safe to try new methods; and d) there is sufficient time and space for reflective thinking and evaluation.	IS-Climate

E. Readiness for Implementation	Tangible and immediate indicators of organizational commitment to its decision to implement an intervention.	
1. Leadership Engagement	Commitment, involvement, and accountability of leaders and managers with the implementation.	IS-Leader engage
2. Available Resources	The level of resources dedicated for implementation and on-going operations including money, training, education, physical space, and time.	IS-Resources
3. Access to knowledge and information	Ease of access to digestible information and knowledge about the intervention and how to incorporate it into work tasks.	IS-Knowledge access
F. Provider Decision-making	Decision-making processes regarding referrals, selection of treatment options, etcetera (may be collaborative or shared-decision making).	IS-Provider decisions
G. Patient-Provider Relationships	Relationship or rapport between patients and clinicians outside of intervention context (eg, those making referrals to MH).	IS-Patient-provider
IV. Characteristics of Individuals		
A. Knowledge & Beliefs about the Intervention	Individuals' attitudes toward and value placed on the intervention as well as familiarity with facts, truths, and principles related to the intervention.	C-Knowledge
B. Self-efficacy	Individual belief in their own capabilities to execute courses of action to achieve implementation goals.	C-Self-efficacy
C. Individual Stage of Change	Characterization of the phase an individual is in, as he or she progresses toward skilled, enthusiastic, and sustained use of the intervention.	C-Change stage
D. Individual Identification with Organization	A broad construct related to how individuals perceive the organization and their relationship and degree of commitment with that organization.	C-Org ID
E. Other Personal Attributes	A broad construct to include other personal traits such as tolerance of ambiguity, intellectual ability, motivation, values, competence, capacity, and learning style.	C-Other attributes
V. Process		
A. Planning	The degree to which a scheme or method of behavior and tasks for implementing an intervention are developed in advance and the quality of those schemes or methods.	P-Planning
B. Engaging	Attracting and involving appropriate individuals in the implementation and use of the intervention through a combined strategy of social marketing, education, role modeling, training, and other similar activities.	
1. Opinion Leaders	Individuals in an organization who have formal or informal influence on the attitudes and beliefs of their colleagues with respect to implementing the intervention	P-Opinion lead
2. Formally appointed internal	Individuals from within the organization who have been formally appointed with responsibility for implementing an intervention as coordinator, project manager, team leader, or other similar role.	P-Formal lead



implementation leaders		
3. Champions	“Individuals who dedicate themselves to supporting, marketing, and ‘driving through’ an [implementation]” [101](p. 182), overcoming indifference or resistance that the intervention may provoke in an organization.	P-Champions
4. External Change Agents	Individuals who are affiliated with an outside entity who formally influence or facilitate intervention decisions in a desirable direction.	P-Ext agents
C. Executing	Carrying out or accomplishing the implementation according to plan.	P-Executing
D. Reflecting & Evaluating	Quantitative and qualitative feedback about the progress and quality of implementation accompanied with regular personal and team debriefing about progress and experience.	P-Reflecting

* Bolded subdomains are novel adaptations for this project

APPENDIX D. ADAPTED QUALITY ASSESSMENT CRITERIA

OTTAWA-NEWCASTLE (MODIFIED)

Selection

1) Representativeness of sample

- a) Yes—representative of the population, with clear sampling strategy and rationale
- b) No—convenience sample, etc.
- c) Unclear—sample not described

2) Ascertainment of condition

- a) Medical record or clinical diagnosis
- b) Other
- c) Unclear—not described
- d) Not Applicable

Intervention

1) Implementation strategy and rationale

- a) Yes—strategy and rationale clearly described
- b) No—strategy not clear and/or no rationale provided
- c) not applicable

Outcome

1) Appropriate outcome assessment

- a) Yes—Data sources, variable definitions and rationale clearly described.
- b) No—measures/metrics not well described or use of inappropriate data sources

2) Follow-up and response rates

- a) Complete follow-up and/or adequate response rate ($\geq 60\%$)
- b) High # lost to follow-up or inadequate response rate
- c) Unclear

3) For implementation trials (ie, testing specific strategy), was the follow-up sufficient for implementation outcomes (eg, sustainability, maintenance of effects)

- a) Yes—sufficient follow-up
- b) Not sufficient
- c) Not Applicable

Ethics

1) Has the relationship between researcher and participants been adequately considered?

HINT: Consider

- If the researcher critically examined their own role, potential bias and influence during (a) formulation of the research questions (b) data collection, including sample recruitment and study setting
- How the researcher responded to events during the study and whether they considered the implications of any changes in the research design

- a) Yes
- b) Can't tell
- c) No

2) Have ethical issues been taken into consideration?

HINT: Consider

- If there are sufficient details of how the research was explained to participants for the reader to assess whether ethical standards were maintained
- If the researcher has discussed any issues raised by the study (e.g. issues around informed consent or confidentiality, or how they handled the effects of the study on the participants during and after the study)
- If approval has been sought from the ethics committee
 - a) Yes
 - b) Can't tell
 - c) No

CRITICAL APPRAISAL SKILLS PROGRAMME (MODIFIED)

1. Was there a clear statement of the aims of the research?

HINT: Consider

- what was the goal of the research
 - why it was thought important
 - its relevance
- a) Yes
 - b) Can't tell
 - c) No

2. Is a qualitative methodology appropriate?

HINT: Consider

- If the research seeks to interpret or illuminate the actions and/or subjective experiences of research participants
 - Is qualitative research the right methodology for addressing the research goal
- a) Yes
 - b) Can't tell
 - c) No

3. Was the research design appropriate to address the aims of the research?

HINT: Consider

- if the researcher has justified the research design (e.g. have they discussed how they decided which method to use)
- a) Yes
 - b) Can't tell
 - c) No

4. Was the recruitment strategy appropriate to the aims of the research?

HINT: Consider

- If the researcher has explained how the participants were selected
 - If they explained why the participants they selected were the most appropriate to provide access to the type of knowledge sought by the study
 - If there are any discussions around recruitment (e.g. why some people chose not to take part)
- a) Yes
 - b) Can't tell

c) No

5. Was the data collected in a way that addressed the research issue?

HINT: Consider

- If the setting for the data collection was justified
- If it is clear how data were collected (e.g. focus group, semi-structured interview etc.)
- If the researcher has justified the methods chosen
- If the researcher has made the methods explicit (e.g. for interview method, is there an indication of how interviews are conducted, or did they use a topic guide)
- If methods were modified during the study. If so, has the researcher explained how and why
- If the form of data is clear (e.g. tape recordings, video material, notes etc.)
- If the researcher has discussed saturation of data

a) Yes

b) Can't tell

c) No

6. Has the relationship between researcher and participants been adequately considered?

HINT: Consider

- If the researcher critically examined their own role, potential bias and influence during (a) formulation of the research questions (b) data collection, including sample recruitment and choice of location
- How the researcher responded to events during the study and whether they considered the implications of any changes in the research design

7. Have ethical issues been taken into consideration?

HINT: Consider

- If there are sufficient details of how the research was explained to participants for the reader to assess whether ethical standards were maintained
- If the researcher has discussed issues raised by the study (e.g. issues around informed consent or confidentiality or how they have handled the effects of the study on the participants during and after the study)
- If approval has been sought from the ethics committee

a) Yes

b) Can't tell

c) No

8. Was the data analysis sufficiently rigorous?

HINT: Consider

- If there is an in-depth description of the analysis process
- If thematic analysis is used. If so, is it clear how the categories/themes were derived from the data
- Whether the researcher explains how the data presented were selected from the original sample to demonstrate the analysis process
- If sufficient data are presented to support the findings
- To what extent contradictory data are taken into account
- Whether the researcher critically examined their own role, potential bias and influence during analysis and selection of data for presentation

a) Yes

- b) Can't tell
- c) No

9. Is there a clear statement of findings?

HINT: Consider whether

- If the findings are explicit
- If there is adequate discussion of the evidence both for and against the researcher's arguments
- If the researcher has discussed the credibility of their findings (e.g. triangulation, respondent validation, more than 1 analyst)
- If the findings are discussed in relation to the original research question

- a) Yes
- b) Can't tell
- c) No

APPENDIX E. PEER REVIEW DISPOSITION

	Reviewer Comments	Authors' Responses
Reviewer 2:		
2.1	<p><i>"I have generally only praise for this excellent report. I have no significant substantive concerns, and my comments are primarily editorial in nature.</i></p> <p><i>I note that the Executive Summary is over 30 pages, and the full report is about three times as long. If feasible, I think that it could be useful to try to shorten the Executive Summary to better isolate and highlight key findings. In particular, it seems possible to more succinctly present some of the details of the methods in the Executive Summary."</i></p>	<p>Thank you.</p> <p>We have edited the Methods in the Executive Summary to be more succinct. Currently, the Methods are less than 2 pages and we note that we are reporting methods information that is strongly recommended for systematic reviews (eg, by PRISMA). We agree that the Executive Summary is on the longer side, but this is largely due to the amount of results that cover quite a broad scope across the 2 KQ.</p>
2.2	<p><i>"I think that it would be helpful to add some background information, presumably from the HSR&D SOTA on nonpharmacological approaches to management of chronic musculoskeletal pain, that provides a justification and rationale for focusing solely on CBT, ACT and mindfulness approaches when examining the literature on evidence based approaches for management of chronic pain. That is, why were hypnosis, biofeedback, meditation and other self-regulatory approaches not considered, given that they each have evidence of efficacy for at least some subgroups of patients with chronic pain and since they are all in use in at least some VHA facilities?"</i></p>	<p>We included CBT-CP, ACT, and MBSR since these EBPs have demonstrated efficacy for improving chronic pain outcomes (as noted by the HSR&D SOTA on non-pharmacological approaches to management of chronic musculoskeletal pain), are included in treatment guidelines for chronic pain and are being delivered in VHA settings, making implementation research a logical next step. We understood these priorities to be those of the requesting Operational Partners as well. We have commented on the rationale further in the Introduction and Methods.</p> <p>Several self-management strategies, and provider-delivered strategies not involving conscious psychotherapy with participants, have some evidence supporting their use as treatments for chronic pain. As these vary broadly with respect to roles of patients and providers, necessary technologies, and other clinical resources, it is likely that relevant barriers, facilitators, and implementation work would be distinct from those relevant to EBPs as well. Accordingly, these approaches to chronic pain care were considered beyond the scope of this review. Should these treatments be high priority for VA stakeholders, we would encourage that future systematic reviews to evaluate evidence for implementation of these self-management strategies and provider-delivered strategies beyond participatory psychotherapy.</p>
2.3	<p><i>"Similarly, the expanded group of psychotherapies that were considered in addressing KQ2 might be justified. And, in interpreting the findings from this search, I think that it could be important to expand a bit on fairly obvious differences in some of</i></p>	<p>We have edited the Discussion to expand on the differences of the KQ2 psychotherapy approaches relative to those employed for chronic pain management and have clarified that there may be different barriers and facilitators for therapies for non-pain conditions.</p>

	Reviewer Comments	Authors' Responses
	<p><i>these approaches (e.g., CPT and PE for PTSD) and those employed for chronic pain management. In this context, it seems likely that it could be important to acknowledge that, although depressive and anxiety disorders and PTSD commonly co-occur with chronic pain, they are distinct disorders with clinical characteristics that could be serve to elicit distinctly different barriers and facilitators for implementation and widespread adoption... “</i></p>	
<p>2.4</p>	<p><i>“Consistently use CBT or CBT-CP; probably the former, since ACT and MBSR are not hyphenated when denoting that the intervention was for chronic pain.</i></p> <p><i>Page 3, Line 60 – “Over half” not “galf.”</i></p> <p><i>Be consistent in referencing “gender” and use “sex” only when referring to sex as a biological variable.</i></p> <p><i>Be consistent using “VHA” rather than “VA.”</i></p>	<p>We agree that this distinction is important and that our search identified uses of CBT for chronic pain that might not formally be considered CBT-CP. In some articles, including those evaluating the national VHA rollout of CBT for chronic pain, CBT approaches were specifically described as a standardized form of CBT for chronic pain and abbreviated as CBT-CP (Stewart et al 2015, Murphy et al 2020, Higgins et al 2018). We have kept the term CBT-CP when referring to findings from those articles, and have removed the “CP” suffix from other mentions of CBT.</p> <p>This has been corrected.</p> <p>We agree it is important to use accurate descriptions of gender and sex. None of the included articles defined gender, sex, race or ethnicity, and most used secondary analyses of administrative or medical chart data. Accordingly, we could not independently determine whether gender or sex was assessed in the articles. We used gender or sex terminology consistent with the terms authors used to describe their results. We have edited Methods and Results to clarify this process and ensure consistency throughout the text. We have now noted in Results the finding that no included articles clearly defined sex, gender, race or ethnicity and that we could not verify the accuracy of these terms as applied to the data analyzed. We agree that there is significant concern regarding the use of how gender and sex are assessed and considered in analyses, and in the Discussion, we raised this issue with the published literature. We have added to our suggestions for future research the need to analyze these proxies, along with race and ethnicity, accurately and with clear purpose.</p> <p>We have confirmed consistent use of “VHA” throughout the report. By convention, we refer to non-VA community settings, as these are entirely outside of VA programs (not just VHA facilities and clinics). We have also</p>

	Reviewer Comments	Authors' Responses
	<p><i>Page 23 – Spell out acronyms (e.g., CBSST, MET).”</i></p>	<p>used “VA” or “VHA” if this was part of participant quotes as reported by included studies.</p> <p>Per ESP Coordinating Center guidance, acronyms should be spelled out at first use and then abbreviated thereafter. We confirmed that all acronyms are spelled out at first use and included in the Abbreviations Table found at the end of the Executive Summary.</p>
Reviewer 5:		
<p>5.1</p>	<p><i>“Page 11, Line 34 – Under “Key Results,” it is noted first here (but several times in manuscript), that they included “cultural and communication barriers.” I have searched the results and there appears to be only a single qualitative look at GPs impressions re: CBT on which this finding is based. The GPs (in the UK I believe) mention that a specific group (South Asians in this case) could perhaps be better served with more culturally sensitive materials/this approach may not work well for that culture. Since this is reported as a Key Finding, I thought this would at least be present in 2 studies and/or would be from a patient standpoint vs a GP opinion (who admittedly in the same study also said they did not fully understand CBT options) and/or would be more generalizable. While I am not arguing against this as a basic point in probably all treatment, since there is really not evidence to support it I am concerned about it being listed here as a key barrier to CBT.</i></p> <p><i>It seems important when it comes to key findings that it comes up in more than 1 study and has more generalizable implications. Or if it is from a single qualitative study to note it as you have below.”</i></p>	<p>We agree that Patel et al 2009 is the only study we found in which primary care providers noted cultural barriers to CBT use for chronic pain specifically. It is also the only study we found focused on primary care providers’ perspectives regarding barriers to CBT use for chronic pain – and in that sense, 100% of such studies identified cultural barriers to CBT use for chronic pain. As we noted in the report, an additional study of CBT providers’ perspectives on CBT use for other mental health conditions noted cultural and language barriers as a theme (Amodeo et al 2011). No studies explored roles of culture, race, sex, gender, or social factors in patients’ own views or experiences of EBPs, and it is difficult to infer that this absence of evidence is evidence of absence.</p> <p>We do not use a quantitative criterion for determining key results. Even in reviews focused on data from randomized controlled trials, 1 large, high-quality study may be definitive in determining the key results. As much of the evidence in this review comes from qualitative studies, we find that quantifying the frequency of studies (as an indicator of the importance of reported results) to be potentially even more problematic. There were few studies that examined certain areas (eg, provider and system level factors for KQ 1), and studies varied greatly in comprehensiveness of evaluations. Thus, we used iterative rounds of discussion and consensus-building to arrive at our synthesis of results, with the goal of emphasizing those findings that are most likely to be important and/or point to key questions needing further research. We agree that current evidence are insufficient to indicate specific areas of need for cultural or social adaptations to EBPs. As the reviewer notes, additional research is needed to clarify roles of cultural and communication barriers in EBP uptake. We have edited the Executive Summary and Discussion to reflect this.</p>

	Reviewer Comments	Authors' Responses
5.2	<p><i>“Page 35, Line 22 (Page 37, Line 4) – The heterogeneity in treatment response is mentioned several times in the manuscript; however, I could not find these differences summarized succinctly. The results re: demographics, etc. seemed highly variable re: possible impacts on treatment effects. Is it possible to explain in a more direct way about the heterogeneity in treatment response? Do these not work for most or for only certain groups, types of pain, etc.?”</i></p>	<p>Heterogeneity in both treatment effects and treatment uptake is evident in research on EBPs, for chronic pain and for other behavioral health conditions, yet research on patient-level factors affecting both types of heterogeneity is limited to date. We found a wide range of patient-level factors related to uptake of EBPs for chronic pain, as noted in the report; some of these, such as patient beliefs about therapies or about pain, have especially plausible relationships to treatment effects as well. Our findings with respect to patient-level demographic factors related to treatment uptake were highly variable, as this reviewer notes and as we noted in the report. Further, as noted in the report and in comments above, conceptual and data-related definitions of many demographic variables were not well reported. More consistent and substantive assessment of heterogeneity in both treatment effects and treatment uptake, in both observational work and RCTs, can help clarify more patient-level targets for both effectiveness and implementation work – and can ensure clarity as to which factors affect treatment effectiveness, implementation, or both. We have edited the Executive Summary and Discussion to clarify these points.</p>
5.3	<p><i>“Page 37, Line 56-57 – Since there was no information re: group implementation of CBT-CP and limited info on individual delivery of the other modalities, it seems that a future research interest may be gathering more of this data.</i></p>	<p>We agree it is an important finding that no studies analyzed barriers, facilitators, or implementation strategies for group CBT for chronic pain, individual ACT for chronic pain, or individual MBSR for chronic pain. While MBSR was developed in a group format for chronic pain as well as for other mental health conditions, both CBT and ACT are provided regularly in both group and individual formats. We have edited the Implications section to draw more attention to the importance of group vs individual therapy formats in evaluation, and have edited the Research Gaps/Future Research section to indicate the need for future research on format-specific effectiveness and implementation work for both CBT and ACT for chronic pain.</p>
5.4	<p><i>“Page 38, Line 11 – States to “Describe reach for EBPs associated with implementation strategies, such as VHA national training programs for EBPs” – What does this mean exactly and where would like to see it described? In general, the EBP Program has a transparent training structure, make available its information re: number of providers trained, etc. The tracking of encounters using many EBPs has been a challenge within VHA for a variety of reasons including IT barriers, etc. This may be more of an internal ask versus a future research question?”</i></p>	<p>In our Discussion, we summarized findings regarding Adoption (eg, number of providers using EBPs) but also highlighted the need to evaluate Reach, defined as the number and representativeness of patients who are using the recommended treatments. As noted by the reviewer, there are challenges to assessing Reach, and we have added this consideration to the Discussion. However, we believe that Reach remains critical for evaluation of implementation strategies (within VHA and in the community). Additionally, we have expanded the RE-AIM definitions in the Methods to better distinguish between Adoption and Reach.</p>

	Reviewer Comments	Authors' Responses
Reviewer 6:		
6.1	<p><i>“Minor comments</i> <i>p. 9, lines 8 through 17 – I recommend bold/italics for the key differences between KQ1 and KQ2 (e.g., chronic pain vs chronic mental health conditions).</i> <i>p. 10, line 60 – galf = half</i> <i>p. 11, lines 30/31 – should be “except” (instead of excepting)</i> <i>p. 21, lines 51/52 – need to remove ‘d’ from “received”</i> <i>p. 42, lines 7/8 to 9 – Phrasing is a little unusual, maybe change to, “Across 2011 and 2012, chronic pain was estimated...”</i> <i>p. 45, lines 17/18 – there is an underline before Consolidated that needs to be removed.”</i></p>	<p>We have bolded the words “chronic pain” (KQ 1) and “chronic mental health conditions” (KQ 2). We have also made the remaining corrections.</p>
6.2	<p><i>Content-related comments</i> <i>p. 9, lines 17/18 – Why are not patient barriers mentioned as part of KQ2a?</i></p> <p><i>p. 10, lines 10/11 – RE-AIM is not specifically for evaluating implementation strategies per se, but implementation more broadly. Do you want to make that distinction?”</i></p>	<p>In the Introduction, we have expanded on the rationale of including evidence on implementation of psychotherapies for non-pain conditions. Because the main goal of our stakeholders was to improve implementation of therapies for chronic pain, we considered that there would be more concerns with applicability of evidence for patient-level barriers and facilitators when these were non-pain populations. Therefore, KQ 2 focuses on provider and system-level barriers and facilitators. We have also added this clarification to the Methods (Topic Development in the main text).</p> <p>RE-AIM is 1 of several frameworks commonly used to guide evaluations of implementation of clinical and public health interventions (eg, see Hagedorn et al. <i>Addict Sci Clin Pract</i> 2014;9:12). Among the ones we examined, we also felt that it was the most helpful for organizing results from implementation evaluation studies.</p>
6.3	<p><i>“p. 21, lines 7-9 – I realize you are looking at the effect of implementation strategies, but I think it would be good to provide a summary of the implementation strategies used in this section, before describing effects of implementation strategies. This also applies to p. 68 where this section starts in the body of the report.”</i></p>	<p>We have included a new subheading “Implementation Strategies Evaluated” to provide a summary of implementation strategies in both the Executive Summary and Results.</p>
6.4	<p><i>p. 21, line 17 – you describe “uptake by target patient population.” We usually refer to that as reach and not uptake in the implementation realm. Might be good to use reach, particularly since you’re using RE-AIM.”</i></p>	<p>We now use the term reach to describe uptake by target patient population and adoption to describe adoption by clinical staff in the Executive Summary and Results Section.</p>

