

Appendix A: Search strategy

Original search: April 2019

Date of search: 06.04.19	
Database (via Ovid)	Records retrieved
Ovid MEDLINE(R) and Epub Ahead of Print, In-Process & Other Non-Indexed Citations and Daily 1946 to April 05, 2019	1258
Embase Classic+Embase 1947 to 2019 April 05	1301
PsycINFO 1806 to April Week 1 2019	441
HMIC Health Management Information Consortium 1979 to January 2019	3

MEDLINE; EMBASE; PSYCHINFO, HMIC (via Ovid)

1. randomized controlled trial.pt.
2. controlled clinical trial.pt.
3. randomized.ab.
4. placebo.ab.
5. clinical trials as topic.sh.
6. randomly.ab.
7. trial.ti.
8. 1 or 2 or 3 or 4 or 5 or 6 or 7
9. ((systematic adj review*) or meta analy* or metaanaly*).tw.
10. meta-analysis as topic/ or Meta-Analysis.pt.
11. 9 or 10
12. Epidemiologic studies/ or exp case control studies/ or exp cohort studies/ or Cross-sectional studies/
13. Case control.tw.
14. (cohort adj (study or studies)).tw.
15. Cohort analy\$.tw.
16. (observational adj (study or studies)).tw.
17. 12 or 13 or 14 or 15 or 16
18. 8 or 11 or 17
19. comment/ or editorial/ or letter/
20. 18 not 19
21. exp Ethnic Groups/
22. exp Minority Groups/
23. ("BME" or "BAME" or "black asian and minority ethnic" or "black and minority ethnic" or "ethnic minorit*" or "asian minorit*").tw.
24. Asian Continental Ancestry Group/ or African Continental Ancestry Group/ or European Continental Ancestry Group/ or African Americans/ or Asian Americans/ or Hispanic Americans/
25. gypsies/
26. Roma/
27. (traveller\$1 or Gypsies or Gypsy or Gipsy or Gipsies or Romany or Romanies or Romani or Romanis or Rromani or Rromanis or Roma).ti,ab.
28. "Transients and Migrants"/
29. "Emigration and Immigration"/
30. "Emigrants and Immigrants"/
31. refugees/
32. (immigrant\$ or migrant\$ or asylum or refugee\$ or undocumented).ti,ab.
33. (displaced and (people or person\$1)).ti,ab.
34. (born adj2 overseas).ti,ab.
35. exp Psychotherapy/

Appendices

36. ("mental health care" or "mental healthcare" or "mental health intervention*" or "mental health treatment" or "mental health support" or "psychological therap*" or "psychological intervention" or "psychology intervention" or "psychological treatment" or "psychology support" or "psychological support").tw.
37. 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34
38. 35 or 36
39. 20 and 37 and 38
40. limit 39 to (humans and yr="1965 -Current")

Date of search: 07.04.19	
Database (via ProQuest)	Records retrieved
Assia 1 January 1965 to 6 April 2019	1083

ASSIA (via Proquest)

(MAINSUBJECT.EXACT.EXPLODE("Minority groups") OR MAINSUBJECT.EXACT.EXPLODE("Ethnic groups") OR TI,AB("Central Asian people") OR TI,AB("Asian Australian people") OR TI,AB("South East Asian American people") OR TI,AB("Asian American people") OR TI,AB("South East Asian people") OR TI,AB("East Asian people") OR TI,AB("Asian communities") OR TI,AB("Ugandan Asian people") OR TI,AB("Asian people") OR TI,AB("Asian-Pacific American people") OR TI,AB("South Asian people") OR TI,AB("Australasian people") OR TI,AB("Eurasian people") OR TI,AB("South Asian communities") OR TI,AB("Black Asian American people") OR TI,AB("Gypsies") OR TI,AB("Immigrants") OR TI,AB("Migrants") OR TI,AB("Emigrants") OR TI,AB("Refugees") OR TI,AB("Asylum") OR TI,AB("Immigration") OR ti,ab("BAME" OR "BME" OR "black asian and minority ethnic" OR "black and minority ethnic" OR ethnic minorit* OR asian minorit* OR minorit* OR travel?er*1 OR Gypsies OR Gypsy OR Gipsies OR Romany OR Romani OR Romanis OR Rromanis OR Roma OR immigrant*1 OR migrant*1 OR refugee*1 OR undocumented OR displaced people OR displaced person*1 OR born overseas)) AND (MAINSUBJECT.EXACT.EXPLODE("Psychotherapy") OR ti,ab(psychotherapy OR cognitive behavior?al therapy OR "CBT" OR mental health care OR mental health OR mental healthcare OR mental health intervention OR mental health treatment OR mental health support OR psychological therap* OR psychological intervention OR psychology intervention OR psychological treatment OR psychology support OR psychological support)) AND (TI,AB("Meta-analysis") OR TI,AB("Cohort analysis") OR TI,AB("Cross-sectional studies") OR TI,AB("Observational research") OR TI,AB("Randomized controlled trials") OR TI,AB("Systematic reviews") OR ti,ab(systematic NEAR/4 review*) OR meta analy* OR metaanaly* OR randomized controlled trial OR controlled clinical trial OR randomized OR placebo OR randomly OR trial OR Case control OR (cohort NEAR/4 (study OR studies)) OR Cohort analy OR (Follow up NEAR/4 (study OR studies)) OR (observational NEAR/4 (study OR studies))) AND PEER(yes) AND pd(19650101-20190406)

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Date of search: 07.04.19	
Database (via EBSCO)	Records retrieved
CINAHL	721

CINAHL

#	Query	Limiters/Expanders	Last Run Via	Results
S1	MH (MH "Minority Groups+") OR (MH "Ethnic Groups+")	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus	133,338
S2	MW ethnic minorities OR MW (black, asian and minority ethnic (bame)) OR MW (bme or black minority ethnic or ethnic or african or caribbean) OR MW asian american OR MW (african americans or black americans or blacks) OR MW (hispanic or latino or latina or mexican or central american or south american or hispanics or latin) OR MW (gypsy or roma or traveller) OR MW (migrants or immigrants or asylum seekers or refugees) OR MW (emigration or immigration or migration) OR MW emigrants OR MW displaced persons	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus	109,594
S3	(MH psychotherapy+)	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus	163,340
S4	MW "psychotherapy" OR "cognitive behavio#ral therapy" OR "CBT" OR "mental health care" OR "mental health" OR "mental healthcare" OR "mental health intervention" OR "mental health treatment" OR "mental health support" OR "psychological therap?" OR "psychological intervention" OR "psychology intervention" OR "psychological treatment" OR "psychology support" OR "psychological support"	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus	149,052
S5	MW (randomized controlled trials or rtc or randomised control trials) OR MW (meta-analysis or systematic review) OR MW cohort design study OR MW observational research	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus	163,891
S6	MW "systematic review*" OR "meta analy*" OR "metaanaly*" OR "randomized controlled trial" OR "controlled clinical trial" OR "randomized" OR "placebo" OR "randomly" OR "trial" OR "Case control" OR "cohort stud*" OR "Cohort analy*"	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus	235,668

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	OR "Follow up stud*" OR "observational stud*"			
S7	S1 OR S2	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus	157,262
S8	S3 OR S4	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus	271,573
S9	S5 OR S6	Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus	235,668
S10	S7 AND S8 AND S9	Limiters - Published Date: 19650101-20190431; Human Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - CINAHL Plus	721

Date of search: 29.04.19	
Database (via Wiley)	Records retrieved
CENTRAL	877

CENTRAL (via Wiley)

- ID Search
- #1 MeSH descriptor: [Ethnic Groups] explode all trees
- #2 MeSH descriptor: [Minority Groups] explode all trees
- #3 MeSH descriptor: [Asian Continental Ancestry Group] this term only
- #4 MeSH descriptor: [African Continental Ancestry Group] this term only
- #5 MeSH descriptor: [European Continental Ancestry Group] this term only
- #6 MeSH descriptor: [African Americans] this term only
- #7 MeSH descriptor: [Asian Americans] this term only
- #8 MeSH descriptor: [Hispanic Americans] this term only
- #9 MeSH descriptor: [Roma] this term only
- #10 MeSH descriptor: [Transients and Migrants] this term only
- #11 MeSH descriptor: [Emigration and Immigration] this term only
- #12 MeSH descriptor: [Emigrants and Immigrants] this term only
- #13 MeSH descriptor: [Refugees] this term only
- #14 ("BAME"):ti,ab,kw OR ("BME"):ti,ab,kw OR ("black asian and minority ethnic"):ti,ab,kw OR ("black and minority ethnic"):ti,ab,kw OR ("minority group"):ti,ab,kw (Word variations have been searched) with Publication Year from 1965 to 2019, with Cochrane Library publication date Between Jan 1965 and Apr 2019, in Trials
- #15 ("traveller"):ti,ab,kw OR ("travellers"):ti,ab,kw OR ("Gypsies"):ti,ab,kw OR ("Gypsy"):ti,ab,kw OR ("Romany"):ti,ab,kw (Word variations have been searched) with Publication Year from 1965 to 2019, with Cochrane Library publication date Between Jan 1965 and Apr 2019, in Trials
- #16 ("displaced people"):ti,ab,kw OR ("displaced person"):ti,ab,kw (Word variations have been searched) with Publication Year from 1965 to 2019, with Cochrane Library publication date Between Jan 1965 and Apr 2019, in Trials
- #17 ("refugees"):ti,ab,kw OR ("asylum"):ti,ab,kw OR ("undocumented"):ti,ab,kw OR ("immigrant"):ti,ab,kw OR ("migrant"):ti,ab,kw (Word variations have been searched) with Publication Year from 1965 to 2019, with Cochrane Library publication date Between Jan 1965 and Apr 2019, in Trials
- #18 MeSH descriptor: [Psychotherapy] explode all trees
- #19 ("mental health care"):ti,ab,kw OR ("mental healthcare"):ti,ab,kw OR ("mental health intervention"):ti,ab,kw OR ("mental health treatment"):ti,ab,kw OR ("mental health support"):ti,ab,kw (Word variations have been searched) with Publication Year from 1965 to 2019, with Cochrane Library publication date Between Jan 1965 and Apr 2019, in Trials
- #20 ("psychology intervention"):ti,ab,kw OR ("psychological treatment"):ti,ab,kw OR ("psychological therapies"):ti,ab,kw OR ("psychology support"):ti,ab,kw OR ("psychological support"):ti,ab,kw (Word variations have been searched) with Publication Year from 1965 to 2019, with Cochrane Library publication date Between Jan 1965 and Apr 2019, in Trials
- #21 ("psychological therapy"):ti,ab,kw OR ("psychological therapies"):ti,ab,kw OR ("psychological intervention"):ti,ab,kw OR ("psychology intervention"):ti,ab,kw OR ("psychological treatment"):ti,ab,kw (Word variations have been searched) with Publication Year from 1965 to 2019, with Cochrane Library publication date Between Jan 1965 and Apr 2019, in Trials
- #22 #1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 #OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 with Publication Year from 1965 to 2019, with Cochrane Library publication date Between Jan 1965 and Apr 2019, in Trials
- #23 #18 OR #19 OR #20 OR #21 with Publication Year from 1965 to 2019, with Cochrane Library publication date Between Jan 1965 and Apr 2019, in Trials
- #24 #22 AND #23 with Publication Year from 1965 to 2019, with Cochrane Library publication date Between Jan 1965 and Apr 2019, in Trials