	Reviewer Comments	Authors' Responses
6.5	<i>p. 22, lines 47/48 – I see you leave out “Reach.” Was it really left out of the outcomes? If so, I would be more definitive about that in the last sentence of lines 44 to 45 and the accompanying section in the report. I see on p. 73 that these are the only adoption measures across implementation strategies.</i>	We have clarified in the Executive Summary and Results that no results in this classification group reported on Reach.
6.6	<i>p. 23, lines 3 to 7/8 - Your definition of adoption includes willingness to adopt, but self-efficacy is not quite that. Maybe this more of a facilitator? Positive attitudes has the same issue to me. This would of course need to be resolved throughout.</i>	For evaluations of implementation strategies, we categorized provider attitudes and self-efficacy within Adoption, as the most appropriate domain. As reported by study authors, these provider factors were assessed to improve understanding about why some providers will (or will not) use certain EBPs. Thus, they directly address the issue of Adoption, per the RE-AIM framework. We have clarified this classification in the Methods, and note it also in the relevant Results section.
6.7	<i>p. 68, line 44 – Would it be possible to start a new paragraph describing the implementation strategies used? I keep wanting that framing when reading about strategies. It is buried a bit and could be its own section describing definitions of implementation strategies.</i>	See response to #6.3 above
6.8	<i>p. 97, first bullet point - I think that you want to highlight that you recommend “tailored patient educational materials” based on your previous summary.</i>	We have revised this bullet to better align with the language used in the preceding summary paragraphs.
Reviewer 7:		
7.1	<p><i>Page 3, line 60 should read “...half...” (not “galf”); page 5, line 52 appears to be missing a word “...fit the program into their, but..”; page 12, line 59 appears to be missing a word “...first launched settings.” Page 19, line 49 requires a capital letter (One) after a period.</i></p> <p><i>Page 21, line 21 “...use of adherence...” sounds awkward. Page 21, line 45 should read “...availability of PTSD treatments...”; Page 27, line 10 should read “skills” (not “kills”); Page 65, line 43 should read “There were also more...”; Page 88, line 28 should read “...provider skills...”</i></p> <p><i>Page 29, line 29 recommends development/dissemination of patient educational materials - please note that the National EBP Training programs have developed/disseminated Veteran-facing brochures for each EBP offered, as well as a “Proven Treatments” brochure that provides a brief summary of all EBPs offered.</i></p>	<p>We have made all of these corrections and edits.</p> <p>We appreciate this information and have added these resources to the range of patient-facing educational materials currently available. However, we believe that our recommendation for more tailored materials for different patient groups remains valid.</p>

	Reviewer Comments	Authors' Responses
	<p>Page 29, line 32 recommends evaluation of in-person vs TMH care. Please note that the National EBP Training Programs have begun evaluation of EBPs provided to Veterans via TMH vs in-person.</p>	<p>Thank you for this information. We have added to the Discussion that there are efforts underway.</p>
Reviewer 8:		
<p>8.1</p>	<p><i>“Overall, I enjoyed reading this thorough treatment of the implementation literature in this area. It was well-written, and I appreciated the synthesis of a large amount of material to arrive at several clear, pertinent recommendations. Below are additional major and minor comments for consideration.</i></p> <p><i>Major comments:</i> <i>Page 1, line 41-43- “because some findings from implementation of EBPs to treat chronic mental health conditions may be applicable to implementation of EBPs for chronic pain”. Consider adding an explanation that this may be especially true for studies conducted within the VA health system where provider and system factors are expected to be similar and may reveal some common factors (barriers, facilitators, or implementation strategies) that could be acted on at a systems level. It seems important to clarify the purpose of going beyond examining just EBPs for pain.</i> <i>Page 1, line 49- the scope of this report is wide-ranging, so it is necessarily difficult to organize. This paragraph stating the overall scope of the review was a bit confusing. It may be due to the sentence about “results on barriers and facilitators for these same EBPs but in the context of treating individuals with other conditions”. The sentence was unexpected and interrupted the flow. A slightly different presentation or organization may be helpful here.</i> <i>Also, within this paragraph or prior to it, the point could be made that the EBPs chosen are part of the VA’s EBP program and used to treat conditions that are commonly found in VA including insomnia, depression, and PTSD.”</i></p>	<p>Thank you.</p> <p>We have clarified in the Introduction in the Executive Summary and Introduction in the main text that within VHA, provider- and system-level barriers, facilitators or implementation strategies for EBPs for mental health conditions may generalize to chronic pain treatment. We have also reorganized and expanded the inclusion criteria for non-pain EBPs, including a strong evidence-base, inclusion in treatment guidelines, and common implementation and delivery in VHA settings.</p>
<p>8.2</p>	<p><i>“CFIR I don’t claim expertise in CFIR or RE-AIM, but there were a few places in the report where the classification of themes was not</i></p>	<p>We have carefully reviewed publications and other references describing the selected frameworks, and “Patient Knowledge and Beliefs” and “Patient Other Attributes” are not existing CFIR domains (Damschroder et</p>

	Reviewer Comments	Authors' Responses
	<p><i>clear to me. Someone with experience with these frameworks should review the manuscript and provide their feedback on the use of the frameworks for classifying the themes in this review. For example, is it acceptable to create new CFIR subdomains?</i></p> <p><i>Page 5, paragraph beginning line 5, the authors created new CFIR subdomains to describe the themes not present in CFIR, but "Patient Knowledge and Beliefs" and "Other Patient Attributes" are already CFIR subdomains."</i></p>	<p>al. 2009 and Damschroder et al. 2011). CFIR has "Patient Needs and Resources" under Outer Settings, but no other subdomains that specifically address patient attributes. Modifying CFIR has also been done by other groups who found that adding patient-centered subdomains served the purpose of their work (Safaeinili et al. <i>Learn health Syst</i> 2019;4:e10201). Finally, some members of the ESP review team have prior experience with implementation research using these frameworks.</p>
<p>8.3</p>	<p><i>Page 12, line 29- this new section of CBT interventions for other conditions could benefit from a sentence or two introduction or maybe be integrated into the EBPs for other conditions section. It isn't clear what the rationale is for presenting them separately. Later, as I continued to read it was clear that this grouping of studies focuses mostly on provider and system barriers and facilitators rather than patient level barriers and facilitators as the pain related EBPs did and that may be the reason for the separate grouping. Possibly if the rationale for the grouping is introduced earlier it may flow more for the reader.</i></p>	<p>We have added a description of KQ 2a, which focuses on provider and system-level barriers and facilitators for EBP in chronic mental health conditions.</p>
<p>8.4</p>	<p><i>Page 15-16-Adoption-Is this adoption? I have typically seen adoption defined by the number of clinicians or patients who use an intervention. Having said that, I'm not sure where else in the RE-AIM framework I would put this.</i></p>	<p>As noted previously in response to reviewer #6, we categorized provider attitudes and self-efficacy within Adoption, as the most appropriate domain within RE-AIM. We agree with reviewer that provider attitudes and self-efficacy is not explicitly included in the definition of RE-AIM domains. However, as these are factors that contribute to why (and which) providers will use recommended EBPs, we believe these concepts fit best within Adoption.</p>
<p>8.5</p>	<p><i>Page 30, line 27 about reach in VA programs. Great point and I would add that we don't understand who engages in treatments and which setting have the highest referral yield (the most patients who actually engage).</i></p>	<p>We agree with the reviewer, and in particular for chronic pain psychotherapies, understanding Reach will also require more research into provider and system-level factors that impact referrals and treatment engagement. We have added these comments to the Discussion (Research Gaps/Future Research).</p>
<p>8.6</p>	<p><i>"Minor comments: Page 1, line 36- consider 'reducing opioid related harms rather than reducing inappropriate opioid prescribing; Page 3, line 60- should be over half rather than half; Page 6, line 29-consider adding to the end of that sentence that acceptance is a core process of ACT; Page 8, line 34-consider</i></p>	<p>We added language on the goals of the Pain/Opioid CORE to the Introduction. We have made the remaining suggested edits in the report.</p>

	Reviewer Comments	Authors' Responses
	<p><i>saying treatment attendance or engagement instead of adherence; Page 19. Line 49. One should be capitalized and have a space I front of it; Page 25, line 52 To support the VA HSR&D Pain/Opioid CORE's goal of identifying high priority research within implementation of nonpharmacological treatments."</i></p> <p><i>Page 12, line 42- I wasn't sure what cognitive barriers meant here. Does this refer to cognitive deficits like dementia or is this something else?</i></p>	<p>The authors did not elaborate beyond "cognitive barriers to understanding CBT concepts" and therefore it is unclear if this refers to clinical conditions or difficulty understanding CBT concepts.</p>

APPENDIX F. QUALITY ASSESSMENT FOR ELIGIBLE PUBLICATIONS

Appendix Table F1. Quality Ratings for Qualitative Studies Assessed with CASP

Author, Year	Was there a clear statement of the aims of the research?	Is qualitative methodology appropriate?	Was the research design appropriate to address the aims of the research?	Was the recruitment strategy appropriate to the aims of the research?	Was the data collected in a way that addressed the research issue?	Has the relationship between researcher and participants been adequately considered?	Have ethical issues been taken into consideration?	Was the data analysis sufficiently rigorous?	Is there a clear statement of findings?	Overall study quality
Amodeo 2011 ⁹⁷	Yes	Yes	Yes	Can't Tell	Can't Tell	No	Yes	Can't Tell	Yes	Low
Bee 2016 ⁴⁵	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Moderate
Brintz 2020 ³⁸	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	High
Casey 2020 ⁵⁴	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	High
Clarke 2017 ⁴²	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Moderate
Crisp 2016 ⁴⁴	Yes	Yes	No	No	Can't Tell	No	Yes	No	Can't Tell	Low
Curran 2015 ⁸¹	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	High
Doran 2019 ⁶¹	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Low
Fraser 2019 ⁴⁰	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	High
George 2017 ⁴³	Yes	Yes	Yes	No	Can't Tell	Yes	Yes	Yes	Yes	Moderate
Hamblen 2015 ¹⁰²	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	High
Hundt 2015 ⁷⁰	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	High
Hundt 2018 ⁶²	Yes	Yes	Can't Tell	Yes	Yes	No	Yes	Can't Tell	Yes	Moderate
Kauth 2010 ⁸⁹	Yes	Yes	Yes	Yes	Yes	No	Yes	Can't Tell	Yes	Moderate
Koffel 2020 ⁵⁹	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	High
Koffel 2020 ⁵⁷	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	High
Kyrios 2010 ⁹⁸	Yes	Yes	Can't Tell	Yes	Can't Tell	No	Yes	Can't Tell	Yes	Low

Author, Year	Was there a clear statement of the aims of the research?	Is qualitative methodology appropriate?	Was the research design appropriate to address the aims of the research?	Was the recruitment strategy appropriate to the aims of the research?	Was the data collected in a way that addressed the research issue?	Has the relationship between researcher and participants been adequately considered?	Have ethical issues been taken into consideration?	Was the data analysis sufficiently rigorous?	Is there a clear statement of findings?	Overall study quality
Landes 2017 ⁹⁵	Can't Tell	Yes	Can't Tell	Can't Tell	Can't Tell	No	Yes	Can't Tell	Yes	Low
Lu 2016 ⁶⁸	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	High
Martinez 2015 ⁵⁶	Yes	Yes	Yes	Yes	Yes	No	Yes	Can't Tell	Yes	Moderate
McCracken 2014 ⁴⁷	Yes	Yes	Yes	Yes	Yes	No	Yes	Can't Tell	Yes	Moderate
Osei-Bonsu 2017 ⁶⁷	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	High
Patel 2009 ⁴⁹	Yes	Yes	Can't Tell	Can't Tell	Yes	No	Yes	Can't Tell	Yes	Moderate
Possemato 2018 ⁷⁵	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	High
Sayer 2017 ⁶⁵	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Moderate
Sommerfeld 2019 ⁹⁹	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Can't Tell	Moderate
Van Huet 2009 ⁴⁸	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Moderate

Appendix Table F2. Quality Ratings for Quantitative Studies Assessed with Newcastle-Ottawa

Author, Year	Representative of the population, with clear sampling strategy and rationale?	Ascertainment of condition	Implementation strategy and rationale clearly described?	Appropriate outcome assessment (datasources, variable definitions and rationale clearly described)?	Complete follow-up and/or adequate response rate (>60%)?	For implementation trials testing a specific strategy, was the follow-up sufficient for outcomes?	Was the data analysis sufficiently rigorous?	Has the relationship between researcher and participants been adequately considered?	Have ethical issues been taken into consideration?	Overall quality rating
Brintz 2020 ³⁸	No	Medical record or clinical diagnosis	NA	Yes	Yes	NA	Unclear	Yes	Yes	Moderate
Chard 2012 ⁸⁷	Yes	NA	Yes	Yes	No	Yes	No	No	No	Low
Charney2019 ⁷⁴	No	NA	Yes	Yes	Unclear	Yes	Yes	No	Yes	Low
Clark 2009 ⁹⁴	Unclear	Unclear	No	No	Unclear	No	No	No	Yes	Low
Crawford 2017 ⁷⁷	No	Medical record or clinical diagnosis	NA	Yes	Yes	NA	Yes	No	Yes	Moderate
Crisp 2016 ⁴⁴	No	Medical record or clinical diagnosis	NA	Yes	No	NA	No	No	Yes	Low
Cully 2010 ⁸⁸	Yes	NA	Yes	Yes	Yes	Yes	No	No	Yes	Moderate
Dedert 2020 ⁷³	No	Medical record or clinical diagnosis	Yes	No	Unclear	NA	No	No	Yes	Low
DePhilippis 2018 ¹⁰⁰	Unclear	NA	No	No	Unclear	Yes	No	No	Yes	Low
Doran 2019 ⁶¹	No	work at PTSD clinic	No	Yes	Unclear	NA	Yes	Yes		Moderate
Drapkin 2016 ⁷⁹	Yes	NA	Yes	Yes	Yes	Yes	Yes	No	Yes	High

Author, Year	Representative of the population, with clear sampling strategy and rationale?	Ascertainment of condition	Implementation strategy and rationale clearly described?	Appropriate outcome assessment (datasources, variable definitions and rationale clearly described)?	Complete follow-up and/or adequate response rate (>60%)?	For implementation trials testing a specific strategy, was the follow-up sufficient for outcomes?	Was the data analysis sufficiently rigorous?	Has the relationship between researcher and participants been adequately considered?	Have ethical issues been taken into consideration?	Overall quality rating
Eftekhari 2015 ⁸²	No	Medical record or clinical diagnosis	NA	Yes	Unclear	NA	Yes	No	Yes	Moderate
Finley 2015 ⁷¹	Yes	NA	NA	No	No	NA	Yes	No	Yes	Moderate
Finley 2018 ⁶³	Yes	NA	NA	Yes	No	NA	Yes	No	Yes	Moderate
Garcia 2019 ⁶⁰	Yes	NA	NA	Yes	No	NA	Yes	No	Yes	Moderate
Garcia 2020 ¹⁰¹	Yes	NA	NA	Yes	No	NA	Yes	No	Yes	Moderate
George 2017 ⁴³	No	Unclear	NA	Yes	Yes	NA	Yes	No	Yes	Moderate
Heapy 2005 ⁵⁰	Yes	Medical record or clinical diagnosis	NA	Yes	Yes	NA	Yes	No	Yes	High
Hepner 2011 ⁹⁰	Yes	Medical record or clinical diagnosis	Yes	Yes	Yes	No	Yes	No	Yes	Moderate
Herman 2017 ⁵⁵	Yes	Medical record or clinical diagnosis	NA	Yes	Yes	NA	Yes	No	Yes	High
Higgins 2018 ⁴¹	Yes	Medical record or clinical diagnosis	NA	Yes	Yes	NA	Yes	No	Yes	High
Hundt 2018 ⁶²	No	Unclear	No	Yes	No	NA	Yes			Low
Karlin 2010 ⁹¹	Yes	NA	Yes	No	Unclear	No	Unclear	No	Yes	Low

Author, Year	Representative of the population, with clear sampling strategy and rationale?	Ascertainment of condition	Implementation strategy and rationale clearly described?	Appropriate outcome assessment (datasources, variable definitions and rationale clearly described)?	Complete follow-up and/or adequate response rate (>60%)?	For implementation trials testing a specific strategy, was the follow-up sufficient for outcomes?	Was the data analysis sufficiently rigorous?	Has the relationship between researcher and participants been adequately considered?	Have ethical issues been taken into consideration?	Overall quality rating
Karlin 2012 ⁹³	Yes	NA	Yes	Yes	Yes	Yes	Yes	No	Yes	Moderate
Karlin 2013 ⁸⁵	Yes	NA	Yes	Yes	Yes	No	Yes	No	Yes	Moderate
Kauth 2010 ⁸⁹	Yes	NA	Yes	Yes	Yes	Yes	Yes	No	Yes	High
Kauth 2017 ⁹⁶	Unclear	NA	Yes	No	Yes	Yes	Yes	Yes	No	Moderate
Kerns 2000 ⁵¹	Yes	Medical record or clinical diagnosis	NA	Yes	Unclear	NA	Yes	No	Yes	Moderate
Koffel 2018 ⁵²	Yes	Medical record or clinical diagnosis	NA	Yes	Yes	NA	Yes	No	Yes	High
Kyrios 2010 ⁹⁸	Unclear	NA	NA	No	Unclear	NA	No	No	Yes	Low
Manber 2013 ⁹²	Yes	NA	Yes	Yes	Yes	No	No	Yes	No	Moderate
McCracken 2014 ⁴⁷	Yes	Medical record or clinical diagnosis	NA	Yes	Yes	NA	Unclear	No	Yes	Moderate
Mignogna 2014 ⁸⁶	No	Medical record or clinical diagnosis	Yes	Yes	Yes	Yes	Yes	No	Yes	Moderate
Mun 2019 ³⁹	Yes	Medical record or clinical diagnosis	NA	Yes	Yes	NA	Yes	No	Yes	High

Author, Year	Representative of the population, with clear sampling strategy and rationale?	Ascertainment of condition	Implementation strategy and rationale clearly described?	Appropriate outcome assessment (datasources, variable definitions and rationale clearly described)?	Complete follow-up and/or adequate response rate (>60%)?	For implementation trials testing a specific strategy, was the follow-up sufficient for outcomes?	Was the data analysis sufficiently rigorous?	Has the relationship between researcher and participants been adequately considered?	Have ethical issues been taken into consideration?	Overall quality rating
Murphy 2020 ³⁷	No	Medical record or clinical diagnosis	NA	Yes	No	NA	Unclear		Yes	Moderate
Possemato 2018 ⁷⁵	Yes	PCL-S score	Yes	Yes	Yes	Yes	Yes	No	Yes	High
Raza 2015 ⁶⁹	Yes	NA	NA	Yes	No	NA	No	No	Yes	Moderate
Richards 2017 ⁶⁶	No	NA	Yes	No	No	NA	Yes	No	No	Low
Rosen 2017 ⁷⁶	Yes	NA	Yes	Yes	Yes	Yes	Yes	No	Yes	High
Ruzek 2014a ⁸³	Yes	NA	Yes	Yes	No	Yes	Yes	No	Yes	Moderate
Ruzek 2014b ⁷²	No	NA	NA	Yes	Yes	NA	No	No	No	Low
Ruzek 2016 ⁸⁰	Yes	NA	Yes	Yes	Yes	Yes	Yes	No	Yes	High
Ruzek 2017 ⁷⁸	Yes	NA	Yes	Yes	Yes	Yes	Yes	No	Yes	High
Song 2020 ⁵⁸	Yes	NA	NA	No	No	NA	Yes	No	Yes	Moderate
Stewart 2015 ²⁴	Yes	Medical record or clinical diagnosis	Yes	Yes	Yes	Yes	Unclear	No	No	Moderate
Thorn 2011 ⁵³	Yes	Medical record or clinical diagnosis	NA	Yes	Yes	NA	Yes	No	Yes	High
Ulmer 2017 ⁶⁴	Yes	NA	NA	Yes	No	NA	Yes	No	Yes	Moderate
Walser 2013 ⁸⁴	Yes	NA	Yes	Yes	Yes	No	Yes	No	Yes	High

Author, Year	Representative of the population, with clear sampling strategy and rationale?	Ascertainment of condition	Implementation strategy and rationale clearly described?	Appropriate outcome assessment (datasources, variable definitions and rationale clearly described)?	Complete follow-up and/or adequate response rate (>60%)?	For implementation trials testing a specific strategy, was the follow-up sufficient for outcomes?	Was the data analysis sufficiently rigorous?	Has the relationship between researcher and participants been adequately considered?	Have ethical issues been taken into consideration?	Overall quality rating
Wetherell 2016 ⁴⁶	Yes	Study staff evaluation of participants	NA	Yes	Yes	NA	Yes	No	Yes	High

APPENDIX G. EVIDENCE TABLES

Appendix Table G1. KQ1 Articles Examining Facilitators and Barriers to Implementation of CBT, ACT, and MBSR for Chronic Pain

Author, Year; Quality; Setting	Participants; Chronic pain definitions; Data sources and analyses	Outcomes by CFIR Domain		
		Outer Setting— Patient Knowledge and Beliefs	Outer Setting— Other Patient Attributes	Others
Cognitive Behavioral Therapy (CBT)				
Bee, 2016 ⁴⁵ Moderate UK community health system	44 adults who completed follow-up in RCT comparing exercise, 8 weeks of individual tCBT, exercise + tCBT, and UC Fibromyalgia or CWP per ACR definition; impaired physical function per CPGQ; GP consultation for pain within past 12 months Semi-structured interviews, framework analysis	<p><i>“Patients emphasized a lack of personal understanding regarding their own pain triggers, a situation that they believed had been exacerbated by poor information provision and a lack of clinical consensus regarding the CWP experience. In the absence of a clear causal attribution for CWP, participants tended to conceive pain in physical terms, typically describing it as a natural warning system initiated in response to mechanical stress or dysfunction.”</i></p> <p><i>“...in almost all cases pain was experienced in cyclical episodes with no perceived control over their beginning or end. By implication, there was also no perceived control over the occurrence of future pain events. Sharing these experiences with others was difficult for some individuals, who ultimately feared that they would be regarded as lazy, or that the validity of their symptoms would be dismissed.”</i></p>		<p>Intervention Characteristics —Design Quality and Packaging <i>“Negative feedback...focused predominantly on the relevance of intervention resources. All [CBT] participants... were issued...a self-help manual. While diaries and written exercises were sometimes... useful, hypothetical case studies and lifestyle scenarios attracted criticism for their bias towards inactive and isolated individuals. ... [T]he severity of the examples provided constituted an unnecessary and unwelcome reminder of potential identity loss for many. Engaging fully with therapy materials meant that participants had ... to acknowledge this possibility and to perceive some relevance between the case</i></p>

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		Outer Setting— Patient Knowledge and Beliefs	Outer Setting— Other Patient Attributes	Others
		<p><i>“Only a small minority of patients reported pre-emptive adjustments to CWP, the deliberate use of activity pacing or practical lifestyle aids reflecting an unusual level of self-efficacy in the patient role.”</i></p> <p><i>“Lack of relevance [of CBT, as compared to exercise]... included ... two key factors: a lack of fit with participants’ entrenched illness perceptions and a lack of fit with the self. Participants’ narratives revealed a lack of knowledge regarding the goals ... of CBT and thus an initial lack of understanding regarding its ‘fit’ with a health condition predominantly attributed to physical causes.”</i></p> <p><i>“... substantial stigma surrounded CBT use. At best, psychological therapy was perceived to question the validity of pain symptoms. At worst, it intimated the CWP was the result of an underlying character weakness requiring some sort of correction.”</i></p> <p><i>“Participants who had denied or challenged pain recounted how they had gradually begun to re-engage with their condition ... Most believed that by engaging cognitive reflection they had been able to enhance their own understanding of pain triggers, thereby</i></p>		<p><i>studies and their own social and illness identities.”</i></p> <p>—Patient-Therapist Relationship: <i>“Several expressed relief at being able to share previously untold illness experiences. Many reported that direct interaction with a cognitive behavioural therapist had enabled them to benchmark their current daily routines and activity levels against social norms and identify potential self-care opportunities.”</i></p> <p>Outer Setting—Patient Needs and Resources: <i>“Telephone...was sometimes acknowledged to limit face to face interaction, limiting the depth of the relationship that could be established between a therapist and client. For the most part however, the impact of using a [telephone] was relatively minor. The key gains lay in its ability to overcome geographical or temporal access barriers, and to deliver timely and responsive behavioral change interventions into a contextually relevant setting.”</i></p>

Author, Year; Quality; Setting	Participants; Chronic pain definitions; Data sources and analyses	Outcomes by CFIR Domain		
		Outer Setting— Patient Knowledge and Beliefs	Outer Setting— Other Patient Attributes	Others
		<i>shifting ...to proactive pain management strategies.”</i>		
Fraser, 2019 ⁴⁰ High UK community health system	33 adults who completed ≥50% of 7-week tCBT pain program in RCT of tCBT vs UC High risk of developing CWP: consulted GP for pain in past 6 months, + 2 or 3 of the following: Illness Behavior Scale Score >4, Somatic Symptom Scale Score >2, Sleep Problem Scale Score >4 Semi-structured interviews, framework analysis	<p><i>“Some patients appeared to have assessed the potential for gain versus risk when considering whether to participate in the study and judged it to be a non-invasive, low risk, ‘nothing to lose’ opportunity and an alternative to medication.”</i></p> <p><i>“Prior to the first session about a third of participants had fairly low expectations about what the intervention could achieve for them, either due to skepticism about how talking could impact on a physical symptom or because they had doubts about the relevance of this approach for their particular condition.”</i></p> <p><i>“About a fifth of participants had a good understanding of cognitive behavioral approaches and began the trial with high expectations about the benefits of talking therapy in relation to pain management, either based on prior experience of CBT (for other health conditions) or from their own reading or professional roles.”</i></p> <p><i>“For the participants reporting positive changes [in either their subjective level of pain or their pain management] directly attributed to the</i></p>	<p><i>“A small number of participants had already adopted their own discomfort and pain self-management strategies, for example, positive thinking, exercising, pacing or resting prior to involvement in the trial and these were used by them to minimize the impact of the pain experienced”</i></p>	<p>Intervention Characteristics —Design Quality and Packaging <i>“All participants confirmed they had received the accompanying self-management CBT manual and about two thirds reported using it. Many positive aspects of the manual were identified relating to the content, structure and purpose. For example, participants used the manual as an aide memoire between sessions, to recall sessional advice and to prompt and motivate their daily goals. Notes could also be made for topics to be discussed with the therapist at the next session which could help participants to articulate their thoughts.”</i></p> <p><i>“The manual was also important for some in helping to foster the connection between mind and body and principles of CBT and in enhancing their understanding</i></p>

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		<p><i>intervention, nine of these reported lower or more manageable levels of pain which seemed to relate to an increase in self-awareness and self-management of symptoms and evidence of cognitive re-structuring.”</i></p> <p><i>“For the remainder of the participants reporting positive changes [in either their subjective level of pain or their pain management] directly attributed to the telephone intervention their pain was still present but they had changed the way they thought about their pain and were now able to “put things in perspective”, “think of others worse off” or to focus less on the pain.”</i></p> <p><i>“...the trial was felt to be unsuitable as the participant did not consider their main source of pain to be musculoskeletal although they did have a diagnosis of osteoporosis; in three other cases the intervention was considered to have effected little or no change as the participants were already using cognitive and pain management strategies prior to being recruited into the trial.”</i></p> <p>Patient-reported factors affecting intervention acceptance→ Patient-suggested methods to address these factors:</p>		<p><i>of pain triggers in order to identify solutions.”</i></p> <p><i>“In suggesting ideas to improve the manual some had found it ‘difficult to navigate’ and others ‘repetitive’ or ‘too rigid’ – which was contrasted with the personalized and adaptable approach of the therapist. Some would have liked more information at the outset about the purpose of the manual alongside the therapeutic sessions and how this would be used by the therapist and client throughout the intervention. Ultimately though, what was important was that the manual was offered alongside the therapeutic support of the therapist.”</i></p> <p>—Patient-Therapist Dynamics <i>“Interviewees commented warmly on the therapists delivering the sessions, describing them as experienced and skilled professionals who were friendly, knowledgeable, empathic and able to quickly</i></p>

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		Outer Setting— Patient Knowledge and Beliefs	Outer Setting— Other Patient Attributes	Others
		<p>Skepticism and resistance: Some will be skeptical and resistant to the idea of a ‘counselling’ approach to preventing chronic widespread pain→ Clear information at screening about the nature and style of the intervention (cognitive behavioral therapy) and about the link between what we do, the way we think and our physical symptoms</p> <p>Timing: Timing of the intervention offer could impact on acceptability and suitability→ impact may be increased if offered earlier rather than later, for example, when participants are experiencing low to moderate pain</p> <p>Baseline Knowledge: Intervention most useful for those with little or no prior experience techniques of CBT pain management techniques→ Intervention screening should include assessment of baseline knowledge and existing use of self-help and CBT pain management</p> <p>Presenting Symptoms: The presenting symptoms experienced may impact on acceptability and suitability →Intervention screening should include assessment of symptoms experienced. Intervention is likely to be most helpful for those with musculoskeletal pain.</p>		<p><i>establish rapport and put clients at ease. Participants also welcomed the consistency, reliability and convenience of speaking to the same therapist at each session.”</i></p> <p><i>“For those who had no prior experience of therapeutic support, this down to earth and personalized approach was a welcome contrast to what they had been expecting.”</i></p> <p><i>“Participants also valued having someone to share their experience with, without which, the pain could have been an isolating experience.”</i></p> <p><i>“Others highlighted the contrast between the trial intervention and usual GP care, highlighting that taking part was an opportunity to be listened to, to be given time to talk.”</i></p> <p>Outer Setting—Patient Needs and Resources <i>“...more than two thirds were completely satisfied with</i></p>

Author, Year; Quality; Setting	Participants; Chronic pain definitions; Data sources and analyses	Outcomes by CFIR Domain		
		Outer Setting— Patient Knowledge and Beliefs	Outer Setting— Other Patient Attributes	Others
				<p><i>receiving this type of intervention by telephone and saw no additional benefits to be gained by receiving the intervention face-to-face.”</i></p> <p><i>“The telephone-based intervention also increased accessibility for those who were working and/or had childcare commitments and those who were geographically remote from NHS clinic sites.”</i></p> <p><i>“Some participants had mixed views on modality: whilst recognizing some of the benefits that telephone interventions can offer, they wondered whether face-to-face support would achieve a more personal and holistic approach and enhance the therapeutic process, for example, by incorporating non-verbal communication. Two participants felt the telephone did not afford a sufficiently in-depth approach as compared to a face to face approach.”</i></p>
Heapy, 2005 ⁵⁰	89 adults (1 primary care clinic) in RCT of 10	Pre-contemplation: higher ~ little personal responsibility for pain	<ul style="list-style-type: none"> Patients who did not complete all treatment sessions 	

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High US, VHA	<p>weeks primary-care-based CBT (PRIME) vs CBT vs UC</p> <p>Constant pain ≥ 6 mo and “significant physical findings” at pain site per chart review</p> <p>Questionnaires</p> <p>Descriptive statistics, correlations, ANCOVA and repeated measures ANOVA, hierarchical regression</p>	<p>control and no interest in making behavioral changes that support pain management.</p> <p>Contemplation: higher ~ increasing recognition of personal responsibility for pain control and interest in behavioral changes that support pain management.</p> <ul style="list-style-type: none"> Contemplation correlated with higher adherence ($r\ 0.399$, $p < 0.01$) Pre-contemplation correlated with lower adherence ($r\ -0.331$, $p < 0.05$) Action, maintenance, self-efficacy not correlated with adherence Self-efficacy did not account for a significant amount of variance in adherence PSOCQ variables accounted for significant amount of variance in adherence, controlling for self-efficacy (R^2 change 0.234, $p < 0.05$) None of self-efficacy, individual PSOCQ variables, or PSOCQ model variables as a block significantly predicted variance in post-treatment goal accomplishment. 	<p>reported more baseline pain-related interference than completers (WHYMPI Interference score 5.33 vs 4.64, $p < 0.01$).</p> <ul style="list-style-type: none"> No significant differences between completers and non-completers on any other demographic, mood, pain, or other outcome variables (age, sex, race, employment, service connection, retirement, relationship status, depressive symptoms (BDI-II), state anxiety, GPR, pain severity (subscale of WHYMPI), pain-related disability (subscale of WHYMPI), pain medication use, history of pain surgery, or pain duration) 	

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		<p>Adherence change over time: Increase in combination in all PSOCQ variables was</p> <ul style="list-style-type: none"> significantly related to increase in adherence from mid (average of weeks 4-6) to late (7-10) ($R^2=.216$, $p=0.041$) treatment not significantly related to increase in adherence from early (average of weeks 1-3) to late (7-10) treatment <p>Pre-contemplation decrease was associated with adherence decrease (effect size NR, $t=-2.350$, $p=0.024$), though direction is opposite of expected</p> <p>Maintenance increase was associated with adherence increase (effect size NR, $t=-2.270$, $p=0.029$)</p> <p>Adherence was not a mediator</p> <ul style="list-style-type: none"> between PSOCQ and pain-related outcomes (pain severity, interference, BDI) between SE and goal accomplishment <p>Adherence mediated the influence of Contemplation on goal accomplishment (Sobel test: $z=2.48$, $p<0.01$)</p>		

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Mun, 2019 ³⁹ High US, VHA	60 adults (1 primary care clinic – VA Connecticut Healthcare System Primary Care Clinic) enrolled in 10 weeks one-on-one primary-care-based (PRIME) CBT or CBT arms within RCT of PRIME CBT vs CBT vs UC Constant back pain ≥6 mo and “significant physical findings” at pain site per chart review Questionnaires Descriptive statistics, repeated measures ANOVA, change score correlations and multiple variable regression	Action represents acceptance of a self-management approach to chronic pain and engagement in efforts to improve pain management skills. Maintenance represents an established self-management perspective and desire to continue learning and applying pain management skills. As Action and Maintenance scales were highly correlated ($r = 0.74$), mean scores of Action and Maintenance scales were combined for main analyses. Action/Maintenance change scores were significantly positively correlated with intersession adherence ($r 0.34, p <0.05$), indicating that increased Action/Maintenance was associated with greater intersession adherence on average	Patients who completed the 12-month follow-up (completers) and those who dropped out (non-completers) did not differ significantly on baseline variables including age, years of education, sex, race/ethnicity, living alone vs with others, employment status, pain duration, history of pain surgery, depression symptom severity (BDI-II), pain-related disability (RMDQ), or pain severity (subscale of WHYMPI)	
Higgins et al 2018 ⁴¹ High US, VHA	290 adults (Northeastern VA health care system) in RCT of 10 weeks in-person one-on-one vs interactive voice-response one-on-one CBT-CP		No statistically significant difference in race/ethnicity, age, gender, or pain intensity (NRS) between participants who did and did not receive adequate dose (≥3 weeks) of treatment	

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	<p>Neck or back pain ICD-9 code(s) (CPT 721, 722 or 724) in EHR and ≥ 4 on pain intensity numerical rating scale (NRS, 0-10) for ≥ 3 months</p> <p>EHR/chart review, interviews, questionnaires/surveys</p> <p>Descriptive and bivariate statistics, multivariate logistic regression, Kaplan-Meier</p>			
<p>Kerns, 2000⁵¹</p> <p>Moderate</p> <p>US (VHA)</p>	<p>109 adults (Connecticut Healthcare System) evaluated for 10 sessions of one-on-one CBT that could involve a significant other</p> <p>Pain ≥ 4 months, not seeking new medical treatment for pain</p> <p>Treatment completers vs non-completers of CBT</p> <p>Interviews, questionnaires/surveys</p> <p>Descriptive statistics, bivariate analyses, two-way MANOVA and post-hoc univariate statistics</p>	<p>For patients who completed treatment, as compared to non-completers, pre-treatment mean scores were significantly lower for Precontemplation (2.93 vs 3.27, $p < 0.05$), were significantly higher for Contemplation (3.84 vs 3.61, $p < 0.05$), and did not differ on Action or Maintenance scores</p>	<p>No significant differences noted between completers and non-completers in demographic characteristics (age, education level, percent male [neither sex nor gender named], employed vs unemployed) or pain and mental health measures (pain severity by 2 measures (PRI; subscale of WHYMPI), pain disability (subscale of SOPA), pain interference (subscale of WHYMPI), activity (measure NR), pain behavior (PBCL), depression severity (BDI), pain duration, number of medical outpatient visits for pain, number of medical inpatient visits for pain, number of psychiatric visits, number of visits to other pain care providers, % using prescribed or</p>	

Author, Year; Quality; Setting	Participants; Chronic pain definitions; Data sources and analyses	Outcomes by CFIR Domain		
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			OTC pain medications, % receiving disability for pain)	
Koffel, 2018 ⁵² High US community health system	<p>122 adults ≥60 years old with clinically significant insomnia (Washington state primary care clinics, integrated health system) randomized to 6 weekly sessions of group CBT-PI in RCT of CBT-PI vs CBT for chronic pain vs EOC</p> <p>ICD-9 diagnosis of osteoarthritis (CPT 715xx) on ≥1 health care visit in 3 years prior to screening and clinically significant pain (Grade II, III, or IV on GCPS)</p> <p>Questionnaires/surveys</p> <p>Descriptive statistics, exploratory factor analyses, hierarchical regressions</p>	<p>Treatment Acceptability Scale consists of 4 items: treatment made sense, is acceptable, is suitable, is expected to be effective</p> <p>Treatment Acceptability Scale was positively correlated with total number of sessions attended (r 0.24, p≤0.01) and negatively correlated with 2-month drop-out (-0.32, p≤0.01)</p> <p>Hierarchical regressions: Higher treatment acceptability predicted higher treatment session attendance (β 0.20, ΔR² 0.03, p<0.05). Treatment acceptability was the last addition to the model, and therefore predicted an additional 3% of the variance above and beyond baseline demographics, medical variables and symptoms. Opioid use at baseline was the only other significant predictor in the final model.</p>	<p>Opioid medication use for pain at baseline was negatively correlated with total number of sessions attended (r -0.24, p≤0.01)</p> <p>Patients who dropped out prior to the 2-month post-treatment assessment did not differ significantly from patients who completed the intervention on baseline demographics (age, sex, race, marital status, education beyond high school), chronic medical illness (Charlson Index 0 vs >0), current use of medication types (hypnotics, opioids, non-opioid analgesics), pain measures (GCPS, AIMS2-SF-Symptom, PCS, TSK), anxiety/depression measures (GDS, AIMS2-SF-Affect), insomnia measures (ISI, PSQI, FFS, DBAS), or objectively measured sleep variables (total sleep time, sleep efficiency)</p> <p>Hierarchical regressions: Patients who were taking opioid medications for pain at baseline attended fewer treatment sessions (β=-0.21, p<0.05)</p>	
Murphy et al 2020 ³⁷	1331 adults (across national VA health care		Treatment completion (≥11 sessions) was more likely in	

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Moderate US, VHA	<p>system) who initiated individual CBT-CP treatment</p> <p>Presented to a clinical care setting with complaint of chronic pain and/or pain-related impairments</p> <p>Questionnaires</p> <p>Descriptive statistics, logistic regressions</p>		<p>Veterans with advanced age (OR 1.01 for 1 year, 95%CI 1.002-1.023) and with lower baseline pain-related interference (subscale of WHYMPI) (OR 1.19, 95%CI 1.06-1.34). No significant difference between completers and non-completers in other sociodemographic values (age, gender, race, ethnicity, highest education level completed, military service era), baseline pain measures (NRS, PCS), baseline depression severity (BDI-II, PHQ-9) or quality of life measures (WHOQOL physical, psychological, social and environmental domains)</p>	
Patel, 2009 ⁴⁹ Moderate UK community health system	<p>18 GPs practicing primary care, asked about chronic pain care for South Asian patients</p> <p>No chronic pain definition; GPs had practiced ≥12 months in the city area</p> <p>Semi-structured interviews, constant comparative method of grounded theory</p>			<p>Intervention Characteristics —Evidence:</p> <p><i>“GPs seemed particularly interested in having access to more culturally relevant psychological services including counselling and CBT. Most current pain management programs are derived from a CBT approach that has been shown to be effective...and have been described as the treatment of choice for patients coping with pain-related disability... However, it is important to</i></p>

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				<p><i>bear in mind that these research data come almost exclusively from European populations, people of European descent or western countries.”</i></p> <p>Outer Setting—Patient Needs and Resources: <i>“From the interviews we found GPs felt the additional services required for South Asian patients with chronic pain included counselling, cognitive behavior therapy (CBT), and local community support.”</i></p> <p><i>“A number of GPs felt the underlying issues for patients with chronic pain were often psychosocial and as a result felt there was a need for more culturally specific psychological services. Some felt access to language specific counselling services may be beneficial in helping address some of these barriers.”</i></p> <p><i>“They perceived counselling to be a complex interaction</i></p>

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				<p><i>between the counsellor and the patient therefore requiring the counsellor to communicate fluently in the patient's own language."</i></p> <p>Inner Setting – Resources <i>"GPs were aware that there are not enough trained counsellors with South Asian language skills and a thorough cultural understanding; therefore, this would be difficult to achieve."</i></p> <p>Characteristics of Individuals—Knowledge and Beliefs: <i>"The challenges of secondary care pain management and a mismatch between GPs' understanding of services and the actual availability was also highlighted."</i></p> <p><i>"GPs had some degree of understanding of how CBT could play a role in helping these patients manage their pain. However, they felt the current health service provision was limited and for this patient group or either</i></p>