Appendices

Date of search: 29.04.20	
Database (via Wiley)	Records retrieved
CDSR	6

CDSR (via Wiley)

ID	Search
#1	MeSH descriptor: [Ethnic Groups] explode all trees
#2	MeSH descriptor: [Minority Groups] explode all trees
#3	MeSH descriptor: [Asian Continental Ancestry Group] this term only
#4	MeSH descriptor: [African Continental Ancestry Group] this term only
#5	MeSH descriptor: [European Continental Ancestry Group] this term only
#6	MeSH descriptor: [African Americans] this term only
#7	MeSH descriptor: [Asian Americans] this term only
#8	MeSH descriptor: [Hispanic Americans] explode all trees
#9	MeSH descriptor: [Roma] this term only
#10	MeSH descriptor: [Transients and Migrants] this term only
#11	MeSH descriptor: [Emigration and Immigration] this term only
#12	MeSH descriptor: [Emigrants and Immigrants] explode all trees
#13	MeSH descriptor: [Refugees] explode all trees
#14	("BAME"):ti,ab,kw OR ("BME"):ti,ab,kw OR ("black asian and minority ethnic"):ti,ab,kw OR ("black and minority ethnic"):ti,ab,kw OR ("minority group"):ti,ab,kw with Cochrane Library publication date Between Jan 1965 and Apr 2019, in Cochrane Reviews (Word variations have been searched)
#15	("traveller"):ti,ab,kw OR ("travellers"):ti,ab,kw OR ("Gypsies"):ti,ab,kw OR ("Gypsy"):ti,ab,kw OR ("Romany"):ti,ab,kw with Cochrane Library publication date Between Jan 1965 and Apr 2019, in Cochrane Reviews (Word variations have been searched)
#16	("displaced people"):ti,ab,kw OR ("displaced person"):ti,ab,kw with Cochrane Library publication date Between Jan 1965 and Apr 2019, in Cochrane Reviews (Word variations have been searched)
#17	("refugees"):ti,ab,kw OR ("asylum"):ti,ab,kw OR ("undocumented"):ti,ab,kw OR ("immigrant"):ti,ab,kw OR ("migrant"):ti,ab,kw with Cochrane Library publication date Between Jan 1965 and Apr 2019, in Cochrane Reviews (Word variations have been searched)
#18	MeSH descriptor: [Psychotherapy] explode all trees
#19	("mental health care"):ti,ab,kw OR ("mental healthcare"):ti,ab,kw OR ("mental health intervention"):ti,ab,kw OR ("mental health treatment"):ti,ab,kw OR ("mental health support"):ti,ab,kw with Cochrane Library publication date Between Jan 1965 and Apr 2019, in Cochrane Reviews (Word variations have been searched)
#20	("psychology intervention"):ti,ab,kw OR ("psychological treatment"):ti,ab,kw OR ("psychological therapies"):ti,ab,kw OR ("psychology support"):ti,ab,kw OR ("psychological support"):ti,ab,kw with Cochrane Library publication date Between Jan 1965 and Apr 2019, in Cochrane Reviews (Word variations have been searched)
#21	("psychological therapy"):ti,ab,kw OR ("psychological therapies"):ti,ab,kw OR ("psychological intervention"):ti,ab,kw OR ("psychology intervention"):ti,ab,kw OR ("psychological treatment"):ti,ab,kw with Cochrane Library publication date Between Jan 1965 and Apr 2019, in Cochrane Reviews (Word variations have been searched)
#22	#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 #OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 with Cochrane Library publication date Between Jan 1965 and Apr 2019, in Cochrane Reviews (Word variations have been searched)
#23	#18 OR #19 OR #20 OR #21 with Cochrane Library publication date Between Jan 1965 and Apr 2019, in Cochrane Reviews (Word variations have been searched)
#24	#22 AND #23 with Cochrane Library publication date Between Jan 1965 and Apr 2019, in Cochrane Reviews (Word variations have been searched)

Update search results: June 2020

Date of search: 30.06.20	
Database (via Ovid)	Records retrieved
Ovid MEDLINE(R) and Epub Ahead of Print, In-Process & Other Non-Indexed Citations and Daily 1946 to June 29, 2020	112
Embase Classic+Embase 1947 to 2020 June 29	305
PsycINFO 1806 to June Week 4 2020	46
HMIC Health Management Information Consortium 1979 to May 2020	5

Date of search: 30.06.20	
Database (via ProQuest)	Records retrieved
Assia 7 April 2019 to 30 June 2020	86

Date of search: 30.06.20	
Database (via EBSCO)	Records retrieved
CINAHL	140

Date of search: 30.06.20	
Database (via Wiley)	Records retrieved
CENTRAL	8

Date of search: 30.06.20	
Database (via Wiley)	Records retrieved
CDSR	1

Update search results: December 2020

Date of search: 11.12.20	
Database (via Ovid)	Records retrieved
Ovid MEDLINE(R) and Epub Ahead of Print, In-Process & Other Non-Indexed Citations and Daily 1946 to December 10 2020	45
Embase Classic+Embase 1947 to 2020 December 10	206
PsycINFO 1806 to November Week 5 2020	32
HMIC Health Management Information Consortium 1979 to November 2020	0

Date of search: 11.12.20	
Database (via ProQuest)	Records retrieved
Assia 30 June 2020 to 11 December 2020	47

Date of search: 11.12.20	
Database (via EBSCO)	Records retrieved
CINAHL	42

Date of search: 11.12.20	
Database (via Wiley)	Records retrieved
CENTRAL	0

Date of search: 11.12.20	
Database (via Wiley)	Records retrieved
CDSR	0

Appendix B: Supplementary detail of typology development

Included here is a previous iteration of the conceptual typology, where different terms were used to classify adaptations. Detail on the evolution of terms is provided, including reasons why these were re-organised and modified by the authors:

Table B.1: A previous iteration of the conceptual typology

	<i>Culturally-specific</i>		<i>Culturally-informed</i>
	Therapeutic delivery	Content	Organisational
Common factors	Therapeutic relationship Alliance; Empathy; Agreement of treatment goals; Expectations of treatment; Collection of patient feedback	Acceptability and appropriateness Treatment structure; Education; Preparation of the patient	
	Training for provider/facilitator Staff or professional; Layperson or community member	Cultural Culturally relevant terms of reference; Modified materials/resources; Culturally-sensitive language; Emphasis on cultural norms/expectations; ‘Culturally sensitive’, ‘culturally congruent’, ‘cultural emphasis’, ‘cultural attunement’, culturally-responsive’, ‘culturally tailored’	Location of treatment Care provided at home; Care provided in the community; Care provided in non-healthcare setting
Specific adaptation types	Language translation (delivery) Interpreter or bilingual provider	Language translation (content) Translated materials/resources	Medium used to provide treatment Face to face Telephone Online or mobile app Group treatment
	Provider of treatment Ethnic matching; Layperson; Community leader (e.g. religious leader)	Religious/faith-based adaptations Modified materials or resources; Use of religious texts, doctrine or guidance; Presence or support from a religious leader or official	Time or length of intervention Extended or shortened intervention or session length; Time of day Method of access Rapid or accelerated access; Access route (e.g. via alternative to standard route)

Treatment-specific adaptations (to interventions provided) were originally coined ‘culturally specific’ to capture that both content and therapist (facilitator/provider) adaptations. The conceptualisation behind this was that treatment-specific adaptations were more likely to be directly influenced by an appeal to the target group’s culture. Upon peer review, it became clear that the term was confusing and did not accurately reflect our intentions, nor the adaptations to which we were intending to refer.

- Therapist-related adaptations were originally termed ‘therapeutic delivery’ adaptations. Both of these terms would be acceptable, but we wanted to make it clear that these adaptations were as a

direct result of the therapist/provider/facilitator, including both their demographics, competence, training and behaviour.

- Content-related adaptations – for consistency and clarity the ‘-related’ term was added inline with the therapist-related term above.
- Organisation-specific adaptations (those at the organisation or service level) were initially coined ‘culturally-informed’ to reflect the fact that adaptations included here refer to those that are informed by cultural knowledge and its interface with service delivery and design, yet are not always made as a direct response to specific cultural needs. As with the ‘culturally-specific’ term, it became clear upon peer review that the term was confusing and did not accurately reflect our intentions.
- ‘Acceptability and appropriateness’ was re-termed ‘acceptability and suitability’ as it was thought to better distinguish between what is meant by these two terms.
- ‘Cultural’ was expanded to refer to explicit cultural adaptations in order to clarify the types of adaptations included in this category. This is further elaborated in the review, with examples.