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				<p><i>inadequate or culturally inappropriate.</i></p> <p><i>“GPs were positive about the availability of CBT but were not fully aware of the details and the services that are or will be available.”</i></p>
<p>Thorn, 2011⁵³</p> <p>High</p> <p>US community health system</p>	<p>109 adults (patients in rural Alabama health care clinics) in RCT of 10-week group CBT vs EOC</p> <p>Experienced pain most days of the month for the previous 3 months</p> <p>Interviews, questionnaires</p> <p>Descriptive statistics, bivariate analyses, ANOVA</p>	<p>As compared to participants who completed treatment, participants who eventually dropped out</p> <ul style="list-style-type: none"> Recalled prior session material less accurately (effect size NR, $F(1,75)=18.19$; $p<0.01$; $\eta^2=0.195$) Had significantly lower post-session recall scores (effect size NR, $F(1,80)=44.66$; $p<0.01$; $\eta^2=0.358$). [Assessed in CBT arm only] Had significantly poorer performance on homework (effect size NR, $F(1,44)=4.38$; $p<0.05$; $\eta^2=0.090$) 	<p>As compared to people who completed all 10 sessions, people who did not complete the intervention</p> <ul style="list-style-type: none"> had lower mean income (under vs over \$13,000 annually, $F(1,83)=9.48$; $p<0.01$; $\eta^2=0.105$) had fewer years of education (mean 11.8 vs 13.1, $p<0.02$) did not differ significantly on age, WRAT percentile, miles traveled to reach session sites, or pre-treatment BPI-pain severity, BPI-interference, CESD, RMDS, QOL, or PCS 	
<p>Van Huet, 2009⁴⁸</p> <p>Moderate</p> <p>Australian community health system</p>	<p>15 adults who previously completed a CBT-based pain management program</p> <p>Past completion of chronic pain</p>	<p><i>“Whilst all participants acknowledged their need to seek help to manage pain, some participants were already attuned to considering behavioral change while others were not.”</i></p> <p><i>“Some participants saw ‘not talking about pain’ [avoidance of focus on</i></p>		<p>Outer Setting - Patient Needs and Resources:</p> <p><i>“Some participants had learnt and practiced the technique [pacing] during the program but were unable to use it practically once at home and</i></p>

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	<p>management program (PMP)</p> <p>Standard chronic pain definition not reported. At time they completed PMP, participants had pain for an average of 93 months (range 18-300)</p> <p>Semi-structured interviews, thematic analysis of narratives</p>	<p><i>pain, refocusing on self-efficacy and self-management] as a valuable way of managing their pain... others thought it to be counter-productive to moving forward in the pain management process."</i></p> <p><i>"A few participants perceived the use of CB techniques as 'brain washing' and were aware of their reinforcement of these methods throughout the program, which they felt was unnecessary."</i></p> <p><i>"Some participants saw the use of these methods as counterproductive to working through pain issues and noted that the group-based program had not met their individual needs."</i></p> <p><i>"For some PMP participants, CB methods provided a framework to facilitate positive change. For others the concepts could not be adopted or maintained when living with unremitting pain. This appeared to be related to individuals' readiness to adopt the PMP's beliefs and attitudes about pain."</i></p>		<p><i>engaged in a multitude of daily tasks."</i></p>
CBT vs ACT				

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Wetherell et al 2016 ⁴⁶ High US VHA and community health system	114 adults in RCT of 8-week group ACT vs 8-week group CBT Non-malignant pain ≥6 months, ≥5 on BPI interference and severity subscales Intake interviews, questionnaires Bivariate statistics, ANOVA		No statistically significant difference across age groups (young: 18–45 years old; middle age: 46–64; older ≥65) in % dropout, mean number of sessions attended, mean credibility (definition NR), mean treatment satisfaction (CSQ), % expecting improvement (5-item questionnaire)	
CBT and MBSR				
Herman et al 2017 ⁵⁵ High US community health system	342 adults (large health plan in Washington State) in RCT of 8 weeks group MBSR vs group CBT vs UC Low back pain ≥3 months; self-rated bothersomeness ≥4 (0-10) and pain interference with activities ≥3 (0-10) during previous 7 days Telephone interviews, questionnaires, EHR review Cost-effectiveness analysis: costs, QALYs, healthcare utilization			Costs MBSR vs UC: mean total 1-year per-participant societal costs -\$724 (95% CI -\$4386, \$2778); mean total 1-year per-participant healthcare costs to the payer -\$982 (-\$4108, \$1301); QALY gain of 0.034 (0.008, 0.060) CBT vs UC: mean total 1-year per-participant societal costs \$125 (95% CI -\$4103, \$4347) versus UC; mean total 1-year per-participant healthcare costs to the payer \$495 (-\$2741, \$3550); QALY gain of 0.041 (0.015, 0.067). The incremental cost-effectiveness ratio for CBT over UC was

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				<p>\$3049/QALY, well below the \$50,000/QALY threshold for cost-effectiveness</p> <p>MBSR had 90% probability of costing <\$50,000/QALY, and CBT had 81% probability of costing <\$50,000/QALY, in societal cost-QALY bootstrap analyses</p> <p>Back pain-related healthcare costs show the same pattern as seen in overall healthcare costs: an increase in healthcare costs over UC for CBT and a reduction for MBSR</p> <p>Both CBT and MBSR reduced non-back related healthcare costs compared to UC. CBT reduced these costs by an average of \$489 (\$984 minus \$495) per participant, and MBSR reduced these costs by an average of \$855 (-\$127 minus -\$982) during the study year</p> <p>No significant difference between MBSR and UC, between CBT and UC, or between MBSR and CBT in</p>

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				<p>patient copay amounts or in total societal costs (total overall healthcare costs + patient copay amounts + lost productivity from absenteeism + lost productivity from presenteeism)</p> <p>No significant difference between MBSR and UC, or between CBT and UC, in health care utilization (all office-based and outpatient care, ED visits, hospital inpatient stays, pharmacy prescriptions, imaging visits) or productivity losses (absenteeism lost hours, presenteeism lost hours)</p>
ACT				
Casey, 2020 ⁵⁴ High Irish academic health system	<p>11 adults who completed 8-week multidisciplinary program (group ACT + education + exercise), 1 arm in RCT vs exercise-only</p> <p>Chronic non-cancer pain condition diagnosed by a physician; pain >12 weeks; ≥2 on Brief Pain Inventory-Interference Scale (BPI-I)</p>	<p><i>“A number of participants... referred to acceptance as an acknowledgment of the presence of pain, but with a firm belief that life could still be lived despite pain.”</i></p> <p><i>“Some participants reported having different initial responses to the concept of pain acceptance. Many described a strong initial emotional reaction, involving anger and resistance upon hearing the word ‘acceptance’...others showed no strong initial reaction and these</i></p>	<p><i>“The importance of family emerged as a key value for the study participants, who were aware of the burden their pain had on family members...”</i></p> <p><i>“The value of social interaction, achieved through re-engaging in valued activities emerged as significant for some participants... [P]articipants described an evolving awareness of self-care and a recognition of the need to</i></p>	<p>Intervention Characteristics —Group Dynamics:</p> <p><i>“Empathy and validation were highly valued by participants and this was primarily provided by other group members.”</i></p> <p><i>“The provision of altered perspectives within the group appeared to facilitate the identification of values and subsequent values-based action for some individuals...”</i></p>

Author, Year; Quality; Setting	Participants; Chronic pain definitions; Data sources and analyses	Outcomes by CFIR Domain		
		Outer Setting— Patient Knowledge and Beliefs	Outer Setting— Other Patient Attributes	Others
	Semi-structured focus groups, thematic analysis	<p><i>participants appeared to have begun the acceptance process prior to the programme commencement.</i></p> <p><i>“some...appeared to move from...initial position of anger and resistance to acceptance, towards...a realization that their lives had changed and they were now moving towards considering expanded possibilities... [D]evelopment of altered perspectives towards acceptance appeared to be associated with changes in both mindset and behaviours.”</i></p> <p><i>“Acceptance did not appear to be a specific destination that ...[to be] reach[ed]. Instead it emerged as a complex dynamic process, and participants continued to move through the various stages for some time after the programme concluded...”</i></p> <p><i>“For 1 of the participants, acceptance was associated with giving up...She chose not to accept pain as she believed acceptance would prevent her from moving forward with her life.”</i></p> <p><i>“A fear of causing damage to themselves and associated negative</i></p>	<p><i>look after their own needs as well as those of family members.”</i></p> <p><i>“...[A]lthough they could identify their personal values, some participants did not appear ready to move towards values-based action. These individuals continued to avoid experiences that were perceived to involve pain or discomfort.”</i></p> <p><i>“Some participants identified work as a key value. One individual described how they valued the social interaction associated with working and they enjoyed their job despite the physical challenges.”</i></p>	

Author, Year; Quality; Setting	Participants; Chronic pain definitions; Data sources and analyses	Outcomes by CFIR Domain		
		Outer Setting— Patient Knowledge and Beliefs	Outer Setting— Other Patient Attributes	Others
		<p><i>imagery, seemed to limit the ability to engage in the acceptance process.”</i></p> <p><i>“A belief that a specific diagnosis or cure may be offered also appeared to be a barrier to acceptance...In contrast, when participants acknowledged there was no specific cure for chronic pain, this facilitated acceptance.”</i></p> <p><i>“participants reported positive experiences... about mindfulness. Most participants understood the purpose of mindfulness to simply be in the present moment...While most participants found mindfulness to be of benefit, some appeared to struggle with the concept ‘I hated that whole mindfulness thing...’.”</i></p>		
<p>Clarke, 2017⁴²</p> <p>Moderate</p> <p>UK community health system and academic health system</p>	<p>7 adults in RCT of 6-week group ACT vs UC</p> <p>Knee or hip OA, radiologically confirmed; ≥5 on pain intensity numerical rating scale (NRS) and ≤75 on Chronic Pain Acceptance Questionnaire (CPAQ)</p> <p>Semi-structured interviews, thematic analysis</p>	<p><i>“...range of skills and knowledge that participants acquired...that contributed to their perceptions of increased self-management of their condition”</i></p> <p><i>“Accepting limitations/committing to activities describe the participants’ development of a dual attitude towards their pain following participation in the group... combined an acceptance of the ongoing presence of pain and the limitations that it will cause, but at the same time</i></p>		<p>Intervention Characteristics—Group Dynamics:</p> <p><i>“...being able to express emotions freely in a nonjudgmental atmosphere, and feeling a sense of solidarity with other OA patients that were ‘in the same boat’... feeling emotionally supported by other group members, particularly in terms of having their difficulties validated by other group members.”</i></p>

Author, Year; Quality; Setting	Participants; Chronic pain definitions; Data sources and analyses	Outcomes by CFIR Domain		
		Outer Setting— Patient Knowledge and Beliefs	Outer Setting— Other Patient Attributes	Others
		<p><i>committing to keeping as active and mobile as possible. All... mentioned this attitude as key to their self-management... acquired through participation in the group.”</i></p> <p><i>“...realization that they needed to set...consistent goals...to keep themselves as active as possible... participants...noted the need to make these goals realistic and use pacing skills to achieve it...”</i></p> <p><i>“...development of the use of mindfulness strategies especially in...how to train their attention to become more attuned to the present moment...”</i></p> <p><i>“learning more about their pain and how pain-related to their [arthritis] condition... aspect of the intervention that used psycho-educational techniques to illustrate the neuropsychological processes behind pain expression. For many... the identification of psychological factors was helpful in giving them confidence to become more active and to decatastrophize the impact of pain on their thinking and mood”</i></p> <p><i>“...helping them develop a different perspective on their pain and</i></p>		<p><i>“...benefits...from sharing with 1 another the best ways of managing their condition... included both practical strategies of self-management... and specific pain [treatments]...”</i></p> <p><i>“...therapist’s role as group facilitator...therapist’s emotional attitude (relaxed, nonjudgmental and understanding) and...use of techniques and adaptations to help the group understand and apply concepts...”</i></p> <p><i>“group helped participants identify areas [in which] they were not coping and needed to develop. For some, the group presented a ‘wake-up call’ to help them challenge negative thinking patterns or identify ways they had become ‘stuck’.”</i></p>

Author, Year; Quality; Setting	Participants; Chronic pain definitions; Data sources and analyses	Outcomes by CFIR Domain		
		Outer Setting— Patient Knowledge and Beliefs	Outer Setting— Other Patient Attributes	Others
		<i>disability...recognizing the importance of taking a biopsychosocial approach to self-management and encouraging a more positive perspective."</i>		
<p>McCracken et al 2014⁴⁷</p> <p>Moderate</p> <p>UK community health system</p>	<p>73 adults (GP practices in southwest England) in RCT of 4-session, 2-week group ACT vs UC; 24 adults in qualitative analyses</p> <p>Persistent pain ≥3 months; sought GP treatment for pain in past 6 months; ≥4 on pain interference with activities of daily living (0-10, modified disability subscale of CPG)</p> <p>Questionnaires, semi-structured interviews</p> <p>Quantitative methods NR; thematic content analysis</p>	<p><i>"...not all informants had initially recognized that the aim was to manage or cope with pain, rather than to reduce the intensity or duration of pain..."</i></p> <p><i>"obstacles to sustained engagement and attendance. Principal among these... was the challenging and emotionally/ physically demanding nature of the group sessions"</i></p> <p><i>"Whereas many found the approach helpful and referred to the benefits they had gained from specific exercises and the overall experience, others were more equivocal, and some found the approach difficult to grasp..."</i></p> <p><i>"...described their experience...[as] a focus on creating openness to experiences of pain and on values: 'It's helped me...to consider that pain is...not necessarily something to stop you doing things, to view life in a different way so life can become more rewarding..."</i></p>	<p>Participants who did not attend an adequate number (≥3) of ACT treatment sessions did not differ from those who did in terms of age, gender, ethnicity, marital status, mean years of education, employment status, number of medical comorbidities, primary pain location, pain duration, pain-related disability (RMDQ, subscale of CPG), average past-week pain intensity (NRS), pain acceptance (CPAQ), acceptance (AAQ-II), or quality of life (SF-36, EQ-5D-5L)</p> <p><i>"...factors that motivated participation...Many had experienced other interventions that had not satisfactorily ameliorated their symptoms and were prepared to try anything that's offered that might help."</i></p> <p><i>"Some informants felt that demographic factors and age in particular influenced the extent to which participants understood or were receptive to the psychological orientation of the</i></p>	<p>Intervention Characteristics</p> <p>—Group Dynamics:</p> <p><i>"how the intervention had helped them, for example, by encouraging them to reframe their own difficulties by comparison with others in the group and in doing so acquire an increased motivation to cope..."</i></p> <p>Outer Setting</p> <p>--Patient Needs and Resources:</p> <p><i>"...several participants found the duration of the sessions and the mode of delivery difficult to cope with..."</i></p>

Author, Year; Quality; Setting	Participants; Chronic pain definitions; Data sources and analyses	Outcomes by CFIR Domain		
		Outer Setting— Patient Knowledge and Beliefs	Outer Setting— Other Patient Attributes	Others
		“...some informants found the sessions emotionally challenging or difficult to understand”	intervention: ‘...for older people you need to talk their language... they’ve been through wars and what not... they just want someone to tell them either way.’”	
MBSR				
Brintz, 2020 ³⁸ High US academic health system	22 adults who completed 4-week group MBSR pain program Chronic non-cancer pain condition; daily or almost daily pain ≥3 months; >3 on 0-10 scale of pain bothersomeness in past 7 days and/or >2 on 0-10 scale of pain interference with general activities in past 7 days; established with at least 1 medical provider for pain management Structured qualitative interviews, reflexive thematic analysis	<p>“...some expressed that the length of the course was not sufficient to fully build the skill of a regular mindfulness routine.”</p> <p>“...some... [had] an expectation or desire for more focus on chronic pain than was included in the curriculum... ‘I thought it would be more focused on how to control the pain, less on exercises and breathing, [and more on] how to get off medication.’... Some participants felt that the curriculum did not focus directly on chronic pain as much as they were hoping.”</p> <p>“Three participants wanted more physical movement in the course... content that had been removed... to condense the standard MBSR course content. ‘I know a lot of people are in pain in different ways, but if we had been more focused on moving around, we wouldn’t have been thinking on the pain as much. ... I think if we had more movement it would have been better.’... These</p>		<p>Intervention Characteristics —Design Quality and Packaging “...several participants expressed their appreciation for the additional resources, such as recordings and handouts, provided by the instructors to support their practice outside of class... ‘I expected I would set out these times I would do my practice, and it just didn’t happen like that, so having a mobile set of tools helped me go with the flow about it.’... These mobile tools allowed participants to fit their mindfulness practice into their lives.”</p> <p>—Group Dynamics: “Many participants appreciated the social support they received from group participation, ...input...from group members helped them to feel less isolated in their pain experience.”</p>

Author, Year; Quality; Setting	Participants; Chronic pain definitions; Data sources and analyses	Outcomes by CFIR Domain		
		Outer Setting— Patient Knowledge and Beliefs	Outer Setting— Other Patient Attributes	Others
		<p><i>participants felt that some type of physical movement would have added value to their experience and helped the time pass more quickly.</i></p> <p><i>“Some participants suggested that the sessions be offered multiple days per week to reinforce the material. Others suggested including more information on anxiety, pain, and the mind–body connection.”</i></p>		<p><i>“...sharing with other group members helped them to feel better about what they were struggling with while learning mindfulness.”</i></p> <p><i>“...some felt that there was insufficient group bonding... [They] felt that if the class had been longer, there would have been more of an opportunity to bond as a group...four meetings...not enough for group cohesion.”</i></p> <p><i>“... some participants expressed that they would have preferred a one-on-one format for the course... they found the group detracted from their experience.”</i></p> <p>Outer Setting—Patient Needs and Resources: <i>“...getting to the sessions was an ordeal, with their pain making session attendance difficult... four participants related barriers to attendance of...meetings, with two participants noting schedule difficulties related to caregiving commitments...”</i></p>

Author, Year; Quality; Setting	Participants; Chronic pain definitions; Data sources and analyses	Outcomes by CFIR Domain		
		Outer Setting— Patient Knowledge and Beliefs	Outer Setting— Other Patient Attributes	Others
				<p><i>[Most] participants did not have difficulty attending sessions... the shortened format added benefit for fitting the course into their schedules."</i></p> <p><i>"Over half (59%) of participants stated that they would have preferred more than four sessions, with the remaining 41% stating that four was just right. The majority of participants (73%) stated that the session length of 90 minutes was just right, with only 9% of participants preferring shorter sessions."</i></p>
<p>Crisp, 2016⁴⁴</p> <p>Low</p> <p>US military health system</p>	<p>6 adult women in military who completed 6-week group MBSR pain program</p> <p>Chronic pelvic pain diagnosis</p> <p>Focus group, unclear analysis method</p>			<p>Intervention Characteristics—Design Quality and Packaging: <i>"All participants felt that weekly messages encouraged mindfulness... Being able to access an audio recording of training sessions to review at an alternate time was deemed helpful by all participants..."</i></p> <p>Outer Setting—Patient Needs and Resources: <i>"Half of the participants felt an online program would be beneficial, the other half</i></p>

Author, Year; Quality; Setting	Participants; Chronic pain definitions; Data sources and analyses	Outcomes by CFIR Domain		
		Outer Setting— Patient Knowledge and Beliefs	Outer Setting— Other Patient Attributes	Others
				<p><i>preferred in-person sessions to foster program engagement.</i></p> <p><i>“[Of those] who left the program due to time commitment, 2 were highly involved in sexual advocate responsibilities and were shuffling work commitment, single motherhood, and time commitment to the study... [Participants] were pleased with the number and timing of sessions though felt the time commitment was significant...”</i></p>
<p>George, 2017⁴³</p> <p>Moderate</p> <p>US academic health system</p>	<p>32 HIV+ adults in randomized pilot study of 8-week group MBSR pain program vs EOC; 10 in baseline focus group, unclear number in post-interventions groups;</p> <p>Neuropathic and/or musculoskeletal pain ≥ 3 months</p> <p>Questionnaires; focus groups</p> <p>Descriptive statistics, correlations, ANOVA; thematic analysis</p>	<p><i>“...participants were generally open to [mind-body treatments]”</i></p> <p><i>“1) MBSR techniques are useful for relaxation and relieving pain; and 2) practice of MBSR techniques has benefit that extends beyond the practice time...”</i></p>	<p>Higher baseline pain interference (BPI-Interference) was correlated with less-frequent session attendance (r -0.357, p=0.045).</p> <p>Attendance was not associated with participant demographic factors (age, gender, ethnicity, whether or not they lived alone) or with whether or not participants had a pre-existing relationship with the research team</p>	<p>Intervention—Group Dynamics:</p> <p><i>“Participants from both groups valued the opportunity to come together and connect with people with similar experiences.”</i></p> <p><i>“...there should be more time for conversation... ‘We had a chance to not just hear what everybody has to say, but to talk to each other. And we were being curtailed from doing that.’”</i></p> <p>Outer Setting—Patient Needs and Resources:</p>