Appendix C: Study characteristics – primary studies

Table C.1: study characteristics of primary studies (K=88)

Appendices

Study ID	Study design	Target population	Adapted intervention	EBT upon which intervention is based/adapted from	Target condition(s)	Duration of treatment	Primary outcome measure(s)	RoB judgement
(Acarturk et al., 2015)	RCT	Refugees/Asylum seekers	Eye movement desensitization reprocessing (EMDR)	Eye movement desensitization reprocessing (EMDR)	PTSD; Depression	7 weeks	IES-R	Unclear
(Acarturk et al., 2016)	RCT	Refugees/Asylum seekers	Eye movement desensitization reprocessing (EMDR)	Eye movement desensitization reprocessing (EMDR)	PTSD; Depression	NR	HTQ	Low risk
(Afuwape et al., 2010)	RCT	Black or mixed race	Cares of Life: rapid access	CBT; brief solution-focussed therapy	Anxiety; Depression	NR	GHQ-28	--
(Alavi & Hirji, 2020)	RCT	Middle Eastern	eCBT (Microsoft PowerPoint)	CBT	Anxiety	12 weeks	BAI	--
(Alegria et al., 2014)	RCT	Latinx	Engagement and Counselling for Latinos (ECLA; telephone or face to face)	CBT; care management	Depression	6-8 sessions	PHQ-9	--
(Alegría et al., 2019)	RCT	Latinx	Integrated Intervention for Dual Problems and Early Action programme (IIDEA) CBT	CBT; Motivational Interviewing; Mindfulness	Mental health NOS	10-12 sessions	HSC-20	--
(An, Wang, Sun, & Zhang, 2020)	RCT	East Asian	Modified CBT (group)	CBT	Anxiety	8 weeks	PTA scale	Low risk
(Ashing & Rosales, 2014)	RCT	Latinx	Telephonic intervention + survivorship booklet	CBT; Health-related quality of life intervention	Depression	8 sessions	CES-D	--
(Bedoya et al., 2014)	RCT	Latinx	Culturally focussed psychiatric consultation (CFP)	CBT; Psychoeducation (multicomponent intervention)	Depression	2 sessions	QIDS-SR	--

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(Beeber et al., 2010)	RCT	Latinx	Advanced practice nurse-delivered, culturally tailored, in-home psychotherapy intervention	IPT	Depression	16 contacts/sessions	CES-D	Low risk
(Bernardi, Dahiya, & Jobson, 2019)	Pre-post	Refugees/asylum seekers	Modified cognitive processing therapy	Cognitive processing therapy	PTSD	12 sessions	PCL-5	--
(Bernstein et al., 2016)	Non-randomised quasi experimental	East Asian	Enhanced Logo-Autobiography	Logotherapy	Depression	8 weeks	CES-D (Korean version)	--
(Bolton et al., 2003)	Cluster RCT	Black or mixed race	Group IPT	IPT	Depression	16 weeks	HSCL (depression subscale)	--
(Bonilla-Escobar et al., 2018)	RCT	Black or mixed race	Common elements treatment approach (CETA)	CBT	Depression; PTSS; Anxiety	12-14 sessions	TMHS	--
(Bradley et al., 2006)	RCT	East Asian	Multiple family group therapy	CBT	Schizophrenia	12 months (26 sessions)	BPRS	Low risk
(Cachelin et al., 2018)	RCT	Latinx	CBT-guided self help	CBT (CBT-guided self-help)	Eating disorder: binge eating	12 weeks	EDE (objective binge-eating episodes)	Low risk
(Cajanding, 2016)	RCT	East Asian	Nurse-led CBT	CBT	Depressive symptoms	12 weeks	CDS	Low risk
(Camacho et al., 2015)	Pre-post	Latinx	Problem solving therapy using the IMPACT model	CBT - Problem solving therapy	Depressive symptoms	NR	PHQ-9	--
(Carter, Sbrocco, Gore, Marin, & Lewis, 2003)	RCT	Black or mixed race	Group Panic Control Therapy	CBT	Panic disorder	11 sessions	CSR (panic)	Low risk
(Chien, Leung, & Sk Chu, 2012)	RCT	East Asian	Nurse-led psychoeducation	Psychoeducation	First-episode mental illness	3-6 weeks (6 sessions)	BPRS	--

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(Choi et al., 2012)	RCT	East Asian	Internet CBT (Brighten your mood programme)	CBT (internet CBT)	Depression	8 weeks	BDI (Chinese version)	Unclear
(Choy & Lou, 2016)	RCT	East Asian	Instrumental Reminiscence Intervention -Hong Kong (IRI HK)	Reminiscence Intervention	Depressive symptoms	6 weeks	GDS-15 (Chinese version)	Low risk
(Collado, Castillo, Maero, Lejuez, & Macpherson, 2014)	Pre-post (stage 1)	Latinx	Behavioural activation (BA)	Behavioural activation (BA)	Depressive symptoms	10 sessions	BDI-II	--
(Collado A., Calderon M., MacPherson L., & Lejuez C., 2016)	RCT	Latinx	Behavioural activation (BA)	Behavioural activation (BA)	Depression: Major Depressive Disorder	10 sessions	BDI-II	Low risk
(Comas-Díaz, 1981)	RCT	Latinx	Cognitive therapy	Cognitive therapy	Depressive symptoms	4 weeks	BDI	--
(Cooper et al., 2013)	Cluster randomised trial	Black or mixed race	Patient-centred collaborative care	Collaborative care	Depression: Major Depressive Disorder	NR	CES-D	--
(Dahne et al., 2019)	RCT	Latinx	¡Aptívate! (mobile app)	Behavioural activation (brief)	Depressive symptoms	8 weeks	BDI-II (Spanish Version)	Unclear
(de Graaff et al., 2020)	RCT	Refugees/Asylum seekers	Problem Management Plus	Problem Management Plus	MH NOS (transdiagnostic), Depression & Anxiety symptoms	6 weeks (5 sessions)	HCSL 25-depression subscale; HCSL 25-anxiety subscale	Low risk
(Drozdek, Kamperman, Bolwerk, Tol, & Kleber, 2012)	Cohort study (controlled comparison)	Refugees/Asylum seekers	Group therapy: Den Bosch model	CBT; Psychodynamic therapy	PTSD	12 months	HTQ PTSD scale 30	--
(Dwight-Johnson et al., 2011)	RCT	Latinx	CBT (telephone)	CBT	Depression	8 sessions	PHQ-9	--

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(Feldman et al., 2016)	RCT	Latinx	Cognitive Behaviour Psychophysiological Therapy (CBPT)	Cognitive Behaviour Psychophysiological Therapy (CBPT)	Panic Disorder	8 weeks	PDSS	Low risk
(Gallagher-Thompson et al., 2007)	RCT	East Asian	(In-home behavioural management program) IHBMP	CBT	Depression; Stress	12 weeks	CES-D	Unclear
(Gallagher-Thompson, Gray, Dupart, Jimenez, & Thompson, 2008)	RCT	Latinx	Coping with caregiving (CWC)	CBT	Depressive symptoms	4 months	CES-D	--
(Gallagher-Thompson et al., 2010)	RCT	East Asian	DVD: CBT skill training (self-help)	CBT	Depression; Stress	12 weeks	CES-D	Unclear
(Glueckauf et al., 2012)	Mixed methods (RCT reported)	Black or mixed race	Telephone CBT	CBT	Depression	12 weeks	CES-D	Unclear
(Gonyea, Lopez, & Velasquez, 2016)	RCT	Latinx	'Circulo de Cuidado' (CBT group intervention)	CBT	Depression; Anxiety	5 weeks (+ follow up coaching up to 12 weeks more)	CES-D (Spanish version); STAI-S (Spanish version)	Unclear
(Grote et al., 2009)	RCT	BME NOS	Enhanced brief IPT	IPT (brief)	Perinatal depression	3-6 months	EPDS	Low risk
(Habib, Dawood, Kingdon, & Naeem, 2015)	RCT	South Asian	Culturally adapted CBT for psychosis (CA-CBTp)	CBT (CBTp)	Schizophrenia	4-6 months	PANNS - general	Unclear
(Hahm et al., 2019)	RCT	East Asian	'AWARE'	CBT; Empowerment; Mindfulness	Depression	8 weeks	CES-D	Low risk
(Hahm et al., 2020)	Pre-post	East Asian; South Asian	'AWARE'	CBT; Empowerment; Mindfulness	Depression; Anxiety; PTSD	8 weeks	CESD-R; HADS-A; PCL-C	--

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(Heilemann, Pieters, Kehoe, & Yang, 2011)	Pre-post	Latinx	Motivational Interviewing + Schema Therapy (MIST)	CBT; Motivational interview; Schema therapy	Depression	8-16 weeks	BDI-II	--
(Hendriks et al., 2020)	RCT	Black or mixed race	'Strong Minds'	Positive Psychology EBP	Depression; Anxiety	6 weeks	DASS-21	Low risk
(Himelhoch et al., 2011)	Pre-post	Black or mixed race	'Connect' (telephone CBT)	CBT	Depression	14 weeks	HAM-D	--
(Hinton et al., 2004)	Randomised crossover trial	Refugees/asylum seekers; East Asian	CBT	CBT	PTSD; Panic Disorder	NR	HTQ	Unclear
(Hinton et al., 2005)	Randomised crossover trial	Refugees/asylum seekers; East Asian	CBT	CBT	PTSD; Panic Attacks (co morbid)	NR	CAPS	Unclear
(Hinton, Hofmann, Rivera, Otto, & Pollack, 2011)	RCT	Latinx	Culturally adapted CBT (CA-CBT)	CBT	PTSD	14 weeks	PTSD-CL	Unclear
(Hovey, Hurtado, & Seligman, 2014)	Pre-post	Latinx	CBT	CBT	Depression; stress	6 weeks	CES-D	--
(Huey Jr & Pan, 2006)	RCT	East Asian	Culturally adapted One Session Treatment (OST)	One session-treatment (OST)	Phobia	1 session (once)	ADIS-IV (phobia subsection)	--
(Hwang et al., 2015)	RCT	East Asian	Culturally adapted CBT (CA-CBT)	CBT	Depression	12 weeks	HAM-D	Low risk
(Interian, Allen, Gara, & Escobar, 2008)	Pre-post	Latinx	CBT	CBT	Depression (MDD)	12 weeks	BDI (Spanish version)	--
(Jones & Warner, 2011)	RCT	Black or mixed race	Claiming Your Connections (CYC)	Cognitive therapy (strengths-based framework)	Depression; Stress	10 weeks	CES-D	Low risk
(Kananian, Soltani, Hinton, & Stangier, 2020)	RCT	Refugees/asylum seekers	Culturally adapted CBT Plus	CBT	MH NOS	6 weeks (12 sessions)	GHQ-28	Low risk