Author, Year; Quality; Setting	Participants; Chronic pain definitions; Data sources and analyses	Outcomes by CFIR Domain		
		Outer Setting— Patient Knowledge and Beliefs	Outer Setting— Other Patient Attributes	Others
				“...there should be less sitting still, which tended to exacerbate pain...”
Martinez, 2015 ⁵⁶ Moderate US, VHA	48 Veterans referred to group MBSR at 1 facility (n=21 declined, n=21 completed treatment, n=6 dropped out); EHR diagnoses from VHA data—37 with chronic pain, 32 with history of depression, 25 with PTSD Semi-structured interviews, “simultaneous inductive and deductive content analysis”	<p>“Insufficient or inaccurate information [about MBSR] also surfaced as a barrier...especially if it led [them] to believe that the program would not be valuable... 1 decliner was under the impression from her provider that MBSR was for people whose problems were in their head”</p> <p>“...[M]ore complex barriers... [included] difficulty understanding the purpose of MBSR practices... ‘I felt ignorant and embarrassed so that’s why I quit.’”</p> <p>“Some veterans with pain found practicing the body scan to be difficult. To increase awareness of their bodily sensations and ‘focus on my pain’ was a challenging concept: ‘We’re supposed to resist the pain. You know, that’s what we’re taught: resist the pain, not to approach and accept it.’ Another veteran explained, ‘There were body parts of mine that hurt, that I didn’t recognize hurt until I did the body scan, and I went [sigh], well that sucks, you know, realizing that my toes aren’t just numb, but there’s more of a pain also.’ Even knowing that it is ‘something you’re</p>	<p>“...Referring providers expressed concern that MBSR would not be a good fit for veterans with strong religious beliefs... However, many participants reported that this was not an issue and... most did not perceive a relationship between MBSR and their religion/ spirituality at all.”</p>	<p>Intervention Characteristics — Design Quality and Packaging: “wanted MBSR to be held in a space that is quiet, not ‘too crowded,’ and consistent”</p> <p>—Group Dynamics: “Negative reactions to the instructor or other group members also led to discontinuation... frustration with class time spent discussing topics that they viewed as irrelevant: ‘I quit because there are three gentlemen in there who...have nothing better to do and want to talk about Vietnam. I’m not there to get over the military, I’m over there to get over my back pain.’”</p> <p>“Some first-time participants found the presence of re-enrollees problematic...”</p> <p>“...[M]ixed-gender [groups]... was difficult for some women with histories of sexual assault...”</p>

Author, Year; Quality; Setting	Participants; Chronic pain definitions; Data sources and analyses	Outcomes by CFIR Domain		
		Outer Setting— Patient Knowledge and Beliefs	Outer Setting— Other Patient Attributes	Others
		<p><i>supposed to learn to deal with and you know, accept, and go on with, many patients preferred to 'ignore it and not pay attention if it's there, if I can help it.'"</i></p> <p><i>"Some were afraid that they were 'just going to end up hurting real bad,' even if they believed that 'can't be the reason [the teachers] want us to do it.'"</i></p>		<p><i>"...[Veterans with] experiences from varying periods of service... was challenging for some participants when it affected the focus of group discussion..."</i></p> <p><i>"Many patients were able to minimize pain and accommodate their disabilities by making adjustments to the standard practices [of seated meditation]... Sometimes, the MBSR teacher aided in this process...other times 'the instructors need to be a little bit more open-minded... some of us have to stretch a certain way or move a certain way.'"</i></p> <p><i>"Participants were discouraged by groups that felt unstructured or lacked adequate control by the instructor, which prompted a dropout at least once. Conversely, they seemed to respond well to teachers who were able to take a group of 'hard core veterans' through each and every step of the program'... [T]eachers' lack of</i></p>

Author, Year; Quality; Setting	Participants; Chronic pain definitions; Data sources and analyses	Outcomes by CFIR Domain		
		Outer Setting— Patient Knowledge and Beliefs	Outer Setting— Other Patient Attributes	Others
				<p><i>military service...[and] [u]nfamiliarity with veteran culture was perceived as leading to reluctance...to provide limits and accountability during group discussion...</i></p> <p>Outer Setting—Patient Needs and Resources: <i>“Meditating for long periods of time... was challenging enough for some to say “the class wasn’t meant for a person going through all the pain I was going through.” However, they were still “able to put the pain aside and gather something even though I was in a great deal of pain.” In fact, participating in the practices despite the discomfort “makes me feel a little better because it’s saying I can do stuff even though I’m still in all this pain.”</i></p> <p><i>“When dropouts were asked why they did not complete MBSR, many cited logistical reasons, such as scheduling conflicts (eg, full-time employment), insufficient practice time, or that</i></p>

Author, Year; Quality; Setting	Participants; Chronic pain definitions; Data sources and analyses	Outcomes by CFIR Domain		
		Outer Setting— Patient Knowledge and Beliefs	Outer Setting— Other Patient Attributes	Others
				<i>attendance was inhibited by medical/surgical problems affecting mobility... Many patients were able to minimize pain and accommodate their disabilities by making adjustments to the standard practices...In other cases, however, veterans did not feel supported when they tried to make these adjustments..."</i>

Abbreviations. AAQ-II=Acceptance Action Questionnaire; ACR=American College of Rheumatology; ACT=Acceptance and Commitment Therapy; AIMS2-SF=Arthritis Impact Measurement Scales Version 2 Short Form Revised; BDI=Beck Depression Inventory; BDI-II=Beck Depression Inventory-Second Edition; BPI=Brief Pain Inventory; CB=cognitive behavioral; CBT=Cognitive Behavioral Therapy; CBT-CP=Cognitive Behavioral Therapy for Chronic Pain; CBT-PI=Cognitive Behavioral Therapy for Pain and Insomnia; CESD=Center of Epidemiological Studies Depression Scale; CFIR=Consolidated Framework for Implementation Research; CPAQ=Chronic Pain Acceptance Questionnaire; CPG=Chronic Pain Grade; CPGQ=Chronic Pain Grade Questionnaire; CSQ=Client Satisfaction Questionnaire; CWP=chronic widespread pain; DBAS=Dysfunctional Beliefs and Attitudes About Sleep; EHR=Electronic health record; EOC=education-only control; EQ-5D-5L=EuroQol measure of quality of life; FFS=Flinders Fatigue Scale; GCPS=Graded Chronic Pain Scale; GDS=Geriatric Depression Scale; GP=General practitioner, term commonly used in UK; GPR=Global Pain Rating; HIV=Human Immunodeficiency Virus; ISI=Insomnia Severity Index; MBSR=Mindfulness-Based Stress Reduction; NR=not reported; NRS=Numeric Rating Scale; OTC=over the counter, referring to medications bought directly by patients rather than prescribed by a health care provider; PBCL=Pain Behavior Check List; PCP=Primary care provider, term commonly used in US; PCS=Pain Catastrophizing Scale; PHQ-9=Patient Health Questionnaire-9; PMP=pain management program; PRI=Pain Rating Index, from McGill Pain Questionnaire; PRIME CBT=Primary Care Based Cognitive Behavioral Therapy; PSOCQ=Pain Stages of Change Questionnaire; PSQI=Pittsburgh Sleep Quality Index; QALY=quality-adjusted life year; QOL=Quality of life; RCT=randomized controlled trial; RMDQ=Roland-Morris Disability Questionnaire, 24 items; RMDS=Roland-Morris Disability Scale-11, 11 items; SF-36=Short Form Health Survey; SOPA=Survey of Pain Attitudes; T-CBT=telephone cognitive behavioral therapy; TSK=Tampa Scale for Kinesiophobia; UC=usual care; UK=United Kingdom; US=United States of America; VA=Veterans Affairs; VHA=Veterans Health Administration; WHOQOL=World Health Organization Quality of Life; WHYMPI=West Haven–Yale Multidimensional Pain Inventory; WRAT=Wide Range Achievement Test-4.

Appendix Table G2. KQ2 Articles Examining Facilitators and Barriers to Implementation for CBT and CBSST for Chronic Mental Health Conditions

Author, Year; Quality; Setting	Participants; Data sources; Analyses	Intervention	Outcomes by CFIR Domains			Characteristics of Individuals
			Outer Setting	Inner Setting		
<i>CBT for Insomnia, SUD, and OCD</i>						
Amodeo, 2011⁹⁷ Low US community clinics	27 staff implementing CBT at addiction treatment programs funded by CSAT/SAMHSA Semi-structured interviews Content analysis		<p>Patient Needs:</p> <ul style="list-style-type: none"> Among 10 most frequently reported barriers for CBT—attendance is poor, transportation, cultural/language barriers <p>Patient Other Attributes:</p> <ul style="list-style-type: none"> Among 10 most frequently reported barriers for CBT—client resistance, cognitive barriers to understanding CBT concepts, anti-social personality disorder, groups often resist session content 	<p>Readiness for Implementation—Available Resources:</p> <ul style="list-style-type: none"> Among 10 most frequently reported barriers for CBT— not enough time to complete treatment, staff not trained well enough 		<p>Knowledge & beliefs:</p> <ul style="list-style-type: none"> Among 10 most frequently reported barriers for CBT— not enough well educated, qualified staff in our geographic area
Koffel, 2020a⁵⁷ High US (VHA)	29 patients with insomnia Focus groups Thematic analysis	<p>Adaptability:</p> <p><i>“...several patients indicated that they would place a workbook by their bed for quick reference, use electronic applications...when traveling, and use web-based CBT-I on their computer or tablet at home.”</i></p>	<p>Patient Other Attributes:</p> <p><i>“...general sense of hesitancy to immediately commit to provider-delivered CBTI...the exception was patients who had a positive history with mental health treatments.”</i></p>	<p>Readiness for Implementation—Available Resources:</p> <p><i>“[Primary Care providers] are in such a hurry to get you out the door that they don’t ask about sleep.”</i></p> <p>Patient-Provider Relationships:</p> <p><i>“...more willing to engage if 1) a known primary care provider facilitated an introduction or 2) the CBT-I provider reached out to them.”</i></p>		<p>Knowledge & Beliefs:</p> <p><i>“Several patients pointed out that providers need to be informed about CBT-I to answer patient questions and facilitate referrals.”</i></p>

Author, Year; Quality; Setting	Participants; Data sources; Analyses	Intervention	Outcomes by CFIR Domains		
			Outer Setting	Inner Setting	Characteristics of Individuals
<p>Koffel, 2020b⁵⁹</p> <p>High US (VHA)</p>	<p>17 providers (5 facilities)—8 PCPs, 4 psychologists, 5 CBT-I coordinators</p> <p>Semi-structured interviews</p> <p>Thematic analysis</p>	<p>Adaptability: <i>“...providers appreciated the potential scalability and convenience of CBT-I for primary care settings...”</i></p>	<p>Outer Setting</p>	<p>Inner Setting</p> <p>Networks & Communications: <i>“Strong connections between primary care clinics, PCMH teams, and sleep medicine clinics increased utilization of CBT-I.”</i></p> <p>Implementation Climate—Relative Priority: <i>“The general consensus among physicians was that sleep took a ‘backseat priority’ in complex patients and was not prioritized by patients or providers.”</i></p> <p>Readiness for Implementation—Leadership Engagement: <i>“...two key facilitators that... contributed to a successful implementation and widespread dissemination of CBT-I: local champions and leadership support.”</i></p> <p>—Available Resources: <i>“Most primary care physicians were satisfied with CBT-I resources in their facility.”</i></p> <p>—Access to Knowledge & Info: <i>“Several primary care physicians expressed the desire for a more centralized resource to learn about CBT-I and make referrals...”</i></p>	<p>Characteristics of Individuals</p> <p>Knowledge & Beliefs: <i>“I have been educated in research talks from an expert in the area. I’ve forgotten the specifics of studies that show effectiveness, but I believe it is effective based on what I have heard.”</i></p> <p><i>“...psychologist suggested integrating CBT-I education into resident lectures about general primary care problems, like pain, anxiety, and depression to increase the use of CBT-I as a first-line treatment.”</i></p>

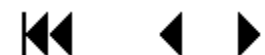
Author, Year; Quality; Setting	Participants; Data sources; Analyses	Outcomes by CFIR Domains			Characteristics of Individuals
		Intervention	Outer Setting	Inner Setting	
Kyrios, 2010⁹⁸ Low	9 general practice providers, 10 psychologists			<p>Provider Decision-Making: <i>“...I like sending them out to PCMH because I secretly hope they will address some of their underlying mental health issues...”</i></p> <p>Readiness for Implementation—Available Resources; Access to Knowledge & Information: <i>“GPs reported that they needed greater basic knowledge about OCD. They requested psycho-educational information in relation to screening for and assessing the severity of OCD symptoms; they also requested treatment guidelines and some training in CBT strategies.”</i></p>	<p>Knowledge & Beliefs: <i>“Psychologists reported themselves as knowledgeable about OCD...also stressed importance of GP support in ongoing care and management of people with OCD...”</i></p>
Australian clinics	Interviews, focus groups Content analysis			<p>Readiness for Implementation—Available Resources: <ul style="list-style-type: none"> • Satisfaction regarding opportunities for training is assessment and diagnosis of sleep disorders (Likert 1-10, 10=very satisfied), most common response was 5 (33%) </p>	<p>Knowledge & Beliefs: <ul style="list-style-type: none"> • 82% had some familiarity with CBT-I • Perceived available sleep treatments included referral to sleep specialist within VHA facility (53%) and referral to CBT-I (29%) </p>
Ulmer, 2017⁶⁴ Moderate US (VHA)	51 PCPs Surveys, response rate 13% Descriptive statistics				
<i>CBSST for Severe Mental Illness</i>					
Sommerfeld, 2019⁹⁹ Moderate	8 clients of assertive community treatment, 54 treatment	Adaptability, Complexity: <ul style="list-style-type: none"> • Provider’s ability to apply CBSST flexibly 	External Policy: <ul style="list-style-type: none"> • External rules, guidelines and resources—data systems to measure and report meaningful CBSST 	Networks & Communications: <ul style="list-style-type: none"> • Providers having tools to track/monitor client progress • Seeing other providers’ success delivering CBSST 	Knowledge & Beliefs: <ul style="list-style-type: none"> • Provider beliefs about whether CBSST improves client outcomes, client progress in setting or

Author, Year; Quality; Setting	Participants; Data sources; Analyses	Intervention	Outcomes by CFIR Domains			Characteristics of Individuals
			Outer Setting	Inner Setting		
<p>US local behavioral health agencies</p>	<p>providers, 11 leaders of treatment teams, 5 agency administrators, 5 public sector administrators, 4 trainers</p> <p>Focus groups</p> <p>Concept mapping</p>	<ul style="list-style-type: none"> • Having sufficient time in visits to go as ‘deep’ as needed for CBSST 	<p>outcomes, available funding to deliver CBSST, recognition of CBSST as an effective treatment approach</p> <ul style="list-style-type: none"> • Funding source willingness to adjust requirements regarding productivity, case-load, and time-frames <p>Patient Beliefs & Knowledge:</p> <ul style="list-style-type: none"> • Relevance of CBSST concepts/ideas to clients • Client motivation/buy-in to do CBSST <p>Other Patient Attributes:</p> <ul style="list-style-type: none"> • Openness of clients to structured materials (eg, workbooks, homework) 	<ul style="list-style-type: none"> • Systems/processes to communicate client CBSST information among providers <p>Implementation Climate—Compatibility:</p> <ul style="list-style-type: none"> • Flexibility to adapt CBSST while maintaining fidelity, • CBSST structure/content makes visits feel more purposeful • Creation of shared expectations for both clients and providers • Compatibility of CBSST with other EBPs, <p>Readiness for Implementation—Leadership Engagement:</p> <ul style="list-style-type: none"> • Communication about CBSST importance from team supervisors/leads • Prioritization level of CBSST by agency • Agency leadership buy-in of/support for CBSST <p>—Available Resources:</p> <ul style="list-style-type: none"> • Understaffed/overworked teams • Additional administrative demands (eg, documentation) needed to deliver CBSST • Impact on provider productivity requirements 	<p>accomplishing goals due to CBSST</p> <ul style="list-style-type: none"> • Provider perception of usefulness/relevance of CBSST skills to other interventions • Perceived burden of delivering CBSST • Receiving positive feedback from clients <p>Self-efficacy:</p> <ul style="list-style-type: none"> • Provider confidence delivering CBSST <p>Other Attributes:</p> <ul style="list-style-type: none"> • Provider openness to try new things • Provider enthusiasm for CBSST 	

Author, Year; Quality; Setting	Participants; Data sources; Analyses	Intervention	Outcomes by CFIR Domains		Characteristics of Individuals
			Outer Setting	Inner Setting	

- Access to CBSST information and training
- Time allotted for practice and feedback during training, supervision for providers

Abbreviations. CBT=Cognitive Behavioral Therapy; CBT-I= Cognitive Behavioral Therapy for Insomnia; CQR= Consensual Qualitative Research; CSAT/SAMHSA=Center for Substance Abuse Treatment/Substance Abuse and Mental Health Services Administration; DBT=Dialectical Behavioral Therapy; EBP=Evidence-Based Psychotherapies; GP=General Practitioner; MBSR=Mindfulness-Based Stress Reduction; OCD=Obsessive-Compulsive Disorder; PARIS=Promoting Action on Research Implementation in Health Services; PCMH=Primary Care Mental Health Integration; PCP=Primary Care Provider; PE=Prolonged Exposure Therapy; PTSD=Posttraumatic Stress Disorder; CBSST=Cognitive Behavioral Social Skills Training; SUD=Substance Use Disorder; VHA=Veterans Health Administration



Appendix Table G3. KQ2 Articles Evaluating Implementation Strategies for CBT, ACT, DBT, MET, and Contingency Management

Author, Year; Quality; Setting;	Participants & Strategy; Data sources; Analyses	RE-AIM Outcomes				
		Reach	Effectiveness	Adoption	Implementation	Maintenance
<i>CBT for Pain, Depression, Anxiety, Insomnia, and PTSD</i>						
Clark, 2009⁹⁴ Low UK	<p>Patients at a primary care clinic, most referred for in-person CBT for depression or anxiety</p> <p>Patient symptoms and referrals</p> <p>Paired t-tests comparing initial assessment vs post treatment outcomes</p>	<ul style="list-style-type: none"> • 24% of the patients referred (249 of 1043) attended ≥ 2 sessions • 22% black individuals among self-referrals (total n=203) vs 16% of those referred by GPs (total n= 688), p= 0.04 	<ul style="list-style-type: none"> • Mean PHQ-9 scores at initial assessment were 15.3 (SD=6.2) vs mean 8.2 (SD=7.2) at last available session, Cohen’s d=1.06, p<0.001 • Mean GAD-7 scores at initial assessment 13.7 (SD=5.1) vs mean 6.8 (SD=5.8) at last available session, Cohen’s d=1.26, p<0.001 			
Cully, 2010⁸⁸ Moderate	<p>28 providers trained in CBT for depression (20 clinics), 12 received external facilitation (10 clinics) and 11 did not (10 clinics), all within the South Central Veterans Integrated Service Network</p> <p>Pre- and post-workshop surveys, and 3</p>			<ul style="list-style-type: none"> • Non-significant differences between groups in change in CBT use from baseline to 3 months post-training (p=0.22): <ul style="list-style-type: none"> – Facilitated providers—mean 19% of patients treated with CBT at baseline, 38% at follow-up – Non-facilitated providers—mean 32% of patients 	<ul style="list-style-type: none"> • \$2,489 personnel costs of CBT training: <ul style="list-style-type: none"> – 25 hours of facilitator time (\$1,445) – 26.5 hours of provider time (\$1,014) – Gained 332 more hours of CBT delivered over 7 months • Barriers to using CBT: 	



Author, Year; Quality; Setting;	Participants & Strategy; Data sources; Analyses	RE-AIM Outcomes				
		Reach	Effectiveness	Adoption	Implementation	Maintenance
	<p>months post-consultation survey; interviews; and study logs</p> <p>χ^2 and nonparametric Wilcoxon signed rank tests, ANOVA; qualitative analytic methods NR</p>			<p>treated with CBT at baseline, 35% at follow-up</p> <ul style="list-style-type: none"> • Provider characteristics not associated with change in CBT use—location (medical center vs community clinic), professional background (psychologist vs social worker vs nurse), and prior CBT training • Non-significant differences between groups in change in CBT knowledge and ability from baseline to 3 months post-training • Increase in use of specific CBT procedures from baseline to 3 months post-training (Likert 1-5, 1=never, 5= always) [Cully]: orienting patients to CBT (p=0.003), setting goals (p = 0.002), and behavioral activation (p = 0.01) • Increase in CBT knowledge from baseline to 3 months post-training (Likert 1- 	<ul style="list-style-type: none"> – Lack of control over schedule – Provider rejection of CBT due to difficulty and inflexibility; – Therapist duties – Poor communication between therapists and leadership 	

Author, Year; Quality; Setting;	Participants & Strategy; Data sources; Analyses	RE-AIM Outcomes				
		Reach	Effectiveness	Adoption	Implementation	Maintenance
<p>Curran, 2015⁸¹</p> <p>High</p> <p>US (VHA)</p>	<p>8 counselors (7 SUD clinics) who completed online training in CBT for depression</p> <p>Semi-structured interviews</p> <p>Template approach & interpretive analysis</p>	<p>“...a lot of the clients we have come in with different traumas, different losses that they have experienced, and... CBT... might not help them enough...”</p>		<p>5, 1=poor, 5=excellent) (p < 0.01), but not in CBT ability (p = 0.07)</p>	<p>“I’m going to have to do the group [alone]...I don’t think I’m going to have a co-facilitator...”</p> <p>“...we may just admit them on an open basis which is not ideal with the curriculum, but...I’m not too worried. I am comfortable enough ... that I can adapt on the fly.”</p>	
<p>Hepner, 2011⁹⁰</p> <p>Moderate</p> <p>US community clinics</p>	<p>5 addiction counsellors in Los Angeles County who were trained in group CBT for depression, and 113 patients who attended ≥1 CBT session and responded;</p> <p>Surveys (86% response rate) and ratings of audio-recorded sessions (N=80);</p> <p>Random effects ANOVA for</p>	<p>• Most patients thought groups helpful:</p> <ul style="list-style-type: none"> – 86% could use information from group in daily life – 83% agreed exercises conducted in group were helpful – 86% found group leaders helpful – 77% agreed group was helpful in improving mood 			<ul style="list-style-type: none"> • Mean provider adherence rate was 94%, 84% of coded sessions had adherence rates > 85% • Mean provider competence score was 4.1 (≥ 4.0 indicated competence) • Adherence and competence did not vary by treatment module (p=0.3 and p=0.2) 	