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(Kanter, Santiago-Rivera, Rusch, Busch, & West, 2010)	Open trial (treated as pre-post)	Latinx	Behavioural activation-Latino	Behavioural activation (BA)	Depression	12-20 weeks	BDI-II	--
(Kanter et al., 2015)	RCT	Latinx	Behavioural activation-Latino	Behavioural activation (BA)	Depression	12 sessions (NOS)	HAM-D (Spanish version)	Low risk
(Karasz et al., 2015)	RCT	South Asian	The Action to Improve Self-esteem and Health through Asset building (ASHA)	CBT	Depression	26 weeks (12 sessions)	PHQ-9	--
(Kaltman, de Mendoza, Serrano, & Gonzales, 2016)	Pre-post	Latinx	'Latinas Saludables' ('healty latinás')	CBT; Behavioural activation; Motivational interview	Depression; PTSD	NR	PHQ-9; PTSD-CL	--
(Kayrouz et al., 2015)	Pre-post	Middle Eastern	Arab Wellbeing Course (online)	CBT (iCBT)	Depression; Anxiety	8 weeks	PHQ-9; GAD-7	--
(Knaevelsrud, Brand, Lange, Ruwaard, & Wagner, 2015)	RCT	Middle Eastern	iCBT	CBT (iCBT)	PTSD	5 weeks	PDS total score/overall	Low risk
(Koch, Ehring, & Liedl, 2020)	RCT	Refugees/asylum seekers	STARC	STARC	MH NOS (transdiagnostic)	14 weeks	GHQ-28	Low risk
(Kohn, Oden, Muñoz, Robinson, & Leavitt, 2002)	Quasi-experimental study	Black or mixed race	African American-CBT (AACBT; group)	CBT	Depression (MDD)	16 weeks	BDI	--
(Kruse, Joksimovic, Cavka, Woller, & Schmitz, 2009)	RCT	Refugees/asylum seekers	Trauma-Focussed Psychotherapy	CBT; Progressive muscle relaxation; Trauma-psychotherapy	PTSD	25 hours (over several weeks)	HTQ (PTSD subscale)	--
(Laperriere et al., 2005)	RCT	BME NOS	Cognitive behavioural stress management/ expressive supportive therapy (CBSM+)	CBT	Depression	10 weeks	BDI	Unclear

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(Leiler, Wasteson, Holmberg, & Bjärtå, 2020)	Pre-post	Refugees/asylum seekers	'AMIN' (psychoeducational group intervention)	Psychoeducation	MH NOS	5 weeks (6 sessions)	RHS	--
(Lindegaard et al., 2019)	RCT	Middle Eastern; Refugees/asylum seekers	iCBT	CBT	Depression	8 weeks	BDI-II	Low risk
(Lindegaard et al., 2020)	RCT	BME NOS; Refugees/asylum seekers	iCBT (self-help)	CBT	Depression	8 weeks	PHQ-9	Low risk
(Lovell et al., 2014)	RCT	BME NOS	Wellbeing intervention	CBT	Depression; Anxiety	16 weeks	CORE-OM	--
(Matsumoto et al., 2020)	Pre-post	East Asian	CBT (video conference)	CBT	Anxiety	16 weeks	Y-BOCS	--
(Meffert et al., 2014)	RCT	Refugees/asylum seekers; Black or mixed race	IPT	IPT	Depression; PTSD	3 weeks	HTQ	Unclear
(Miranda, Azocar, Organista, Dwyer, & Areane, 2003)	RCT	BME NOS	CBT + case management	CBT; case management	Depression	12 weeks	BDI	--
(Muto, Hayes, & Jeffcoat, 2011)	RCT	East Asian	Acceptance and commitment therapy (ACT) bibliotherapy	Acceptance and commitment therapy (ACT) bibliotherapy	Depressive symptoms; Anxiety	8 weeks	GHQ-12	Low risk
(Naeem et al., 2014)	RCT	South Asian	Culturally adapted CBT self-help (CA-CBT-SH)	CBT	Depression	12 weeks	HADS (depression subscale)	Low risk
(Naeem et al., 2015)	RCT	South Asian	Culturally adapted CBT for psychosis (CA-CBTp)	CBT (CBTp)	Schizophrenia	4 months	PANNS (general)	Low risk
(Neuner et al., 2008)	Randomised controlled dissemination trial	Refugees/asylum seekers	Trauma counselling	Trauma counselling	PTSD	3 weeks	PDS	Low risk
(Pan, Huey, & Hernandez, 2011)	RCT	Black or mixed race	Culturally adapted One Session Treatment (OST)	One session-treatment (OST)	Phobia	1 session (once)	FSS-III	--

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(Piedra & Byoun, 2011)	Pre-post	Latinx	'Vida Alegre' (group manualized CBT)	CBT	Depression	10 weeks	CES-D (Spanish version)	--
(Rathod et al., 2013)	RCT	BME NOS	Culturally adapted CBT for psychosis (CA-CBTp)	CBT (CBTp)	Schizophrenia	16-20 weeks	CPRS (total)	Low risk
(Razali, Hasanah, Aminah, & Subramaniam, 1998)	RCT	East Asian; Religious minority	Religious cultural psychotherapy	Cognitive therapy	Anxiety; Depression	6 months	HARS; HAM-D	Unclear
(Razali, Aminah, & Khan, 2002)	RCT	East Asian; Religious minority	Religious cultural psychotherapy	Cognitive therapy	Anxiety (generalised anxiety disorder)	6 months	HARS	Unclear
(Rosmarin, Pargament, Pirutinsky, & Mahoney, 2010)	RCT	Religious minority	Internet based Spiritually Integrated Treatment (SIT)	Psychotherapy	Anxiety	NR	PSWQ	Low risk
(Ryan, Maurer, Lengua, Duran, & Ornelas, 2018)	Pre-post	Latinx	'Amigas Latinas Motivando el Alma' (ALMA)	Mindfulness	Depression; Anxiety	5 weeks	PHQ-9 (Spanish version); GAD-7 (Spanish version)	--
(Sander, Laugesen, Skammeritz, Mortensen, & Carlsson, 2019)	Retrospective cohort study	Refugees/asylum seekers	CBT (interpreter)	CBT	PTSD	16 sessions	HTQ	--
(Scogin et al., 2007)	RCT	BME NOS	Home-based CBT	CBT	Depressive symptoms; QoL	5.3 months (average)	SCL-R-90 (GSI)	Low risk
(Shaw, Ward, Pillai, & Hinton, 2018)	RCT	Refugees/asylum seekers; Middle Eastern	Culturally adapted CBT (CA-CBT)	CBT (CBT)	Depression & Anxiety; PTSD	8 weeks	HSCL-25 (depression subscale)	Unclear
(Shin & Lukens, 2002)	RCT	East Asian	Psychoeducation + Individual Supportive Therapy	Psychoeducation	Schizophrenia	10 weeks	BPRS total	Low risk

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(So et al., 2015)	RCT	East Asian	Meta cognitive training for delusions (MCTd)	Meta cognitive training for delusions (MCTd)	Schizophrenia	4 weeks	PSYRATS (delusions)	Low risk
(Sonderegger, Rombouts, Ocen, & McKeever, 2011)	Randomised trial (convenience sample)	Refugees/asylum seekers	'EMPOWER'	CBT	Depressive symptoms; Anxiety symptoms	NR	APAI (two tam scale)	--
(Tol et al., 2020)	Cluster RCT	Refugees/asylum seekers	Self-help PLUS	ACT	Mental health NOS	5 weeks	Kessler-6	Low risk
(Ward & Brown, 2015)	Pre-post	Black or mixed race	'Oh Happy Day Class' (OHDC)	CBT (coping with depression)	Depression (MDD)	12 weeks	CES-D	--

ACT = acceptance and commitment therapy; ADIS = Anxiety disorder interview schedule; APAI = The Acholi Psychosocial Assessment Instrument; BADS = Behavioural Activation for Depression Scale; BAI = Beck Anxiety Inventory; BDI = Beck Depression Inventory; BPRS = Brief psychiatric rating scale; BSI = brief symptom inventory; CAPS = Clinician-administered PTSD scale; CBT = cognitive behavioural therapy; CDS = Cardiac Depression Scale; CES-D = Centre for Epidemiological Studies Depression Scale; CORE-OM = CORE outcome measure; CPRS = Comprehensive Psychopathological Rating Scale.; CSR = Clinician severity rating; EBT = evidence based treatment; EDE = eating disorder examination; EPDS = Edinburgh Postnatal Depression Scale; FSS = Fear Survey Schedule; GAD = Generalised Anxiety Disorder Assessment; GHQ = General Health Questionnaire; HAM-D = Hamilton Depression Rating Scale; HARS = Hamilton Anxiety Rating Scale; HSCL = Hopkins Symptom Checklist; HTQ = Harvard Trauma Questionnaire; IED-R = Impact of Events Scale Revised; IPT = interpersonal therapy/treatment; MDD = major depressive disorder; NOS = not otherwise specified; NR = not reported/not found; PANNS = Positive and Negative Syndrome Scale of Schizophrenia; PCL-5 = PTSD checklist; PDS = post-traumatic stress diagnostic scale; PDSS = Panic Disorder Severity Scale; PHQ = Patient health questionnaire; PSWQ = Penn State Worry Questionnaire; PSYRATS = Psychotic Symptom Rating Scales; PTA scale = perceived threat of dementia anxiety scale; PTSD = post-traumatic stress disorder; PTSD-CL = PTSD checklist; PCL-C = PTSD checklist (civilian); PTSS = post-traumatic stress symptoms; QIIDS-SR = Quick inventory of depressive symptomology; RCT = randomised controlled trial; RHS; Refugee Health Screener; RoB = risk of bias; SCL = symptom checklist; STARC = Skills training of affect regulation; TMHS = total mental health scale; Y-BOCS = Yale-Brown Obsessive-Compulsive Scale.

Appendix D: Study characteristics - systematic reviews

Twenty-one systematic reviews were identified (**Table D.1**). All but one of the reviews focussed primarily on culturally adapted care. Targeted populations varied with some reviews focussing on studies of a specific BME group and others incorporating studies looking at a range of minority populations. Similarly, many of the reviews looked generally at mental health, including a range of conditions while others focussed on a specific diagnosis (most commonly, depression). Seven of the reviews included meta-analyses, for which observed effect sizes ranged from small to very large. Generally, reviews supported the notion that adapted interventions are beneficial compared to controls, in producing better outcomes for BME groups.

Table D.1: Study characteristics of systematic reviews

Study ID	Population	Target condition(s)	Included studies (n)	Participants (n)	Study types included	Intervention(s)	Adaptation type(s) reported	Summary of findings
(Antoniades, Mazza, & Brijnath, 2014)	Immigrants: first generation	Depression	15	NR	9 quantitative; 5 mixed methods; 1 case study. Qual, quant & mixed-methods: Descriptive uncontrolled design; RCT x1;NR experimental study ; Case study ; Pilot RCT ; Randomised pilot study; Pre/post/follow-up study; Pre/post repeated measures study; Pilot case study;	CBT; BA; Collaborative Care Models; Exercise interventions; PST	Cultural adaptation	15 included studies, of which 9 looked at adapted treatments. Majority of studies of Latino immigrants in the USA. 12 studies looked at use of psychotherapies; the remaining 3 looked at collaborative care models and exercise interventions for depression. CBT and BA improved symptoms when culturally adapted, PST improved symptoms with and without adaptations. CC models and exercise did not improve depression significantly.
(Benish, Quintana, & Wampold, 2011)	Racial ethnic minority groups including African American, Asian American and Latino/Hispanic	Unspecified: psychological symptoms/distr ess	19 (reporting 21 direct comparisons)	472	Published and non-published studies	Psychotherapy various: individual therapy; group therapy; family therapy	Cultural adaptation	Findings favoured adapted therapy over non-adapted therapy significantly. Cohen’s d = 0.32 (95% CI 0.21-0.43), I ² = 63.78%
(Benuto & O’Donohue, 2015)	Latino/Hispanic	Various mental health conditions	12	NR	RCTs with WL control; RCTs without WL control	Culturally sensitive CBT	Cultural adaptation	The authors found evidence that Hispanics may be effectively treated using conventional CBT. They found little evidence that cultural adaptations result in improved effect sizes; cultural adaptations do not show expected homogeneity re

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Study ID	Population	Target condition(s)	Included studies (n)	Participants (n)	Study types included	Intervention(s)	Adaptation type(s) reported	Summary of findings
								cultural tailoring, indication poor understanding of Hispanic culture.
(Bhui et al., 2015)	BME	Various mental health conditions	21	NR	RCTs (x12); Observational quantitative studies (x2); case series (x3); qualitative study (x1); descriptive case studies (x3)	CBT; family therapy; tele-psychiatry	Cultural adaptation; Provider of treatment (ethnic matching); Method of access	Culturally adapted psychotherapies (CBT and family therapies) showed evidence of benefit, as did tele-psychiatry that included ethnic matching.
(Cabassa & Hansen, 2007)	Latino	Depression	9 (reporting 4 trials)	NR	RCTs	CBT; Collaborative care	Cultural adaptation; Language translations; Medium used to provide treatment	Effective depression care programs in primary care for Latinos populations need to be carefully adapted and modified to fit the social, cultural and economic realities of this population.
(Chowdhary et al., 2014)	'ethnic minorities in western countries'	Depression	20	NR	RCTs; non-randomised trials	Psychotherapy various: CBT; IPT); psychoeducation; PST; dynamically-oriented therapy	Cultural adaptation	A meta-analysis of 16 studies included in the review showed a significant benefit of adapted interventions. Cultural adaptations of psychotherapies are effective in the treatment of depressive disorders in people from ethnic minorities. SMD = -0.72 (95% CI -0.94 - -0.49), $I^2 = 90%$
(Collado A., Lim A.C., & MacPherson L., 2016)	Latino	Depression	36	NR	RCTs; OLTs	Psychotherapy various: CBT; PST; IPT; BA	Cultural adaptation	The authors concluded that there might be a correlation between cultural adaptations and treatment outcomes
(Degnan et al., 2018)	BME	Schizophrenia	46 journal articles reporting 43 individual studies	7828	RCTs	Psycho-social interventions: Family interventions; CBT; Combined interventions; Social skills training;	Cultural adaptation	A meta-analysis found a statistically significant post-treatment effect in favour of adapted interventions for total symptom severity, positive symptoms, negative symptoms and general symptoms. The authors conclude that culturally adapted

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Study ID	Population	Target condition(s)	Included studies (n)	Participants (n)	Study types included	Intervention(s)	Adaptation type(s) reported	Summary of findings
						illness management; mindfulness- based psychoeducation		interventions are more effective when compared to treatments as usual
(Escobar & Gorey, 2018)	Latino (Hispanic)	Depression	9	NR	RCTs; quasi-experimental study	Cognitive behavioural interventions	Cultural adaptation	<p>A meta-analysis indicated an effect in favour of cognitive behavioural interventions that incorporated ‘deep structure’ cultural adaptations. Interventions that incorporated deep structure interventions were more effective than those that included ‘surface structure’ or non-adapted interventions for Hispanic people with depression. Deep structure culturally adapted interventions had a success rate of 15-30% better than those typically observed with other usual treatment practices.</p> <p>Cohen’s $d = 0.41$ (95% CI 0.30 – 0.52)</p>
(Gearing et al., 2013)	Middle Eastern and Arab	Various mental health conditions	22		Various: qualitative and quantitative studies	Psychological and mental health treatments	Language translation; Cultural adaptation	<p>Barriers to intervention acceptability within the cultural context were community and system difficulties and problems with clinical engagement processes. Facilitation strategies were working in partnership with the local community and cultural context, engagement with acceptable and traditional intervention characteristics and development of culturally appropriate treatment strategies and techniques. The authors provide recommendations for effective treatment adaptation and translation for Arab communities.</p>
(Griner & Smith, 2006)	BME	Various mental health conditions	76	25225	Experimental and quasi-experimental studies	Various	Cultural adaptation	<p>A meta-analysis indicated a moderately strong effect size in favour of culturally adapted interventions. Interventions targeted towards a specific cultural group</p>

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Study ID	Population	Target condition(s)	Included studies (n)	Participants (n)	Study types included	Intervention(s)	Adaptation type(s) reported	Summary of findings
								were 4 times more effective than those provided to groups of patients from a variety of cultures. Cohen's d = 0.45 (95% CI 0.36 – 0.53), Q = 459
(Hall, Ibaraki, Huang, Marti, & Stice, 2016)	BME	Various mental health conditions	78	13998	Various study designs	Psychological interventions	Cultural adaptation	The meta-analysis showed an overall effect size that favoured the effectiveness of culturally adapted interventions over other interventions or conditions (no intervention/other intervention). A medium effect size was found to favour culturally adapted interventions over non-adapted versions of the same intervention. Overall, culturally adapted interventions produced better outcomes than comparison conditions. Cohen's d = 0.67 (95% CI NR), $I^2 = 72%$
(Hankerson & Weissman, 2012)	African Americans	Various health and mental health conditions	8	910	RCTs; Open trials; Observational studies	Church-based health promotion programmes	Method of access; Medium used to provide treatment	Only one of the studies included looked at anxiety and depressive symptoms as outcomes. The authors concluded that research on church-based health promotion programs for depression is currently underdeveloped and that the literature on church-based health promotion programs for mental disorders among African Americans is extremely limited. Therefore, any conclusions about the role of the Black church in mental health care should be interpreted with caution
(Healey et al., 2017)	BME	Various health and mental health conditions	31	NR	Various study designs	Various	Cultural adaptation	Seventeen of the included studies report at least one significant effect in favour of culturally adapted care. However, there were also findings that favoured the control

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Study ID	Population	Target condition(s)	Included studies (n)	Participants (n)	Study types included	Intervention(s)	Adaptation type(s) reported	Summary of findings
								group or showed no difference. Researchers did not find consistent evidence supporting implementation of any specific type of adaptation nor increased efficacy with any particular cultural group
(Huey & Tilley, 2018)	Asian Americans	Various mental health conditions	21 (18 included in meta-analysis)	6377	Various study designs	Various	Cultural adaptations (cultural tailoring)	Specificity of cultural tailoring was significantly associated with outcomes, with treatments tailored specifically for Asian subgroups (e.g., Chinese Americans) showing the largest effect sizes (Cohen's $d = 1.10$), and those with no cultural tailoring or non-Asian tailoring showing the smallest effects (Cohen's $d = 0.25$)
(Interian A., Lewis-Fernandez R., & Dixon L.B., 2013)	"racial ethnic groups"	Depression; Schizophrenia	10 (only 3 studies incorporated an adaptation)	NR	RCTs	Collaborative care for depression; Family therapy for schizophrenia	Cultural adaptations (Socio-cultural enhancements)	The authors concluded that collaborative care for depression can help to improve engagement in people from racial-ethnic populations with depression in primary care. The effectiveness of interventions on clinical outcomes was inconsistent.
(Kalibatseva & Leong, 2014)	BME	Depression	16	NR	Various study designs	Various depression interventions	Cultural adaptations (culturally-sensitive)	No analysis of effectiveness or meta-analysis was undertaken. The authors conclude that majority of culturally sensitive treatments for depression involve general and practical adaptations, such as translating materials or incorporating specific cultural values.
(Leske et al., 2016)	Indigenous populations	Depression; Anxiety; PTSD; Personality Disorder; Bipolar disorder; Psychotic Disorder; mood Disorder	16 (7 studies incorporated adaptations but only 5 of these considered mental health interventions)	NR	RCTs; pre-post studies	Various: psychological/psychosocial interventions; pharmacological interventions; educational interventions	Cultural adaptations	Of the seven culturally adapted psychological/psychosocial intervention studies, all reported significant improvement on at least one measure of symptoms of mental illness, functioning, and alcohol use

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Study ID	Population	Target condition(s)	Included studies (n)	Participants (n)	Study types included	Intervention(s)	Adaptation type(s) reported	Summary of findings
(Palic & Elklit, 2011)	Refugees	PTSD	25 (only 4 used adaptations)	NR	Various study designs	CBT	Cultural adaptations (culturally sensitive)	The majority of the studies were treatment studies of different forms of CBT. Only 4 of the studies incorporated culturally sensitive adaptations. Large effect sizes were obtained in some of the CBT studies, indicating that CBT may be suitable for treatment of PTSD with refugees in many cases
(Pinos-Leano, Liechty, & Piedra, 2017)	Immigrants - Latinos	Depression	11	NR	RCTs; Quasi-experimental studies; pre-post studies	CBT	Cultural adaptations (categorised as (a) cognitive-informational adaptations, (b) affective-motivational adaptations, and (c) environmental adaptations)	The most commonly used cultural adaptations were language, inclusion of migration experience in the therapy and adjustment of literacy level. Culturally adapted CBT to address depressive symptoms showed promising results
(Van Loon A., Van Schaik A., Dekker J., & Beekman A., 2013)	“ethnic minorities”	Depression; Anxiety	9	NR	RCTs; pre-post studies	CBT; Panic control therapy; Exposure therapy	Cultural adaptations	Culturally adapted treatment for depression and anxiety driven by guidelines, was effective for minority patients from different cultural backgrounds. The authors found some evidence for the effectiveness of the population-specific cultural adaptations. SMD = 1.06 (95% CI 0.51 – 1.62)