Author, Year; Quality; Setting;	Participants & Strategy; Data sources; Analyses	Reach	Effectiveness	RE-AIM Outcomes		
				Adoption	Implementation	Maintenance
Karlin, 2012⁹³ Moderate US (VHA)	<p>differences by treatment module</p> <p>221 providers in national training program for CBT for depression (82% completed training), and 356 patients who received CBT from trainees during consultation phase</p> <p>Surveys pre- and post-workshop, and post-consultation (79%-95%), and 3-12 months after full training (response rates; competency ratings on audio-recorded patient sessions; patient reported outcomes (source NR)</p> <p>t-tests, ITT analyses examining patient</p>	<ul style="list-style-type: none"> - 77% could understand presented information 	<ul style="list-style-type: none"> • Comparing initial to later sessions (#10 or after), BDI-II scores decreased: <ul style="list-style-type: none"> - Mean 28.1 initially, 16.9 later (p<0.001) - Using LOCF, mean 28.2 initially, 19.6 later (Cohen's d=0.80, p<0.001) • For 181 patients who completed ≥10 sessions and completed WHOQOL-BREF, scores in all domains increased: <ul style="list-style-type: none"> - Psychological Cohen's d = 0.74 (p <0.001) - Physical Cohen's d = 0.48 (p <0.001) - Social: Cohen's d = 0.44 (p <0.001) - Environmental Cohen's d = 0.39 (p <0.001) 	<ul style="list-style-type: none"> • CBT-specific self-efficacy mean scores: <ul style="list-style-type: none"> - pre-workshop 3.7 (SD 0.9) - post-workshop 4.0 (SD 0.7) - post-consultation 4.8 (SD 0.7) - p<0.001 both comparisons - 7-item scale, Likert responses (1-5, disagree to strongly agree) • General psychotherapy self-efficacy mean scores: <ul style="list-style-type: none"> - pre-workshop scores NR (noted as not different from post) - post-workshop 4.5 (SD 0.6) - post-consultation 5.1 (SD 0.6) - p<0.001 comparing post-workshop to post-consultation - 8-item scale, Likert responses (1-5, disagree to strongly agree) 	<ul style="list-style-type: none"> • Of 167 providers with competency ratings data both initially and later during training, mean scores increased from 38.2 (SD 8.6) to 45.0 (SD 6.9), p<0.001 • 87% of providers had competency scores ≥ 40 later in training (41% did initially) 	<ul style="list-style-type: none"> • 3-12 months post-training, providers used CBT with on average, 47% of patients (with depression), average was 19 total patients with depression treated per provider since completion of training, (range 0-140) • 3-12 months post-training, providers reported they were likely to recommend CBT to patients with depression



Author, Year; Quality; Setting;	Participants & Strategy; Data sources; Analyses	Reach	Effectiveness	RE-AIM Outcomes		
				Adoption	Implementation	Maintenance
	outcomes (mixed effects models, also used LOCF for missing data)			<ul style="list-style-type: none"> • CBT attitudes mean scores: <ul style="list-style-type: none"> – pre-workshop 3.9 (SD 0.5) – post-workshop 4.1 (SD 0.4) – post-consultation 4.2 (SD 0.5) – p<0.001 both comparisons – 15 items, response options NR 		
<p>Karlin, 2013⁸⁵ Moderate</p> <p>Manber, 2013⁹² Moderate</p> <p>US (VHA)</p>	<p>207 providers trained in national program for CBT-I (193 completed the program), and 182 patients with insomnia who received ≥ 1 CBT-I session from trainees</p> <p>Surveys (response rate 89% for 6 months follow-up) and competency ratings of audio-recorded sessions;</p> <p>t-tests, mixed effects models examining changes in</p>		<ul style="list-style-type: none"> • ISI scores (n=115 patients who completed treatment) decreased from mean 20.5 (SD 4.4) at baseline to 11.0 (SD 6.9) after (p<0.001), 60% had moderate improvement (≥ 8 points decrease), and 53% had ISI score <11 after treatment (cutoff for insomnia diagnosis) • BDI-II scores (n=115) decreased from mean of 23.8 (SD=11.3) at baseline to 17.1 (SD=12.3) at last session, Cohen's d= 0.60 (p<0.001) • WHOQOL-BREF scores (n=104-112) 	<ul style="list-style-type: none"> • CBT-I-specific self-efficacy mean scores: <ul style="list-style-type: none"> – pre-workshop 3.6 (SD 1.1) – post-workshop 4.3 (SD 0.7) – post-consultation 5.1 (SD 0.7) – p<0.001 both comparisons – Likert responses (1-6, Not at all confident to completely confident) • General psychotherapy self-efficacy mean scores: <ul style="list-style-type: none"> – pre-workshop scores NR (noted as not different from post) – post-workshop 4.9 (SD 0.6) 	<ul style="list-style-type: none"> • 401 taped sessions (99 providers) were reviewed for competency, item scores 0-4 (poor to excellent) • Mean competency scores 4.9 points higher comparing first with sixth session for first patients (p<0001), and 2.9 points higher comparing first with second patients (p<0.001) 	<ul style="list-style-type: none"> • At 6 months post-training, 74% providers were using CBT-I, mean of 3.4 patients treated with CBT-I per provider in past month (range 0-52) • Common challenges to ongoing use of CBT-I: <ul style="list-style-type: none"> – competing professional demands (35 providers) – patient issues like no-shows and patients' distance from clinic (14 providers)

Author, Year; Quality; Setting;	Participants & Strategy; Data sources; Analyses	RE-AIM Outcomes				
		Reach	Effectiveness	Adoption	Implementation	Maintenance
	competency scores and patient symptoms		decreased across all domains: – Psychological Cohen’s d = 0.60 (p <0.001) – Physical Cohen’s d = 0.87 (p <0.001) – Social: Cohen’s d = 0.40 (p <0.001) – Environmental Cohen’s d = 0.34 (p <0.001)	– post-consultation 5.3 (SD 0.5) – p<0.001 comparing post-workshop to post-consultation – Likert responses (1-6, Not at all confident to completely confident) • CBT attitudes mean scores: – pre-workshop 4.0 (SD 0.5) – post-workshop 4.4 (SD 0.5) – post-consultation scores NR (noted as not different) – p<0.001 comparing pre- to post-workshop – 6 items, Likert responses (1-5, strongly disagree to strongly agree)		
Mignogna, 2014⁸⁶ Moderate US (VHA)	9 PCMHI providers (2 sites) who received online training in CBT for anxiety and depression (4 completed all modules), with audit and			• 5 providers agreed to accept 1-2 patient per month, as part of study	• Ratings of patient sessions (Likert scale 0-8 on adherence and skill, 6 = good and 8 = very good/excellent), mean adherence 6.7, (SD 0.98) and skill 6.2 (SD 0.84)	

Author, Year; Quality; Setting;	Participants & Strategy; Data sources; Analyses	RE-AIM Outcomes				
		Reach	Effectiveness	Adoption	Implementation	Maintenance
Ruzek, 2014a ⁸³ Moderate US (VHA)	feedback and facilitation Surveys and ratings of audio-recorded sessions Descriptive statistics					
	139 mental health providers randomized to CBT training as usual (n=51), internet training modules only (n=46), and internet training with telephone consultation (n=42)			<ul style="list-style-type: none"> • Changes in mean CBT knowledge test scores (range 0-12) pre- to post-training—no training 0.26; internet only 1.26; internet with consultation 1.72 (p<0.001, either training arm vs control) • Changes in mean self-efficacy (Likert 1-10) pre- to post-training—no training 0.21; internet only 1.08; internet with consultation 1.28 (p<0.001, either training arm vs control) • Changes in mean self-reported frequency of using skills (Likert 1-5) pre- to post-training—no training 0.20; internet only 0.37; internet with consultation 0.23 (p-value NR) 	<ul style="list-style-type: none"> • Changes in mean skills ratings pre- to post-training on standardized patient encounters: <ul style="list-style-type: none"> – Motivation enhancement—no training -0.01; internet only 0.12; internet with consultation 0.35 (p<0.001, either training arm vs control) – Goal setting—no training 0.10; internet only 0.04; internet with consultation 0.18 (p-value NR) – Behavioral task assessment—no training -0.02; internet only 0.17; internet with consultation 0.27 (p<0.001, either 	
	Surveys and provider skills rated on standardized patient encounters, pre- and post-training					
	ANCOVA comparing post-training scores					

Author, Year; Quality; Setting;	Participants & Strategy; Data sources; Analyses	Reach	Effectiveness	RE-AIM Outcomes		
				Adoption	Implementation	Maintenance
<p>Stewart, 2015²⁴</p> <p>Moderate US (VHA)</p>	<p>71 providers trained in national program for CBT-CP (60 completed training), and 148 patients with chronic pain who received CBT-CP from trainees</p> <p>Surveys 6 months post-training (response rate 80%), competency ratings of audio-recorded sessions, and patient reported symptoms</p> <p>t-tests for differences in provider competency, ITT mixed effects models examining patient outcomes</p>		<ul style="list-style-type: none"> • Pain Catastrophizing Scale scores decreased from mean of 31.2 (SD 11.2) at initial session to 22.0 (SD 14.9) at final session, Cohen's d= 0.81, p<0.001 • Pain NRS decreased from mean 8.5 (SD 1.3) to 8.1 (SD 1.7), Cohen's d = 0.26, p<0.01 • Multidimensional Pain Inventory- Interference Scale scores decreased from mean of 4.7 (SD 0.8) to 4.2 (SD 1.1), Cohen's d = 0.57, p<0.001 • BDI-II scores decreased from mean 27.4 (SD 11.5) to 21.3 (SD 10.9), Cohen's d =0.53, p<0.001 • WHOQOL-BREF scores increased for all domains: <ul style="list-style-type: none"> - Psychological Cohen's d = 0.36 (p <0.001) 		<p>training arm vs control)</p> <ul style="list-style-type: none"> • On 485 recorded sessions (51 providers, mean 9.5 sessions per provider), competency ratings increased: <ul style="list-style-type: none"> - First patients mean of 3.3 (SD 0.5) to second patients mean 3.5 (SD 0.4), p=0.003 - Sessions 2-6 mean of 3.5 (SD 0.5) to sessions 7-10 mean 3.6 (SD 0.5), p<0.001 	<ul style="list-style-type: none"> • 6 months post-training, mean of 13.8 (SD 13.3) patients treated with CBT-CP per provider, mean 66% of patients with chronic pain being treated with CBT-CP per provider • Mean 74% of new patients with chronic pain with whom outcome measures were used, per provider • Providers were confident with CBT-CP protocol, thought CBT-CP was effective, and were likely to recommend it to patients

Author, Year; Quality; Setting;	Participants & Strategy; Data sources; Analyses	Reach	Effectiveness	RE-AIM Outcomes		
				Adoption	Implementation	Maintenance
			<ul style="list-style-type: none"> - Physical Cohen's d = 0.45 (p <0.001) - Social: Cohen's d = 0.30 (p = 0.003) - Environmental Cohen's d = 0.22 (p =0.005) 			
<i>ACT for Depression</i>						
<p>Walser, 2013⁸⁴</p> <p>High</p> <p>US (VHA)</p>	<p>391 providers trained in national program for ACT (334 completed training), and 745 patients who received ACT from trainees</p>		<ul style="list-style-type: none"> • BDI-II scores mean of 30.5 (SD NR) at baseline and 19.4 (SD 5.6) at final assessment, p<0.001, Cohen's d NR • For patients who had ≥10 sessions (n=417), WHOQOL-BREF scores increased for all domains: <ul style="list-style-type: none"> - Psychological Cohen's d = 0.61 (p <0.001) - Physical Cohen's d = 0.46 (p <0.001) - Social Cohen's d = 0.45 (p <0.001) - Environmental Cohen's d = 0.40 (p <0.001) 	<ul style="list-style-type: none"> • ACT-specific self-efficacy mean scores: <ul style="list-style-type: none"> - pre-workshop 3.1 (SD 1.0) - post-workshop 3.8 (SD 0.7) - post-consultation 4.6 (SD 0.7) - p<0.001 both comparisons - Likert responses (1-6, Not at all confident to completely confident) • General psychotherapy self-efficacy mean scores: <ul style="list-style-type: none"> - pre-workshop 4.8 (SD 0.7) - post-workshop 4.7 (SD 0.7) - post-consultation 5.1 (SD 0.6) 	<ul style="list-style-type: none"> • Proportion of providers who met ACT competency threshold (≥90 on ratings) were 21% in early, 68% in middle, and 96% in late consultation phase 	<ul style="list-style-type: none"> • At 3-12 months post-training, providers using ACT with mean 39% of patients with depression • 48% providers agreed that ACT is effective for treating depression
	<p>Surveys pre- and post-workshop, post-consultation, and 3-12 months post-training (response rates 49-83%), and patient reported outcomes</p>					
	<p>t-tests, mixed effects models examining changes in competency and symptoms</p>					

Author, Year; Quality; Setting;	Participants & Strategy; Data sources; Analyses	RE-AIM Outcomes				
		Reach	Effectiveness	Adoption	Implementation	Maintenance
				<ul style="list-style-type: none"> - p<0.001 comparing post-workshop to post- - Likert responses (1-6, Not at all confident to completely confident) • ACT attitudes mean scores: <ul style="list-style-type: none"> - pre-workshop 3.8 (SD 0.5) - post-workshop 4.1 (SD 0.5) - post-consultation 4.2 (SD 0.6) - p<0.001 comparing pre- to post-workshop - 6 items, Likert responses (1-5, strongly disagree to agree) 		
<i>DBT, MET, and Contingency Management</i>						
DePhilippi s, 2018¹⁰⁰	94 VHA SUD clinics implementing contingency management, 74% of sites participated in ≥5 coaching calls over ≥12 months, mean 22 patients	<ul style="list-style-type: none"> • 2,039 patients attended 56% of 49,104 possible sessions • By site, mean 56% of sessions attended (IQR 43-68%) 	<ul style="list-style-type: none"> • 92% of patient urine samples (25,593 of 27,850) tested negative (mean 296.3 samples per site, median 187, range = 3–1684). 	<ul style="list-style-type: none"> • 74% of clinics (n=70) integrated standard program (12 weeks of twice weekly sessions targeting stimulants with an 8-draw cap) • Indices of fidelity: <ul style="list-style-type: none"> - 96% related prizes to abstinence 	<ul style="list-style-type: none"> • Mean 40.6 months that programs were operational (SD = 13.4, median 46.1, range 0.8–54.8). 	

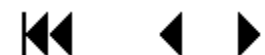


Author, Year; Quality; Setting;	Participants & Strategy; Data sources; Analyses	RE-AIM Outcomes				
		Reach	Effectiveness	Adoption	Implementation	Maintenance
Drapkin, 2016⁷⁹ High VHA	per site (range 1-136) Attendance records, clinic processes, and patient lab results (data collected over 55 months) Descriptive statistics 264 staff in VHA SUD clinics participating in MET training initiative, 81% (n=213) completed all training requirements Surveys ANOVA examining MET knowledge, skills, and use				<ul style="list-style-type: none"> - 81% asked about desired prizes - 67% distributed reminder slips - 54% test results immediately available 	
				<ul style="list-style-type: none"> • MET knowledge increased pre-training to post-workshop and post-consultation, p <0.001 for change over time • MET skills improved pre-training to post-workshop and post-consultation, p <0.001 for change over time • 95% of survey respondents (total n = 221) used MET outside of training context, 53% routinely using MET <ul style="list-style-type: none"> - 73% using with new patients, 43% with consults, 47% for transitions, 84% with those ambivalent to treatments, and 		

Author, Year; Quality; Setting;	Participants & Strategy; Data sources; Analyses	Reach	Effectiveness	RE-AIM Outcomes		
				Adoption	Implementation	Maintenance
<p>Kauth, 2017⁹⁶</p> <p>Moderate VHA</p>	<p>44 mental health providers at 10 VHA medical centers who initiated web-based DBT training, 93% (n = 41) completed training and 74% attended every facilitation call</p> <p>Surveys</p> <p>Descriptive statistics</p>			<p>53% as an adjunct to continuing care</p> <ul style="list-style-type: none"> • 6 weeks post-training, 22 of 26 survey respondents reported conducting a DBT skills group 	<ul style="list-style-type: none"> • 73% providers (73%) had difficulty completing online training during working hours • Total personnel hours = 1,298 <ul style="list-style-type: none"> – 19 hours for facilitation experts – 90 hours for 2 facilitators – 1,189 hours for providers (mean 29 hours each) • Non-personnel costs = \$17,894 <ul style="list-style-type: none"> – \$16,928 for access to web-based modules – \$966 for copies of the training book 	<ul style="list-style-type: none"> • 5 months post-training, 33 of 41 survey respondents reported conducting a DBT group
<p>Landes, 2017⁹⁵</p> <p>Low VHA</p>	<p>Providers and administrators involved in DBT implementation at 8 high- and 8 low-performing sites involved in VHA learning collaborative</p> <p>Semi-structured interviews</p>				<p><i>“... [A]n example of logistical change... was to change a clinician’s job expectations to provide flexibility ...to do the work needed to get a program up and running... [A]n example of making a structural change was to create a DBT program that cut across clinics... [A]n</i></p>	

Author, Year; Quality; Setting;	Participants & Strategy; Data sources; Analyses	RE-AIM Outcomes				
		Reach	Effectiveness	Adoption	Implementation	Maintenance
	Codes derived from PARIHS framework, results grouped topically				<p><i>example of making a local policy change was to change the rules about clinicians calling patients outside of business hours ... which is generally against VA policy.</i></p> <p><i>“ ... [mental health chief] just gave her the flexibility to really take the time to do a lot of this other work, ... knowing we may take a temporary hit for...individual therapy slots. But he was willing to see the big picture and knew this was an important thing for the veterans to have...”</i></p>	

Abbreviations. ACT=Acceptance and Commitment Therapy; ANCOVA=Analysis of covariance; ANOVA=Analysis of variance; BDI-II= Beck Depression Inventory-II; CBT=Cognitive Behavioral Therapy; CP=chronic pain; DBT=Dialectical Behavior Therapy; GAD-7= General Anxiety Disorder-7 scale; IQR=Interquartile range; ISI=Insomnia Severity Index; ITT=Intent to treat; LOCF=Last observation carried forward; MET=Motivational Enhancement Therapy; NRS=Numeric Rating Scale; PARIHS=Promoting Action on Research Implementation in Health Services; PCMH=Primary Care Mental Health Integration; PHQ-9=Patient Health Questionnaire 9-item; SD=Standard deviation; WHOQOL-BREF= World Health Organization Quality of Life brief scale



Appendix Table G4. KQ2 Articles Evaluating Implementation Strategies for Trauma-focused Psychotherapies for PTSD (CPT and PE)

Author, Year; Quality	Participants & Strategy; Data sources; Analyses	RE-AIM Outcomes				
		Reach	Effectiveness	Adoption	Implementation	Maintenance
<i>VHA National Training Programs for PE and CPT</i>						
Crawford, 2016⁷⁷ Moderate	69 patients with PTSD and TBI, received PE from 16 providers who were trainees or trained by VHA national program PCL scores from VHA medical records Multivariate logistic models examining predictors of symptom improvement		<ul style="list-style-type: none"> Providers were classified on PE experience; trainees (n=12); certified in PE (n=2), completed PE training; or PE trainer involved in national dissemination (n=2) Predictors included # PE sessions completed, service connection rating, and provider PE experience; provider experience was associated with higher odds of symptom improvement (OR 2.38 [1.03, 5.51]), defined as PCL score <49 and decrease ≥10 points during treatment 			
Chard, 2012⁸⁷ Low	Mental health providers in CPT training program: n=320 respondents to pre- and immediate post-workshop surveys; n= 325 respondents to		<ul style="list-style-type: none"> Pre-treatment mean PCL score was 64.1 (53.4, 74.8), post-treatment mean PCL was 45.2 (31.1, 59.3), paired t-test significant (p<0.001) 10% of patient had PCL <50 pre- 	<ul style="list-style-type: none"> Comparing pre-and post-workshop mean response scores (Likert scales 1-6 or 1-5) for individual survey items on attitudes to CPT and confidence in CPT skills, authors highlighted positive 	<ul style="list-style-type: none"> From surveys in March 2008, 89% reported that they would like to be using CPT with more patients; top reasons for not using CPT with more patients were "having no or little 	

Author, Year; Quality	Participants & Strategy; Data sources; Analyses	RE-AIM Outcomes				
		Reach	Effectiveness	Adoption	Implementation	Maintenance
	<p>surveys in Mar 2008 (trained in July 2007-Mar 2008), n=237 who also responded to second surveys in Feb 2011; n=541 respondents to surveys in Feb 2011, sent to newly trained providers (Jan 2009-Dec 2010); n=374 Veterans who received CPT from trainees</p> <p>Surveys, response rates 34-49%; patient data from consultations</p> <p>Repeated measures t-tests comparing provider beliefs, symptoms</p>		<p>treatment, 59% had PCL<50 at final session</p> <ul style="list-style-type: none"> • Pre-treatment mean BDI-II score was 30.9 (19.9, 41.9), post-treatment mean BDI-II was 19.7 (9.6, 29.8), paired t-test significant (p<0.001) 	<p>changes: <i>“Following the training, clinicians indicated a significantly higher level of confidence and greater degree of self-efficacy on all aspects of CPT-specific skills and... components of therapy implementation... Clinician attitudes toward the utility and effectiveness of CPT were also significantly higher following the workshop training.”</i> (p-values provided for some individual comparisons, but total # comparisons, mean scores and range NR)</p>	<p><i>room in their schedule”</i> (55%) and <i>“workload is too heavy”</i> (55%); re-survey results in February 2011 had less people reporting these barriers (38% for room in schedule and 37% for heavy workload)</p> <ul style="list-style-type: none"> • From surveys in February 2011 of newly trained providers, 71% reported that they would like to be using CPT with more patients; top reasons for not using CPT with more patients were still room in schedule (36%) and heavy workload (36%) 	
<p>Eftekhari, 2015⁸²</p> <p>Moderate</p>	<p>3,133 Veterans who received PE from mental health providers in PE training program (n=1,105 who completed 4-day workshop and were in consultation phase);</p>	<ul style="list-style-type: none"> • <i>“After adjusting for patient variables, no provider-level variables... significantly predicted [treatment completion]”</i> 	<ul style="list-style-type: none"> • Pre-treatment mean PCL score was 63.5 (SD 11.5), post-treatment mean PCL was 49.4 (SD 17.1) • Pre-treatment mean BDI-II score was 30.1 (SD=11.4), post-treatment mean BDI-II was 21.8 (SD 13.7) 			

Author, Year; Quality	Participants & Strategy; Data sources; Analyses	RE-AIM Outcomes				
		Reach	Effectiveness	Adoption	Implementation	Maintenance
Karlin, 2010⁹¹ Low	Post-workshop surveys of providers; source for patient data NR Mixed-effects models examining provider and patient characteristics associated with treatment completion (≥8 sessions) and changes in symptoms		<ul style="list-style-type: none"> “<i>Profession was the only significant provider-level predictor of clinical outcomes, with social workers achieving slightly greater reductions in PTSD symptom severity [mean difference on PCL of 2.0 points, p<0.001] and depression severity [mean difference on BDI-II of 1.2 points, p<0.01] than psychologists...</i>” 			
	Mental health providers who completed CPT or PE training (numbers NR), 93 patients who received CPT from trainees, 381 patients who received PE from trainees Surveys of providers and VHA facilities, response rate NR; patient records		<ul style="list-style-type: none"> “<i>Initial program evaluation data reveal an overall average decline of approximately 30% (or 20 points) in [PCL] among treatment completers, with similar results for CPT (28%; N=93) and PE (33%; N=381).</i>” 	<ul style="list-style-type: none"> Survey in Feb 2009 “<i>revealed that 96% of facilities were providing CPT or PE; 72% were providing both therapies.</i>” Increases in self-efficacy to deliver PE pre- to post-workshop, and post-workshop to post-consultation: mean score 5.49 (SD 0.94) pre-workshop, mean 6.04 (SD 0.58) post-workshop (p<0.001), and mean 6.44 (SD 0.50), p<0.001 for both 		



Author, Year; Quality	Participants & Strategy; Data sources; Analyses	Reach	Effectiveness	RE-AIM Outcomes		
				Adoption	Implementation	Maintenance
<p>Rosen, 2017⁷⁶</p> <p>High</p>	<p>Repeated measures ANOVA for provider attitudes pre- and post-training</p> <p>566 mental health providers who completed PE training 18 months earlier, had responded to 6 months surveys, and currently treating Veterans with PTSD</p> <p>Surveys, response rate 67%</p> <p>Multivariate negative binomial models examining provider and practice characteristics associated with self-reported use of PE (# of current patient with PTSD who are receiving PE)</p>			<p>comparisons across 3 timepoints</p>		<ul style="list-style-type: none"> • 60.4% of providers using PE at 6 and 18 months; 10.2% started using PE at 18 months (were not at 6 months); 16.7% were using PE at 6 months but stopped at 18 months • Mean 1.93 patients (SD 2.32, range 0-20) being treated with PE per provider; median 12% of patients (IQR 0-44%) being treated with PE, among those with PTSD seen weekly, per provider • Significant predictors of number being treated by PE per provider were: male provider (IRR 1.14 [1.05, 1.24], p<0.001); 6 months beliefs that PE is effective (IRR 1.16 [1.04, 1.31], p<0.05) and they can “generate a steady flow of patient referrals for PE” (IRR

Author, Year; Quality	Participants & Strategy; Data sources; Analyses	RE-AIM Outcomes				
		Reach	Effectiveness	Adoption	Implementation	Maintenance
Ruzek, 2016⁸⁰ High	766 mental health providers who completed PE training (656 who responded to surveys at all timepoints) Surveys, response rates NR GLM examining changes in provider beliefs during training; multi-variate linear models examining predictors of self-reported intention to use PE (Likert			<ul style="list-style-type: none"> Survey items on provider beliefs and attitudes were grouped into 7 subscales: 1) Helping patients improve; 2) Not distressing patients; 3) Positive patient outcomes; 4) Negative patient outcomes; 5) Clinician emotional burden; 6) Clinician time burden; 7) Clinician self-efficacy Changes in provider beliefs both pre- to post-workshop and post-workshop to post-consultation: eg, 		<p>1.35 [1.21, 1.51], p<0.001); working in PTSD specialty clinic (IRR 1.15 [1.06, 1.26], p<0.001); and pre-training use of group therapy (IRR 0.95 [0.87, 1.04], p<0.05)</p> <ul style="list-style-type: none"> Non-significant effects for psychologist vs social worker and other beliefs at 6 months (eg, PE may harm patients and self-efficacy to deliver PE)

Author, Year; Quality	Participants & Strategy; Data sources; Analyses	Reach	Effectiveness	RE-AIM Outcomes		
				Adoption	Implementation	Maintenance
	responses 1-7, definitely not to definitely will)			<p>Helping patients improve increased (mean 6.0 [SD 0.8] pre-workshop, 6.5 [SD 0.6] post-workshop, $p < 0.001$); Not distressing patients decreased (mean 4.7 [SD 1.1] pre-workshop, 4.3 [SD 1.0] post-workshop); and Clinician time burden decreased (mean 2.8 [SD 1.1] post-workshop, 2.3 [SD 1.1] post-consultation, $p < 0.001$)</p> <ul style="list-style-type: none"> • Post-workshop beliefs that significantly predicted intent to use PE post-consultation: Helping patients improve ($B = 0.28$, $p < 0.001$); Positive patient outcomes ($B = 0.28$, $p < 0.001$); and Clinician time burden ($B = -0.14$, $p < 0.001$) • Other 4 beliefs were not significant predictors of intent to use PE • Changes in self-efficacy to promote PE pre- to post-workshop, 		
Ruzek, 2017 ⁷⁸	743 mental health providers who completed PE					<ul style="list-style-type: none"> • 6 months post-training, providers seeing mean 16.5 (SD

Author, Year; Quality	Participants & Strategy; Data sources; Analyses	Reach	Effectiveness	RE-AIM Outcomes		
				Adoption	Implementation	Maintenance
High	<p>training 6 months earlier and currently treating patients with PTSD</p> <p>Surveys, response rate 81%</p> <p>Multivariate Poisson models examining provider characteristics associated with self-reported use of PE at 6 months (# of current patient with PTSD who are receiving PE)</p>			<p>and post-workshop to post-consultation were also significant predictors of number patients receiving PE (eg, B=0.15, p<0.001, for change post-workshop to post-consultation)</p>		<p>15.9) patients with PTSD per week, 77% using PE with ≥1 patient, mean 2.3 (SD 2.9) patients being treated with PE per provider</p> <ul style="list-style-type: none"> • Significant predictors of number patients receiving PE: <ul style="list-style-type: none"> – working in PTSD specialty clinic (B = 0.31, p<0.001) – had more PTSD patients per week before training (B = 0.14 on log scale, p<0.001) – had larger total caseloads before training (B = 0.08 on log scale, p<0.001) – being male (B= 0.22, p<0.001) – some pre-training beliefs (eg, PE helps patients, B=0.14, p<0.01; and self-efficacy to deliver PE, B=0.12, p<0.01)

Other VHA Implementation Studies

Dedert, 2020 ⁷³	778 patients who received treatment	<ul style="list-style-type: none"> • 63% of patients who attended 	<ul style="list-style-type: none"> • For patients who went to preparatory groups,
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Author, Year; Quality	Participants & Strategy; Data sources; Analyses	RE-AIM Outcomes				
		Reach	Effectiveness	Adoption	Implementation	Maintenance
<p>Low</p>	<p>in outpatient PTSD clinic</p> <p>VHA medical record data</p> <p>Mixed models examining effect of preparatory groups on reduction in symptoms</p>	<p>preparatory group (72 out of 94) completed PE or CPT; 69% of patients who did not attend preparatory group (398 out of 575) completed treatment, $p=0.77$ (χ^2 test)</p>	<p>decreases in PCL scores (eg, session #1 mean PCL-5 53.2 [SD 14.6], last session mean 48.2 [SD 14.8]), and PHQ-9 (session #1 mean 16.1 [SD 5.2], last session mean 14.7 [SD 5.5])</p> <ul style="list-style-type: none"> • For patients who did not attend preparatory groups, larger decreases in PCL scores (eg, session #1 mean PCL-5 52.3 [SD 14.4], last session mean 39.8 [SD 18.0]) and PHQ-9 (session #1 mean 15.4 [SD 5.6], last session mean 12.2 [SD 5.8]) • Significant interaction between attending preparatory group and time in predicting PCL and PHQ-9 ($p<0.001$ and $p=0.01$, respectively) 			
<p>Posse-mato, 2018⁷⁵</p> <p>High</p>	<p>279 patients with PTSD in primary care clinic implementing new referral process (CAPE), 374 patients with PTSD</p>	<ul style="list-style-type: none"> • CAPE clinic: 12% of patients were referred to psychotherapy, 5% attended ≥ 1 session of PE or CPT, 1.4% 	<ul style="list-style-type: none"> • For patients in CAPE clinic, no significant changes in PTSD symptoms or quality of life during 3 months with different mental health treatments, but very small numbers 			

Author, Year; Quality	Participants & Strategy; Data sources; Analyses	RE-AIM Outcomes				
		Reach	Effectiveness	Adoption	Implementation	Maintenance
	<p>in clinic not using CAPE</p> <p>VHA medical records</p> <p>χ^2 tests</p>	<p>completed ≥ 9 sessions</p> <ul style="list-style-type: none"> • Non-CAPE clinic: 4% of patients were referred to psychotherapy, 0.8% attended ≥ 1 session of PE or CPT, 0.3% completed ≥ 9 sessions • Significant differences between clinics for referrals to psychotherapy ($p < 0.01$) and attending ≥ 1 session of PE or CPT ($p < 0.01$) 	<p>(eg, only 9 patients who had any PE or CPT)</p>			
<i>Non-VA Community Clinics</i>						
<p>Charney, 2019⁷⁴</p> <p>Low</p>	<p>166 mental health providers in New England, who completed 2-day workshop for PE or CPT 6 months ago, 42 of these also had consultation over 6-month</p> <p>Surveys at 6 and 3 months, response rates 81% and 87%, respectively</p>			<ul style="list-style-type: none"> • At 3 months: <ul style="list-style-type: none"> – 85% of those with consultation were using PE or CPT, 35% were mostly or fully comfortable with protocol – 48% of those who only attended workshops were using PE or CPT, 31% were mostly or fully comfortable • At 6 months: 	<ul style="list-style-type: none"> • Immediately after workshop: <ul style="list-style-type: none"> – 79% reported being mostly or fully prepared to use EBT (3% prior to training) – 71% mostly or fully confident to use EBT (4% prior to training) 	

Author, Year; Quality	Participants & Strategy; Data sources; Analyses	Reach	Effectiveness	RE-AIM Outcomes		
				Adoption	Implementation	Maintenance
	Multivariate logistic model examining association of consultation with self-reported use of PE or CPT at 6 months			<ul style="list-style-type: none"> - 93% of those with consultation were using PE or CPT, 61% were mostly or fully comfortable with protocol - 52% of those who only attended workshops were using PE or CPT, 33% were mostly of fully comfortable with protocol • Consultation associated with use of PE or CPT at 6 months (OR 11.4 [3.2, 40.3], adjusted for PTSD caseload and experience with CBT before training) 		

Abbreviations. ANOVA=Analysis of variance; B=unstandardized coefficient; BDI-II=Beck Depression Inventory-II; CBT=Cognitive Behavioral Therapy; CPT=Cognitive Processing Therapy; EBP=Evidence-Based Psychotherapies; GLM=Generalized linear model; IQR=Interquartile range; OR=odds ratio; PARIS=Promoting Action on Research Implementation in Health Services; PCL=PTSD Checklist; PCP=Primary Care Provider; PE=Prolonged Exposure Therapy; PHQ-9= Patient Health Questionnaire 9 items; PTSD=Posttraumatic Stress Disorder; SD=Standard deviation; VHA=Veterans Health Administration

Appendix Table G5. KQ2 Articles Evaluating Barriers and Facilitators to Implementation of Trauma-focused Psychotherapies for PTSD (CPT and PE)

Author, Year; Quality	Participants; Data sources; Analyses	Outcomes by CFIR Domains		
		Intervention	Outer Setting	Inner Setting
<i>Veterans Health Administration (VHA) Studies</i>				
Doran, 2019⁶¹ Low	8 mental health providers trained in PE and/or CPT Focus groups Consensual Qualitative Research coding system	<p>Intervention Source: “[CPT/PE]...were created and originally tested in civilian populations and then disseminated to the VA... The most prominent issue [in implementation for veterans]... were the number of comorbidities and complexities inherent in the veteran population...”</p> <p>Evidence Strengths & Quality; Relative Advantage; Complexity: “The most commonly identified strengths were the fact that the treatments were evidence-based...[Also] many comments...about the helpfulness of the treatment structure—that they are short-term, direct, and relevant/focused...”</p> <p>“There were somewhat mixed feelings about the effectiveness of the... treatments among clinicians. A major theme... was that [they] are effective in some, but not all, cases... Several</p>	<p>Other Patient Attributes: “There was also general consensus that [CPT/PE] fit and work well for some, but not all, veterans...”</p> <p>“The most prominent issue... were the number of comorbidities and complexities inherent in the veteran population...‘The people we see... they need so much more. The traumas and the PTSD are so much more complex here...’ ”</p>	<p>Culture: “Clinicians felt as if they were pressured to employ an ‘[CPT/PE] or nothing’ approach in their work, as well as pressure to ‘cure’ PTSD in the very short timeframe allotted...: ‘It is pretty much all we offer with no flexibility...the VA culture is like it’s [CPT/PE] or nothing,’...”</p> <p>Readiness for Implementation—Available Resources: “[Providers stated it was] important...that resources were available for implementation and delivery”</p>

Author, Year; Quality	Participants; Data sources; Analyses	Outcomes by CFIR Domains			
		Intervention	Outer Setting	Inner Setting	Characteristics of Individuals
		<p><i>clinicians felt that the treatments were useful but not the only means of resolving PTSD...</i></p> <p>Adaptability: <i>“There was generally unanimous agreement about the two main perceived weaknesses of the treatments—lack of flexibility and not enough time. The protocols were seen as somewhat rigid and overly structured...”</i></p> <p><i>“[A]ll agreed that at least occasional flexibility was useful or necessary at times. Flexibility consisted of altering treatment length...”</i></p>			
<p>Finley, 2015⁷¹</p> <p>Moderate</p>	<p>128 mental health providers from PTSD clinics</p> <p>Surveys, response rate 21%</p> <p>Multivariate linear models examining predictors of self-reported adherence and use of PE, CPT</p>			<p>Culture:</p> <ul style="list-style-type: none"> • Most providers agreed that organizational politics negatively impacted their work (69%), but also that they were treated fairly by superiors (72%) • Half reported that their accomplishments were acknowledged (56%) • organizational politics and being treated fairly by superiors not associated with use or adherence to CPT/PE 	<p>Knowledge & Beliefs:</p> <ul style="list-style-type: none"> • Most providers rated PE was effective (70%), while half rated CPT as effective (56%) • 48% rated supportive care as effective • Those with cognitive-behavioral orientation were more likely to perceive PE as effective (no differences for perception of CPT) • Providing average 4.5 hours of PE per week, 3.9 hours of CPT per week

Author, Year; Quality	Participants; Data sources; Analyses	Intervention	Outcomes by CFIR Domains		
			Outer Setting	Inner Setting	Characteristics of Individuals
<p>Garcia, 2019⁶⁰ & Garcia, 2020¹⁰¹</p> <p>Moderate</p>	<p>222-229 mental health providers in PTSD clinical teams</p> <p>Surveys, response rate 24%</p> <p>Multivariate linear models examining predictors of provider reported patient preference for PE, CPT, or other therapies (Likert 1-5)</p>			<p>Readiness for Implementation—Available Resources:</p> <ul style="list-style-type: none"> • Most reported they had too much clinical work (64%) and administrative work (60%) • Half reported their clinics were understaffed (54%) • Whether clinics sufficiently staffed not associated with use or adherence to CPT/PE 	<ul style="list-style-type: none"> • Perceived effectiveness of PE associated with adherence to manual (p<0.001) and hours of PE per week (p=0.04); cognitive-behavioral orientation not associated with adherence or use • Perceived effectiveness of CPT associated with adherence to manual (p<0.001) and hours of CPT (p<0.001); cognitive-behavioral orientation associated with adherence (p<0.001) but not use (p=0.6) <p>Other Personal Attributes:</p> <ul style="list-style-type: none"> • 68% were psychologists, 32% social workers • 78% with cognitive-behavioral orientation; cognitive behavioral orientation associated with reported patient preference for CPT (p=0.001) and percent time using CPT (p=0.002) but not patient preference for PE or use of PE • 62% had CBT training in graduate school; CBT training not associated with patient preference for or use of CPT or PE

Author, Year; Quality	Participants; Data sources; Analyses	Outcomes by CFIR Domains			
		Intervention	Outer Setting	Inner Setting	Characteristics of Individuals
	responses) [Garcia, 2019] or percent of time using CPT, PE, or other therapies (0-100%) ¹⁰¹				
Hamblen, 2015 ¹⁰² High	38 directors of PTSD outpatient programs Semi-structured interviews Codes defined a priori based on study objectives and interview questions	Relative Advantage: "...[I]t was not uncommon for options other than PE and CPT (such as anger management and psycho-education) to have equal or at least strong secondary emphasis in the menu of clinical services."	Patient Knowledge & Beliefs: "...consensus among directors was that [preparatory] groups are important because they improve readiness for treatment, help veterans make informed decisions about their treatment plans, improve coping skills and symptom management, and decrease the likelihood of no-shows for scheduled EBTs."	Readiness for Implementation— Available Resources: "Structural barriers include scheduling problems related to 90 min treatment sessions for PE, resource barriers including not having enough trained providers..."	Knowledge & Beliefs: "The shift to EBTs was described repeatedly by directors as a 'culture change (where providers) are slowly sort of leaning more toward the idea that folks can move on.'" "Providers believe in the efficacy of PE and CPT" "...attitudinal barriers including a belief that other treatments were more effective."
Hundt, 2015 ⁷⁰ High	23 patients with PTSD who had CPT/PE Interviews Grounded theory analysis		Patient Knowledge & Beliefs: "Several patients mentioned that therapists who provided a thorough orientation to treatment procedures and methods before beginning [CPT/PE] helped allay their fears and increase buy-in. The[y]... wanted to know exactly 'what they were getting in for' before they agreed to participate."	Provider Decision-making: "...several veterans appreciated the opportunity to make choices about which treatment to initiate. One male Persian Gulf veteran in PE described 'They kind of explained it to me . . . gave us more detail about what was going on and it was a choice of group or 1 on 1 . . . [T]hey had a list that had the different options. And I decided to start (PE) first.' This suggests that	Other Personal Attributes: "Other participants noted that providers who provided gentle encouragement and expressed confidence in the patient's ability to handle EBP which helped them feel empowered to try EBP without feeling coerced."