BA = behavioural activation; BME = Black and minority ethnic groups; CBT = cognitive behavioural therapy; CI = confidence interval; IPT = interpersonal therapy/treatment; NR = not reported; PTSD = post-traumatic stress disorder; RCTs = randomised controlled trials; SMD = standardised mean difference; WL = waitlist

Appendix E: Adaptations applied to all studies

Table E.1: Adaptations applied to all studies (K=88)

Study ID (first author +publication date)	Target population	Target condition(s)	Adaptation area	Specific adaptation types	Common factors: Acceptability & suitability	Common factors: Therapeutic relationship	Common factors details
Acarturk 2015	Refugees/Asylum seekers	PTSD; Depression	<i>Therapist-related</i>	Language translation	Cultural adaptations; Education		Culturally sensitive; Psychoeducation for opinion leaders
			<i>Content-related</i>	Cultural			
			<i>Organisation-specific</i>	Time or length of treatment			
Acarturk 2016	Refugees/Asylum seekers	PTSD; Depression	<i>Therapist-related</i>	Language translation	Cultural adaptations; Education		Culturally sensitive; Psychoeducation for opinion leaders
			<i>Content-related</i>	Cultural			
			<i>Organisation-specific</i>	Time or length of treatment			
Alavi 2020	Middle Eastern	Anxiety	<i>Therapist-related</i>	Language translation	Cultural adaptations	Alliance; Patient feedback	Participants had opportunity to feedback to facilitator throughout; A designated therapist providing feedback support and simplified communication throughout to reduce barriers traditionally experienced by target population Cultural background of the target population was considered
			<i>Content-related-related</i>	Cultural; Language translation;			
			<i>Organisation-specific</i>	Form used to provide treatment (online/email)			
An 2020	East Asian	Anxiety	<i>Therapist-related</i>		Cultural adaptations;	Alliance; Agreement of treatment goals; Expectations of treatment	Clarify role of therapist to group and set group dynamics; therapist as facilitator and educator; psychosocial education incorporated Culturally adapted in terms of reducing ambiguity for Asian populations; Incorporating Tai Chi as behavioural activation component
			<i>Content-related-related-related</i>	Cultural			
			<i>Organisation-specific</i>	Form used to provide treatment			

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					Preparation of the patient; Education	
Afuwape 2010	Black or mixed race	Anxiety; Depression	<i>Therapist-related</i>	Provider of treatment		
			<i>Content-related</i>		Education	Health education as part of the intervention package
			<i>Organisation-specific</i>	Method of access		
Alegria 2014	Latino	Depression	<i>Therapist-related</i>	Training for provider; Provider of treatment (ethnic matching)		
			<i>Content-related</i>	Cultural	Cultural adaptations; Treatment structure	Culturally relevant modifications, terminology, metaphors etc; Structure of treatment was flexible
			<i>Organisation-specific</i>	Form used to provide treatment; Time or length of treatment		
Alegria 2019	Latino	Depression; PTSD; General mental health (secondary); Substance use (primary)	<i>Therapist-related</i>	Training for provider; Language translation		
			<i>Content-related</i>	Cultural	Cultural adaptations	Cultural adaptations (limited info 'tailored specifically for Latinos')
			<i>Organisation-specific</i>	Location of treatment; Form used to provide treatment		
Ashing 2014	Latino	Depression	<i>Therapist-related</i>	Training for provider; Provider of treatment; Language translation	Alliance	Therapist-related by paraprofessionals with sociocultural similarities to participants
			<i>Content-related</i>	Cultural	Cultural adaptations; Treatment structure	Culturally sensitive, culturally competent facilitators, culturally sensitive resources; Order of the treatment domains was flexible
			<i>Organisation-specific</i>			
Bedoya 2014	Latino	Depression	<i>Therapist-related</i>	Training for provider; Language translation	Alliance	Adopted the Engagement Interview Protocol and the DSM5 OCF at first visit
			<i>Content-related</i>	Cultural: Language translation	Cultural adaptations; Education	Culturally focussed; Facilitation of patient's knowledge of and resources for getting treatment
			<i>Organisation-specific</i>			
Beeber 2010	Latino	Depression	<i>Therapist-related</i>	Training for provider; Language translation	Alliance	Specific considerations to the development of the TR which underpinned the intervention based on previous work with lived experience ppts with similar demographics to the study group

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			<i>Content-related</i>	Cultural	Cultural adaptations	
			<i>Organisation-specific</i>	Location of treatment		
Bernardi 2019	Refugees/asylum seekers	PTSD	<i>Therapist-related</i>	Language translation		Alliance; Expectations of treatment
			<i>Content-related</i>	Cultural; Language translation; Religious/faith-based	Cultural adaptations; Preparation of the patient; Treatment structure	Interpreter was viewed also as a facilitator of the therapist-patient relationship
			<i>Organisation-specific</i>			Treatment provided with a facilitator to support relationship-building; foundation and rationale for treatment discussed; Simplified structural elements
Bernstein 2016	East Asian	Depression	<i>Therapist-related</i>			
			<i>Content-related</i>	Cultural	Cultural adaptations	'Culturally tailored'
			<i>Organisation-specific</i>	Time or length of treatment		
Bolton 2003	Black or mixed race	Depression	<i>Therapist-related</i>	Training for provider/facilitator; Provider of treatment		Agreement of treatment goals; Expectations of treatment
			<i>Content-related</i>	Cultural	Cultural adaptations; Treatment structure	Specific focus on agreeing goals; Initial meeting sets out what group treatment will entail and how it will work
			<i>Organisation-specific</i>	Form used to provide treatment (group); Location of treatment		Culturally-relevant terminology and modifications to manual based on consultation with layperson group leaders; Flexible treatment structure
Bonilla-Escobar 2018	Black or mixed race	Depression; PTSD; Anxiety	<i>Therapist-related</i>	Training for provider; Provider of treatment (layperson); Language translation		Alliance
			<i>Content-related</i>		Treatment structure; Education	Trained laypersons were all survivors of displacement and violence themselves and were recognised leaders or caregivers in the community
			<i>Organisation-specific</i>	Location of treatment (community)		Modular elements can stand alone and be delivered in any order; Psychoeducation provided early in treatment
Bradley 2006	East Asian	Schizophrenia	<i>Therapist-related</i>	Language translation		

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			<i>Content-related</i>	Cultural	Cultural adaptations; Education	Incorporation of traditional cultural healing practices alongside intervention, informal outreach conducted; Psychoeducation for families
			<i>Organisation-specific</i>	Location of treatment		
Cachelin 2018	Latino	Eating disorder (binge eating)	<i>Therapist-related</i>			
			<i>Content-related</i>	Cultural; Language translation	Cultural adaptations; Education	Several cultural adaptations made including socio-cultural sensitivity; Patients were educated on potential benefits of intervention
			<i>Organisation-specific</i>	Time or length of treatment		
Cajanding 2016	East Asian	Depressive symptoms	<i>Therapist-related</i>			
			<i>Content-related</i>	Cultural	Cultural adaptations	Culturally adapted to fit the Filipino context
			<i>Organisation-specific</i>			
Camacho 2015	Latinx	Depressive symptoms	<i>Therapist-related</i>	Training for provider; Language translation		Expectations of treatment Trained 'depression care specialists' in the intervention and provided a warm hand-off to confer trust and improve compliance between therapist and patient
			<i>Content-related</i>	Cultural	Cultural adaptations; Treatment structure	Altered two of the first key steps of intervention to meet patient need; Modifications to cultural perspectives and beliefs
			<i>Organisation-specific</i>			
Carter 2003	Black or mixed race	Panic disorder	<i>Therapist-related</i>	Provider of treatment		Alliance Developed through therapist displaying ethnic sensitivity
			<i>Content-related</i>	Cultural	Cultural adaptations	Cultural sensitivity/awareness
			<i>Organisation-specific</i>	Form used to provide treatment		
Chien 2012	East Asian	First-episode mental illness (NOS)	<i>Therapist-related</i>			
			<i>Content-related</i>	Cultural	Cultural adaptations; Education; Preparation of the patient	Adopted strategies to address traditional Chinese cultural tenets; Educational needs identified and incorporated; orientation and understanding of MH focussed on interdependence and collective actions
			<i>Organisation-specific</i>			
Choi 2012	East Asian	Depression	<i>Therapist-related</i>	Language translation		
			<i>Content-related</i>	Cultural; Language translation	Cultural adaptations	Culturally attuned re terms of reference and images

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			<i>Organisation-specific</i>				
Choy 2016	East Asian	Depressive symptoms	<i>Therapist-related</i>			Alliance; Empathy	Pre-intervention interview to establish rapport; Observer assisted therapist to nurture individual behavioural and emotional concerns
			<i>Content-related</i>	Cultural	Cultural adaptations; Preparation of the patient		Culturally-modified manual, culturally sensitive protocol, culturally-appropriate homework materials
			<i>Organisation-specific</i>	Form used to provide treatment; Location of treatment			
Collado 2014	Latino	Depressive symptoms	<i>Therapist-related</i>	Language translation			
			<i>Content-related</i>	Language translation			
			<i>Organisation-specific</i>				
Collado 2016	Latino	Depression: Major Depressive Disorder	<i>Therapist-related</i>	Language translation			
			<i>Content-related</i>	Language translation			
			<i>Organisation-specific</i>				
Comas-Diaz 1981	Latino	Depressive symptoms	<i>Therapist-related</i>	Language translation; Provider of treatment (ethnic matching)		Alliance	Therapist from same cultural background
			<i>Content-related</i>	Cultural	Cultural adaptations; Treatment structure		Treatment consistent with cultural values; Group therapy consistent with family/social values
			<i>Organisation-specific</i>	Form used to provide treatment (group)			
Cooper 2013	Black or mixed race	Depression: Major Depressive Disorder	<i>Therapist-related</i>	Provider of treatment (ethnic matching)		Alliance	Clinicians received an 'intervention' aimed to help them develop rapport
			<i>Content-related</i>	Cultural	Cultural adaptations; Treatment structure; Education		Culturally-tailored focussed on access barriers, social context, patient-provider relationship + culturally targeted materials; Flexible structure; Education element to treatment
			<i>Organisation-specific</i>				
Dahne 2019	Latino	Depressive symptoms	<i>Therapist-related</i>				
			<i>Content-related</i>	Language translation	Education		Psychoeducation on relationship between mood and activities provided
			<i>Organisation-specific</i>	Form used to provide treatment			