Author, Year; Quality	Participants; Data sources; Analyses	Outcomes by CFIR Domains			
		Intervention	Outer Setting	Inner Setting	Characteristics of Individuals
<p>Hundt, 2018⁶²</p> <p>Moderate</p>	<p>24 Veterans referred for PE or CPT, who declined or did not attend any sessions within 1 year</p> <p>Interviews</p> <p>Grounded theory analysis</p>	<p>Complexity: <i>“Lack of continuity of care...made it difficult for some veterans to engage (n = 5; 21%), because they felt exposed or frustrated by telling their story to multiple different providers [during assessment] ... Veterans’ reactions...ranged from describing the process as disorganized to endorsing suspiciousness about the purpose of multiple assessments. They also described feeling overwhelmed by describing their traumas, and felt the assessment was repetitive and intrusive: ‘The questions were a little painful . . . it seemed like it lasted forever, and...he kept asking me the same questions over and over and over... But then I talked to this other lady, and she had another set of paperwork that I had to fill out, and I felt like it</i></p>	<p><i>“Therapists also increased buy-in by providing two sources of evidence for the success of these treatments: statistics from treatment outcome research and testimonials about a clinician’s own experiences with patient success in [CPT/PE].”</i></p> <p>Patient Needs & Resources: <i>“Eleven veterans (46%) endorsed at least 1 practical barrier. Most common were employment/college (n = 8; 33%) and transportation/distance (n = 4; 17%)...Less commonly mentioned...were physical health barriers and caretaking responsibilities.”</i></p> <p><i>“Lack of flexible scheduling (ie, limited weekend and evening hours) was also mentioned as a barrier to engaging (n = 4; 17%).”</i></p> <p>Patient Knowledge & Beliefs: <i>“A significant proportion of veterans (n = 6; 25%) had no recollection of either PE or CPT ..., despite documentation from medical record review that these patients heard about the options a minimum of 1 to two</i></p>	<p><i>providing options can be an effective way to offer veterans autonomy and increase buy-in to the therapy chosen.”</i></p> <p>Networks & Communications: <i>“Many veterans (n = 12; 50%) were frustrated by bureaucratic inefficiencies. These issues were not specific to the PTSD clinic and, in fact, were more commonly reported as overall problems with VA care. Examples included ‘red tape’ and paperwork, difficulties in enrolling in VA and obtaining a primary care doctor, lack of follow up by providers, difficulty calling providers directly, occasions in which promised consults to mental health were not placed, or patients otherwise ‘fell through the cracks.’ These experiences contributed to feeling that the VA system did not care about them... [leading to] overall rejection of the system...”</i></p>	

Author, Year; Quality	Participants; Data sources; Analyses	Outcomes by CFIR Domains		
		Intervention	Outer Setting	Inner Setting
		<p><i>was almost the same as the first set of paperwork that I had to fill out... I just thought oh my gosh. This is just too much.’”</i></p>	<p><i>times during an assessment ...[or] a group Orientation...Some other veterans reported vague memories of hearing about the therapies but were unable to recall specifics.”</i></p> <p><i>“[Some reported] lack of buy in to the rationale for exposure (n=4; 17%).”</i></p>	<p><i>“Compounding this were difficulties navigating the complex VA system (n = 4; 17%), such that veterans did not know how to seek the care they wanted.”</i></p> <p>Culture: <i>“[S]ome veterans (n = 2; 8%) reported that the reputation of the VA was a barrier. Despite not having negative experiences themselves, the media coverage about recent VA controversies and concerns heard from veteran friends or family members made them concerned about the quality of the care they would receive...”</i></p> <p>Readiness for Implementation—Available Resources: <i>“Some veterans were uncomfortable with the physical environment of the VA or experiences with other veterans they encountered (n = 6; 25%). They noted that that VA [facility] was ‘like a maze,’ sterile, occasionally dirty, and sometimes had windowless offices, which they contrasted to the plush office environments of private therapists. However, the</i></p>

Author, Year; Quality	Participants; Data sources; Analyses	Intervention	Outcomes by CFIR Domains		
			Outer Setting	Inner Setting	Characteristics of Individuals
				<p><i>primary concern...was that the VA was very crowded, which often felt unsafe for veterans with PTSD and associated hypervigilance.”</i></p> <p>Provider Decision-making: <i>“The majority (n=19; 79%) were satisfied with their degree of involvement in their treatment choices (‘They make it a habit of...laying out all of the options for you’...)”</i></p> <p>Patient-Provider Relationships: <i>“...[P]oor alliance with the therapist offering PE or CPT was an issue for some (n=4; 17%): ‘I didn’t feel comfortable with (my therapist)...I just didn’t feel a sense of compassion there...”</i></p> <p><i>“...[Some reported] negative experiences with VA medical providers (n = 5; 21%) [as barriers]...[Some had] negative experiences with mental health providers outside the PTSD clinic [n=6; 25%]...They sometimes felt that providers were rushed, not listening, ‘pushing’ medications on them, or doubting the veteran’s story...</i></p>	

Author, Year; Quality	Participants; Data sources; Analyses	Outcomes by CFIR Domains			
		Intervention	Outer Setting	Inner Setting	Characteristics of Individuals
				<p><i>‘Most of the doctors that I’ve encountered ...just rush you through...’</i></p> <p><i>“[T]he majority (20; 83%) had positive experiences with the therapists they met in the PTSD clinic...18 veterans (75%) had at least 1 positive experience or an overall positive experience with VA mental health...”</i></p>	
<p>Lu, 2016⁶⁸</p> <p>High</p>	<p>63 patients with PTSD, 15 mental health providers</p> <p>VHA medical records</p> <p>Content analysis of session notes</p>		<p>Patient Needs & Resources: <i>“Veterans frequently reported conflicting obligations as barriers to participation... Competing personal commitments included work, school, family responsibilities, and lack of child care. Limited resources may have added to such burdens... Some veterans had multiple other medical appointments. Barriers related to legal issues included required treatments for driving under the influence convictions and being in jail...”</i></p> <p><i>“In some cases, anticipation of redeployment interfered with scheduling and caused difficulty focusing on treatment...”</i></p>	<p>Readiness for Implementation— Available Resources <i>“In some instances...EBP services were not immediately available, or clinician factors caused potential delays in treatment or necessitated transfer of patient care to another clinician.”</i></p> <p>Provider Decision-making: <i>“Providers and veterans had to decide whether PTSD treatment could be integrated with other clinical interventions or whether PTSD treatment needed to be delayed. A provider wrote about an OEF/OIF veteran that he ‘wishes to engage in trauma focused therapy at some point in the future when his</i></p>	<p>Other Personal Attributes: <i>“A few [cases where treatment was] interrupted due to...[clinicians] leaving VA employment, moving and transferring to another [facility], military deployment, or extended leave...”</i></p>

Author, Year; Quality	Participants; Data sources; Analyses	Intervention	Outcomes by CFIR Domains		
			Outer Setting	Inner Setting	Characteristics of Individuals
			<p><i>“Distance and geography affected access as well.”</i></p> <p>Patient Knowledge & Beliefs: <i>“Stigma contributed to privacy concerns. These...were cited by a few...still on active duty [who] did not want details of treatment shared with their commanding officers.”</i></p> <p>Other Patient Attributes: <i>“Veterans often had complex presentations, which may have delayed or prevented participation in ...[CPT/PE], because they required targeted attention to particular issues over a series of visits. Examples... included substance use disorders, psychotic symptoms, anger, emotional dysregulation, chronic suicidal ideation, difficulty coping with other medical comorbidities, and marital or relationship problems.”</i></p>	<p><i>substance abuse and legal problems are stable.’ ”</i></p>	
<p>Osei-Bonsu, 2016⁶⁷</p> <p>High</p>	<p>16 mental health providers</p> <p>Semi-structured interviews</p>		<p>Other Patient Attributes: <i>“Some providers defined ‘readiness’ as a patient’s ‘willingness’ to engage in a treatment like CPT or PE... Providers reported that</i></p>	<p>Provider Decision-making: <i>“Several providers reported using mental processes to make decisions about whether to offer and use CPT and/or PE. They described [this] as</i></p>	

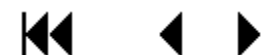
Author, Year; Quality	Participants; Data sources; Analyses	Intervention	Outcomes by CFIR Domains		
			Outer Setting	Inner Setting	Characteristics of Individuals
	Content analysis		<p><i>patients' ability to adequately cope with the emotional experience of engaging in CPT and PE was also a sign of readiness"</i></p> <p><i>"Providers also defined readiness in terms of a patient's safety and stability."</i></p> <p><i>"[P]resence of comorbid conditions was also considered...Several...discussed the impact of comorbid substance abuse. Some expressed hesitation or ruled out using CPT or PE for [these] patients."</i></p>	<p><i>their 'clinical judgment,' a mental 'roulette list,' or 'decision tree.'...</i></p> <p><i>Following...assessment of patient factors, [one] provider indicated that she presents different treatment options that may include CPT and PE and other treatments...For other providers, there seemed to be a pre-treatment decision to offer CPT and PE to nearly every patient."</i></p> <p><i>"[I]nstances when certain patient factors led providers...to not discuss or begin CPT or PE. One provider shared that although a patient's inconsistent attendance was driving a decision to not begin CPT or PE, the importance of consistent attendance was not discussed with the patient due to...'fear that I'd be telling them very explicitly how to avoid having a discussion about [CPT and PE].'...</i></p> <p><i>Another provider shared how a patient's poor mental status led to her decision not to begin CPT: '[One patient] was very suspicious of everything. He's also having a lot of [legal] issues...' [A]lthough [this]</i></p>	

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				<p><i>patient was referred for CPT, she...did not begin CPT."</i></p> <p><i>"A few providers reported... the decision to use CPT and/or PE was a product of a collaborative effort between the provider and the patient... 'I really [want] the decision to be in the hands of the veteran...' Another provider reported that particularly when the patient's safety at home is a concern, a 'joint decision' is made about whether to proceed with CPT or PE. Other[s]...reported that when they introduced CPT or PE, they involved their patient by soliciting the patient's feedback and discussing patient preferences."</i></p>	
<p>Posse-mato, 2018⁷⁵</p> <p>High</p>	<p>9 members of primary care and mental health leadership</p> <p>Focus groups</p> <p>Deductive content analyses</p>	<p>Relative Advantage:</p> <p><i>"That patients don't accept referrals for PTSD treatment is a major problem. PTSD affects physical health and it's frustrating to only be treating part of the problem."</i></p>		<p>Implementation Climate— Tension for Change:</p> <p><i>"So many patients refuse PTSD care, this is a problem."</i></p> <p><i>"There is a need for more appropriate referrals to the PTSD clinic and for patients to come more ready to engage in services."</i></p>	<p>Knowledge & Beliefs:</p> <p><i>"Stressing the evidence base of ... PTSD specialty care will make the PCPs value this more."</i></p>

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Raza, 2015⁶⁹	247 mental health providers who participated in national PE or CPT training program			<p>Readiness for Implementation—Access to Knowledge & Information: <i>“PCPs need to know what is offered in the PTSD clinic.”</i></p> <p><i>“PCP needs scripts on how to get resistant patients to the [mental health] provider.”</i></p> <p><i>“PCPs need to do a better job recognizing PTSD symptoms to know that PTSD is treatable.”</i></p>	<p>Knowledge & Beliefs:</p> <ul style="list-style-type: none"> • 46% preferred PE, 41% had no preference, 13% preferred CPT • “[N]o significant differences for treatment preference [PE vs CPT] across clinician” demographics, discipline, education, theoretical orientation or personal history of trauma
Moderate	Surveys, response rate NR Descriptive statistics			<p>Readiness for Implementation—Access to Knowledge & Information:</p> <ul style="list-style-type: none"> • “[M]ajority reported research was somewhat to very strongly helpful for making treatment decisions...” (n and % NR) • Variability in provider confidence in research by clinical features (eg, somewhat less for PTSD with disgust or acts of perpetration [57-58% agreed], and higher for PTSD with shame or guilt 77-80%) but not by types of trauma (eg, combat vs noncombat, 84 vs 83%) 	

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<p>Ruzek, 2014⁷²</p> <p>Low</p>	<p>1275 mental health providers enrolled in national PE training program</p> <p>Surveys (pre-training only), response rate 96%</p> <p>Multivariate linear models examining associations</p>			<p>Provider Decision-making:</p> <ul style="list-style-type: none"> • More providers selected PE for patients with low literacy (84% vs 1% selecting CPT), low cognitive functioning (70% vs 2% selecting CPT), and moderate-severe TBI (43% vs 4% selecting CPT) • More providers selected CPT for patients with strong guilt (49% vs 13% selecting PE) or shame (45% vs 13% selecting PE) • Most providers selected either PE or CPT for patients with single trauma (64%), mild TBI (62%), or panic attacks (57%) • Most reported they would select treatment based on patient preference (91-92%) 	<p>Knowledge & Beliefs; Self-efficacy; Other Personal Attributes:</p> <ul style="list-style-type: none"> • Survey items on provider beliefs and attitudes were grouped based on PCA into 7 subscales: 1) Helping patients improve; 2) Not distressing patients; 3) Positive patient outcomes; 4) Negative patient outcomes; 5) Clinician emotional burden; 6)

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	between provider characteristics and self-reported beliefs about PE (Likert responses 1-7)				Clinician time burden; 7) Clinician self-efficacy • Provider characteristics included being psychologist vs social worker; CBT orientation (vs some or not); years experience treating PTSD; and clinic type (eg, outpatient PTSD, outpatient general mental health) • In separate models, most provider characteristics associated with statistically significant ($p < 0.05$), small effects ($\beta = -0.13$ to 0.23) in predicting different provider beliefs about PE, with exception of Negative patient outcomes (none of the characteristics were associated with this belief)
Sayer, 2017⁶⁵ Moderate	96 mental health providers on outpatient PTSD teams (selected based on “reach”— defined as % of psychotherapy patients who had PT or CPT) Semi-structured interviews	Evidence Strength & Quality, Relative Advantage: <i>“Staff in nearly all of the high reach teams described CPT and PE as being beneficial for the majority of patients with PTSD. Moreover, staff saw these treatments as more effective than other psychotherapies.”</i> <i>“Staff at all low reach sites and 1 medium react site reported that although CPT and PE were credible, they did</i>	External Policy & Incentives: <i>“[S]taff on all teams believed that CPT and PE would continue to be a treatment option for patients with PTSD because VA policy requires their availability... [S]taff noted the importance of VA’s continued commitment to training to ensure sustainability.”</i> Patient Knowledge & Beliefs:	Networks & Communication: <i>“All high reach and 1 medium reach site reported having CPT and PE peer consultation groups in which clinical issues were discussed ... [S]taff had protected time to attend weekly ... groups. These... were seen as a valuable resource...”</i> Culture; Implementation Climate—Compatibility, Relative Priority:	Knowledge & Beliefs: <i>“[S]taff in all high and medium reach teams reported commitment to time-limited [EBP]... Most... were trained in CPT and PE and new staff were required to know or learn them. As [a] mental health chief explained: ‘We have enthusiasm and we engender that in the staff that we hire... I wouldn’t think about hiring someone... that wasn’t willing to devote a lot of time to PE and CPT.’ ”</i>



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Rapid Assessment Process	<p><i>not live up to expectations... [They] described the clinical benefits as 'partial' or 'not universal.'</i> “</p> <p>Adaptability: “[C]linicians described trying to follow the CPT and PE manuals, with some flexing to address patient-specific needs... Some staff believed that more research is needed to determine how to adapt the treatments for different types of patients; others believed that lack of adaptability contributed to drop out.”</p>	<p>“All high reach teams and 1 medium reach team had developed screening procedures... [These] included specifying patient interest in a trauma-focused treatment as a referral criterion and/or requiring patients to undergo an orientation session in which clinic services, including CPT and PE, were described. Thus, patients entering these clinics were likely to be receptive...: ‘... they go through an orientation group, so they are well versed in what we do here and what we have to offer of options.’ ”</p> <p>“[Some] high reach teams provided a four-session psychoeducational group prior to beginning CPT or PE. One medium reach site used to offer a 10-week psycho-educational group before CPT or PE, but had transferred this group to their general mental health clinic. That team, however, reported difficulty getting patients to agree to begin CPT or PE right away, so most... completed symptom management</p>	<p>“All high reach teams identified as...clinics with the primary mission being to deliver PE and CPT...: ‘It’s always been made clear the kind of program this is, we are evidence-based, we are cognitive-behavioral based. If that does not fit with your orientation, that’s OK but we’re not going to change, that’s what you are going to be doing if you come in here...’ ”</p> <p>—Goals & Feedback: “Most high reach teams designed and implemented systems and clinic databases to monitor both treatment process and patient outcomes. Managers... described using outcome data to demonstrate the value of CPT and PE to medical center leadership to maintain support for the resources dedicated to their clinic...: ‘We have a specific database...where we track all of our outcomes, pre, mid, and post treatment, assessments, self-report. We also measure drop out, non-engagement, referrals to other programming so that we can</p>	<p>“Staff in high and medium reach teams believed that use of CPT and PE benefitted the clinic as well as patients... [CPT/PE] helps with staff recruitment because trainees from different disciplines want to learn to deliver them. CPT and PE were described as increasing morale and reducing burnout because clinicians see their patients improve.”</p>	

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			<p><i>group[s] before engaging in CPT or PE.”</i></p> <p><i>“Some staff described how [CPT/PE] represented a culture change... VA patients with long histories of receiving open-ended supportive psychotherapy and their therapists may not find an episode-of-care model or the possibility of recovery credible.”</i></p> <p>General Practice Climate & Patterns: <i>“[S]taff at most low reach sites and 1 high reach site believed [CPT/PE] did not fit with the emphasis on psycho-dynamic psychotherapies within the larger community.”</i></p>	<p><i>really be accountable to our outcomes...’ ”</i></p> <p>Readiness for Implementation— Leadership Engagement: <i>“All high and medium reach teams reported that their team leader was highly engaged in sustained implementation of CPT and PE. The team leader had clinical expertise in CPT and/or PE and was described as a champion.”</i></p> <p>—Available Resources: <i>“Most high reach teams designed and implemented systems and clinic databases to monitor both treatment process and patient outcomes.</i></p> <p><i>“All high reach and 1 medium reach site reported having CPT and PE peer consultation groups in which clinical issues were discussed ...[S]taff had protected time to attend weekly ...groups. These...were seen as a valuable resource...”</i></p> <p><i>“Nearly all teams noted that therapists need to be able to manage their own schedules</i></p>	

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<p>Song, 2020⁵⁸</p> <p>Moderate</p>	<p>225 mental health providers in PTSD clinical teams</p> <p>Surveys</p> <p>Mediation analyses</p>			<p><i>to effectively deliver [CPT/PE]. Changes in scheduling procedures were made at 1 low reach site as part of an effort to increase reach...: ‘That was 1 of the big changes...and probably the most important 1 was... providers... could schedule as they wanted.’ ”</i></p>	<p>Other Personal Attributes:</p> <ul style="list-style-type: none"> Graduate school training in structured CBT was not associated with provider use of PT or CPT (measured as percent of clinical time, exclusion options—CPT individual; CPT group; CPT cognitive only; PE; or other psychotherapy)
<p><i>US Community Clinics & Health Systems</i></p>					
<p>Finley, 2018⁶³</p> <p>Moderate</p>	<p>463 mental health providers in Texas, some trained in CPT by state program</p> <p>Surveys, response rate 15%</p> <p>Descriptive statistics for perceived</p>	<p>External Policies & Incentives:</p> <ul style="list-style-type: none"> Most reported ability to receive reimbursement for PTSD care (66%) 	<p>Implementation Climate—Compatibility:</p> <ul style="list-style-type: none"> Most reported PTSD therapy “<i>Fits well with the way I like to work</i>” (64%), and ease of incorporating PTSD care into work (70%) Few noted it “<i>would be complicated in my practice</i>” (18%) Perceived barriers (as a whole) were not associated with odds of use of CPT or 	<p>Knowledge & Belief:</p> <ul style="list-style-type: none"> Most psychologists were aware of any clinical practice guidelines for PTSD (61%), 37% of masters-level providers did Few aware of VHA guidelines for PTSD (25% of psychologists, 12% of masters-level providers) 	

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	barriers, training, and use of PE and CPT; multivariate logistic models examining provider characteristics associated with use of PE or CPT			PE, overall low barriers reported	<p>Self-efficacy:</p> <ul style="list-style-type: none"> 65% of psychologists reported confidence in PTSD assessment, vs 48% of masters-level providers Confidence in ability to use CPT associated with self-reported use of CPT (OR 5.7 [2.4, 13.7]), confidence in PE associated with use of PE (OR 9.1 [2.8, 29.8]) <p>Other Personal Attributes:</p> <ul style="list-style-type: none"> 78% of psychologists were trained in CBT, 23% in CPT, 16% in PE 32% of masters-level providers were trained in CBT, 25% in CPT, 8% in PE Prior training in CPT associated with use of CPT (OR 34.0 [13.0, 89.0]), training in PE associated with use of PE (OR 22.7 [6.7, 76.5])
<p>Richards, 2017⁶⁶</p> <p>Low</p>	<p>352 mental health providers in New England</p> <p>Surveys, response rate NR</p>			<p>Readiness for Implementation—Available Resources:</p> <ul style="list-style-type: none"> Among providers interested in training (87%), top reported barriers to training were time away from work (56%), and high cost of training (52%) 	<p>Other Personal Attributes:</p> <ul style="list-style-type: none"> 16% were trained in PE, 51% among these reported use of PE 28% were trained in CPT, 72% among these reported use of CPT Having received supervision during training associated



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	Descriptive statistics for perceived barriers to training; multivariate logistic models examining predictors of use of PE and/or CPT				with higher odds of use (OR 10.9 [3.4, 35.4]), but results NR for other predictors (eg, years of practice)

Abbreviations. β =coefficient in analytic models; CBT=Cognitive Behavioral Therapy; CPT=Cognitive Processing Therapy; EBP=Evidence-Based Psychotherapies; GP=General Practitioner; NR=Not Reported; PCA=Principal components analysis; PCP=Primary care provider; PARIS=Promoting Action on Research Implementation in Health Services; PCL=PTSD Checklist; PE=Prolonged Exposure Therapy; PTSD=Posttraumatic Stress Disorder; VA=Department of Veterans Affairs