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De Graaff 2020	Refugees/Asylum seekers	Depression; Anxiety	<i>Therapist-related</i>	Provider of treatment (peers); Training for provider; Language translation	Alliance	Peer provided to support alliance
			<i>Content-related</i>	Cultural	Cultural adaptation	'Culturally adapted'
			<i>Organisation-specific</i>			
Drozdek 2012	Refugees/Asylum seekers	PTSD	<i>Therapist-related</i>		Alliance; Expectations of treatment; Agreement of treatment goals	Phase one focusses specifically on building alliance; Phase one includes agreement of treatment goals; Phase one includes setting out expectations
			<i>Content-related</i>	Cultural	Cultural adaptations; Education; Treatment structure	Cultural adaptations for displaced people; Psychoeducation formed part of the early and later phases; Included nonverbal elements
			<i>Organisation-specific</i>	Time or length of treatment; Location of treatment; Form used to provide treatment (group)		
Dwight-Johnson 2011	Latino	Depression	<i>Therapist-related</i>	Language translation; Provider of treatment (ethnic match)	Alliance	
			<i>Content-related</i>	Cultural; language translation	Cultural adaptations; Treatment structure	
			<i>Organisation-specific</i>	Location of treatment; Form used to provide treatment (phone); Method of access; Time of length of treatment		
Feldman 2016	Latino	Panic Disorder	<i>Therapist-related</i>	Training for provider; Language translation		
			<i>Content-related</i>	Cultural	Cultural adaptations	Modified treatment to address cultural characteristics of Latino pop
			<i>Organisation-specific</i>			
Gallagher-Thompson 2007	East Asian	Depression	<i>Therapist-related</i>	Language translation	Patient feedback	Final session reviewed what worked and did not work
			<i>Content-related</i>	Cultural; Language translation	Cultural adaptations; Treatment structure	Culturally acceptable terms used; Modules could be presented in any order

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			<i>Organisation-specific</i>	Location of treatment; Form used to provide treatment		
Gallagher-Thompson 2008	Latino	Depressive symptoms	<i>Therapist-related</i>	Language translation		
			<i>Content-related</i>	Cultural; Language translation	Cultural adaptations; Education	Culturally sensitive to concerns of Latino caregivers; Participants receive education in session 1 on negative effects of stress on body and mind and how treatment might help;
			<i>Organisation-specific</i>	Form used to provide treatment (small groups)		
Gallagher-Thompson 2010	East Asian	Depression	<i>Therapist-related</i>			
			<i>Content-related</i>	Cultural; Language translation	Cultural adaptations	'Culturally-tailored'
			<i>Organisation-specific</i>	Form used to provide treatment		
Glueckauf 2012	Black or mixed race	Depression	<i>Therapist-related</i>			
			<i>Content-related</i>			
			<i>Organisation-specific</i>	Form used to provide treatment		
Gonyea 2016	Latino	Depression; Anxiety	<i>Therapist-related</i>	Language translation		Alliance
			<i>Content-related</i>	Cultural	Cultural adaptations	
			<i>Organisation-specific</i>	Location of treatment		
Grote 2009	BME NOS	Perinatal depression	<i>Therapist-related</i>		Agreement of treatment goals; Alliance	Collaborative problem solving of identified barriers to care; Trust-building
			<i>Content-related</i>	Cultural	Cultural adaptations; Treatment structure	Culturally relevant modifications, terminology, metaphors etc.
			<i>Organisation-specific</i>	Time or length of treatment; Location of treatment		
Habib 2015	South Asian	Schizophrenia	<i>Therapist-related</i>			
			<i>Content-related</i>	Cultural	Cultural adaptations	
			<i>Organisation-specific</i>			

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Hahm 2019	East Asian	Depression	<i>Therapist-related</i>	Provider of treatment (ethnic matching); Language translation	Alliance;	Initial sessions emphasise building therapeutic relationship; Cultivating a space free of judgement and fostering a sense of safety		
			<i>Content-related</i>	Cultural; Language translation		Cultural adaptations; Preparation of the patient; Education	Incorporates culture-specific elements in the therapeutic process; Initial sessions incorporate educational aspects	
			<i>Organisation-specific</i>					
Hahm 2020	East Asian; South Asian	Anxiety; Depression; PTSD	<i>Therapist-related</i>	Provider of treatment (ethnic matching); Language translation	Alliance;	Initial sessions emphasise building therapeutic relationship; Cultivating a space free of judgement and fostering a sense of safety		
			<i>Content-related</i>	Culture; Language translation		Cultural adaptations; Preparation of the patient; Education	Incorporates culture-specific elements in the therapeutic process; Initial sessions incorporate educational aspects	
			<i>Organisation-specific</i>					
Heilemann 2011	Latino	Depression	<i>Therapist-related</i>		Alliance	Through use of collaborative maps co-created by patient and therapist in early stages		
			<i>Content-related</i>	Cultural		Cultural adaptations; Education; Preparation of the patient;	Sensitive to cultural milieu; Education on CBT and analysis of automatic thoughts;	
			<i>Organisation-specific</i>	Form used to provide treatment; Location of treatment (community setting); Time or length of treatment				
Hendriks 2020	Black or mixed race	Depression; Anxiety	<i>Therapist-related</i>	Training for provider/facilitator				
			<i>Content-related</i>	Cultural; Religious/faith-based			Cultural adaptations; Treatment structure; Education	Followed a comprehensive cultural adaptation framework and drew upon existing methods of adaptations (surface and deep structure); Some modules were dropped and structural changes were made to better suit target population; Psychoeducation elements
			<i>Organisation-specific</i>	Time or length of treatment				
Himelhoch 2011	Black or mixed race	Depression	<i>Therapist-related</i>	Training for provider	Alliance	Explicit methods taken to establish alliance with particular population group in early stages		
			<i>Content-related</i>	Cultural		Cultural adaptations	Cultural appropriateness determined by lived experience advisers	

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			<i>Organisation-specific</i>	Form used to provide treatment (phone); Time or length of treatment (flexible)		
Hinton 2004	Refugees/asylum seekers; East Asian	PTSD; Panic Disorder	<i>Therapist-related</i>			
			<i>Content-related</i>	Cultural	Cultural adaptations	Culturally appropriate visualisation representing cultural values and cultural modifications
			<i>Organisation-specific</i>			
Hinton 2005	Refugees/asylum seekers; East Asian	PTSD; Panic Attacks	<i>Therapist-related</i>			
			<i>Content-related</i>	Cultural	Cultural adaptations	Culturally appropriate visualisation representing cultural values and cultural modifications
			<i>Organisation-specific</i>			
Hinton 2011	Latino	PTSD	<i>Therapist-related</i>	Language translation		
			<i>Content-related</i>	Cultural	Cultural adaptations; Education	Culturally appropriate and specific analogies and imagery, culturally appropriate visualization representing cultural values; Education about PTSD using imagery
			<i>Organisation-specific</i>			
Hovey 2014	Latino	Depression	<i>Therapist-related</i>	Language translation; Provider of treatment (layperson in additional clinician); Training for provider (layperson assisting)	Alliance; Agreement of treatment goals	Early sessions focussed on patient contributions and collaborative working, establishing trust; Shared goal-setting
			<i>Content-related</i>	Cultural	Cultural adaptations; Education	Culturally responsive support groups, cultural values incorporated; Educational materials
			<i>Organisation-specific</i>	Location of treatment; Form used to provide treatment; Time or length of treatment		
Huey Jr 2006	East Asian	Phobia	<i>Therapist-related</i>	Training for provider		
			<i>Content-related</i>	Cultural	Cultural adaptations	Culture-responsive, adaptations derived from research, scholars and recommendations
			<i>Organisation-specific</i>			
Hwang 2015	East Asian	Depression	<i>Therapist-related</i>	Language translation	Alliance; Collecting patient feedback	Improving the client-therapist relationship is part of framework; reviewing and refining adaptations and testing the adapted interventions with stakeholders

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			<i>Content-related</i>	Cultural	Cultural adaptations; Preparation of the patient		Incorporates cultural beliefs about mental illness
			<i>Organisation-specific</i>				
Interian 2008	Latino	Depression (MDD)	<i>Therapist-related</i>	Language translation		Expectations of treatment; Alliance	Potential benefits of treatment communicated using Spanish phrases and terms; Use of terms/sayings to complement therapeutic techniques to ensure constant discussion between therapist and patient
			<i>Content-related</i>	Cultural	Cultural adaptations		Culturally relevant terminology and culturally sensitive language and approaches
			<i>Organisation-specific</i>	Location of treatment			
Jones 2011	Black or mixed race	Depression	<i>Therapist-related</i>	Provider of treatment			
			<i>Content-related</i>	Cultural	Cultural adaptations		
			<i>Organisation-specific</i>	Form used to provide treatment (group)			
Kananian 2020	Refuges/asylum seekers	MH NOS	<i>Therapist-related</i>	Training for provider; Language translation		Alliance	Steps to ensure safe, comfortable environment
			<i>Content-related</i>	Cultural; Language translation	Cultural adaptations; Education		Culturally adapted imagery and terms of reference; Each session started with psychoeducation
			<i>Organisation-specific</i>	Form used to provide treatment (group)			
Kanter 2010	Latino	Depression	<i>Therapist-related</i>	Language translation; Training for provider/facilitator		Agreement of treatment goals	Therapists work collaboratively to agree goals and include the family give importance of family in this group
			<i>Content-related</i>	Cultural; Language translation	Cultural adaptations; Treatment structure; Education		Culturally sensitive activation targets, incorporation of Latino specific values and beliefs; Additions to and structuring of final sessions; Education about therapy in session one
			<i>Organisation-specific</i>	Time or length of treatment			
Kanter 2015	Latino	Depression	<i>Therapist-related</i>	Language translation; Training for provider/facilitator		Agreement of treatment goals	Therapist worked collaboratively with the client to set goals
			<i>Content-related</i>	Cultural; Language translation	Cultural adaptations		Increased emphasis on culturally important resources as family and community, terms of reference acronyms that did not translate well

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			<i>Organisation-specific</i>	Time or length of treatment; Method of access (access route alternative)		
Karasz 2015	South Asian	Depression	<i>Therapist-related</i>			Agreement of treatment goals
			<i>Content-related</i>	Cultural	Cultural adaptations; Education	Group goal-getting
			<i>Organisation-specific</i>	Form used to provide treatment (group)		Culturally synchronous approach; Educational component of each session
Kaltman 2016	Latino	Depression; PTSD	<i>Therapist-related</i>			Alliance; Agreement of treatment goals
			<i>Content-related</i>	Cultural	Cultural adaptations; Preparation of the patient; Education	Initial exercise designed to induce trust-building between interventionist and patient; Ongoing goal setting and review
			<i>Organisation-specific</i>	Time or length of treatment; Form used to provide treatment (group and individual sessions)		MI techniques used to increase readiness for participation in groups; Psychoeducation component was made relevant to Latinos
Kayrouz 2015	Middle Eastern	Depression; Anxiety	<i>Therapist-related</i>			
			<i>Content-related</i>	Cultural; Language translation	Cultural adaptations; Education; Preparation of patient	Culturally-modified, culturally relevant terminology; Module educating ppts on depression and anxiety and symptoms using terms relevant to the target pop; Basic principles of CBT included modifications to make it appropriate for target group's context
			<i>Organisation-specific</i>	Form used to provide treatment (internet)		
Knaevelsrud 2015	Middle Eastern	PTSD	<i>Therapist-related</i>	Language translation; Training for provider/facilitator		Expectations of treatment
			<i>Content-related</i>	Cultural; Language translation; Religious/faith based	Cultural adaptations	Therapists responded to patient expectations of healthcare professional - provided straight instructions and decisiveness;
			<i>Organisation-specific</i>			Explicit respect towards the concept of family in line with cultural views
Kohn 2002	Black or mixed race	Depression (MDD)	<i>Therapist-related</i>			
			<i>Content-related</i>	Cultural	Cultural adaptations; Treatment structure	Changes to some of the language used to describe CBT techniques, African American

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						anecdotes to illustrate concepts; Added specific modules to address issues relevant to AA women
			<i>Organisation-specific</i>			
Koch 2020	Refugees/asylum seekers	MH NOS	<i>Therapist-related</i>		Agreement of treatment goals; Expectations of treatment	Clarifying the role of the therapist (= Person) and the clients' expectations towards a treatment (= Goals) in an initial clinical interview
			<i>Content-related</i>	Cultural	Cultural adaptations; Education	Offered same sex groups due to cultural barriers; Expressing ideas in culturally relevant visual and verbal forms
			<i>Organisation-specific</i>	Form used to provide treatment (group)		
Kruse 2009	Refugees/asylum seekers	PTSD	<i>Therapist-related</i>	Language translation	Alliance	First stage dedicated to development of treatment alliance where a relationship based on respect, truthful information and emotional bonding was established; Care taken to ensure a safe, healing space
			<i>Content-related</i>	Cultural	Cultural adaptations; Education	Adapted principles from the trauma-specific stabilization phase for war refugees + culture-related issues; First stage dedicated to education including psychoeducation
			<i>Organisation-specific</i>			
Laperriere 2005	BME NOS	Depression	<i>Therapist-related</i>			
			<i>Content-related</i>	Cultural	Cultural adaptations	Culturally-relevant emphasis
			<i>Organisation-specific</i>	Form used to provide treatment		
Lindgaard 2019	Middle Eastern; Refugees/asylum seekers	Depression	<i>Therapist-related</i>	Language translation		
			<i>Content-related</i>	Cultural; Language translation	Cultural adaptations	Modifications made to ensure cultural appropriateness included focus on positive social reinforcers and making the intervention more in line with collectivistic orientation of the target population's culture
			<i>Organisation-specific</i>	Form used to provide treatment (online); Method of access		
Leiler 2020	Refugees/asylum seekers	MH NOS	<i>Therapist-related</i>	Training for provider/facilitator; Provider of treatment (layperson/untrained); Language translation	Patient feedback	Qualitative feedback collected throughout from both staff and patients; Trained students to provide treatment

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			<i>Content-related</i>	Cultural; Language translation	Cultural adaptations; Education; Preparation of patient	Culturally inappropriate material removed
			<i>Organisation-specific</i>	Form used to provide treatment (group); Location of treatment (asylum centre)		
Lindgaard 2020	Refugees/asylum seekers	Depression	<i>Therapist-related</i>			
			<i>Content-related</i>	Cultural; Language translation	Cultural adaptations; Treatment structure	Culturally adapted in line with cultural stigma about mental health; Treatment format adapted for participant group
			<i>Organisation-specific</i>	Form used to provide treatment (online)		
Lovell 2014	Black or mixed race; South Asian	Depression; Anxiety	<i>Therapist-related</i>	Training for provider/facilitator	Agreement of treatment goals	Collaborative goal identification
			<i>Content-related</i>	Cultural	Cultural adaptations	Culturally-sensitive terminology and phrasing, reference to target group specific challenges
			<i>Organisation-specific</i>	Form used to provide treatment (telephone or face-to-face offered); Method of access (referral options)		
Matsumoto 2020	East Asian	Anxiety (various types)	<i>Therapist-related</i>			
			<i>Content-related</i>			
			<i>Organisation-specific</i>	Form used to provide treatment (videoconference)		
Meffert 2014	Refugees/asylum seekers; Black or mixed race	Depression; PTSD	<i>Therapist-related</i>	Training for provider; Provider of treatment; Language translation		
			<i>Content-related</i>	Language translation		
			<i>Organisation-specific</i>	Time or length of treatment; Location of treatment		
Miranda 2003	BME NOS	Depression	<i>Therapist-related</i>	Training for provider; Language translation		
			<i>Content-related</i>	Cultural; Language translation	Cultural adaptations	More personalised interactions

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			<i>Organisation-specific</i>	Time or length of treatment		
Muto 2011	East Asian	Depressive symptoms; Anxiety	<i>Therapist-related</i>			
			<i>Content-related</i>	Language translation; Cultural	Cultural adaptations	Culturally-relevant terms of reference and metaphors
			<i>Organisation-specific</i>			
Naeem 2014	South Asian	Depression	<i>Therapist-related</i>			
			<i>Content-related</i>	Cultural; Religious/faith-based	Cultural adaptations; Education	Culturally-relevant terms of reference and stories; Psychoeducation provided at start
			<i>Organisation-specific</i>			
Naeem 2015	South Asian	Schizophrenia	<i>Therapist-related</i>			
			<i>Content-related</i>	Cultural; Religious/faith-based	Cultural adaptations; Treatment structure	Culturally appropriate terms of reference, involvement of family member in care enhances acceptability; Added session or the family, family member of co-therapist, flexibility of structure
			<i>Organisation-specific</i>			
Neuner 2008	Refugees/asylum seekers	PTSD	<i>Therapist-related</i>	Training for provider; Provider of treatment	Empathy	The lay people trained were refugees themselves and were chosen because of their ability to empathize with ppts
			<i>Content-related</i>		Education; Preparation of the patient; Treatment structure	Psychoeducation about PTSD before treatment begun; Prepared ppts for what treatment would entail; Flexible treatment structure
			<i>Organisation-specific</i>			
Pan 2011	Black or mixed race	Phobia	<i>Therapist-related</i>		Alliance	Focussed on vertical relationship which fosters directive therapy to encourage alliance
			<i>Content-related</i>	Cultural	Cultural adaptations; Education	Addressing the participant's cultural background and acculturation status, semantic modifications; Psychoeducation
			<i>Organisation-specific</i>			
Peidra 2012	Latino	Depression	<i>Therapist-related</i>	Training for provider; Language translation		
			<i>Content-related</i>	Cultural; Language translation	Cultural adaptations; Preparation of the patient	Modifications to terminology and language and to reflect experience of migration and acculturation; Specific modifications to provide orientation to the intervention and therapeutic process

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			<i>Organisation-specific</i>	Time or length of treatment; Method of access; Location of treatment; Medium used to provide treatment (group)		
Rathod 2013	BME NOS	Schizophrenia	<i>Therapist-related</i>			
			<i>Content-related</i>	Cultural; Training for provider/facilitator	Cultural adaptations	Culturally-based patient health beliefs, attributions concerning psychosis, attention to help seeking pathways,
			<i>Organisation-specific</i>			
Razili 1998	East Asian; Religious minority	Anxiety	<i>Therapist-related</i>			Alliance (rapport)
			<i>Content-related</i>	Cultural; Religious/faith-based	Cultural adaptations	Established a good rapport by not preventing ppts from seeking additional religious support
			<i>Organisation-specific</i>			Socio-cultural adaptations in addition to specific religious/faith messages incorporated
Razili 2002	East Asian; Religious minority	Anxiety (Generalised anxiety disorder)	<i>Therapist-related</i>			Alliance (rapport)
			<i>Content-related</i>	Cultural; Religious/faith-based	Cultural adaptations	Incorporated discussion about cultural beliefs of mental illness to strengthen therapeutic relationship and develop rapport
			<i>Organisation-specific</i>			Socio-cultural adaptations in addition to specific religious/faith messages incorporated
Rosmarin 2010	Religious minority	Anxiety	<i>Therapist-related</i>			
			<i>Content-related</i>	Cultural; Religious/faith-based	Cultural adaptations; Preparation of the patient	Content-related is adapted in line with Jewish sources and folk-tales; Introduction prepares and encourages patients to engage in intervention
			<i>Organisation-specific</i>			
Ryan 2018	Latino	Depression; Anxiety	<i>Therapist-related</i>			
			<i>Content-related</i>	Cultural; Language translation	Cultural adaptations; Preparation of the patient; Education	Adapted to be culturally relevant to Latina immigrant mothers e.g. culturally relevant imagery, vignettes, terms etc.; Orientation pre-intervention; Education about key terms and dialogues
			<i>Organisation-specific</i>	Location of treatment; Time or length of treatment; Method of access (open)		
Sander 2019		PTSD	<i>Therapist-related</i>			

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	Refugees/asylum seekers		<i>Content-related</i>	Language translation		
			<i>Organisation-specific</i>			
Scogin 2007	BME NOS	Depressive symptoms	<i>Therapist-related</i>	Provider of treatment; Training for provider/facilitator		
			<i>Content-related</i>	Cultural	Cultural adaptations; Treatment structure	Inclusion of family member or friend as a facilitator; Variable amount of sessions available
			<i>Organisation-specific</i>	Medium used to provide treatment; Location of treatment		
Shaw 2018	Refugees/Asylum seekers; Middle Eastern	Depression; Anxiety	<i>Therapist-related</i>	Provider of treatment; Training for provider/facilitator		
			<i>Content-related</i>	Cultural	Cultural adaptations; Education	Incorporated culturally and religiously appropriate symbols and imagery; Initial education on trauma-related disorders and emotion
			<i>Organisation-specific</i>	Medium used to provide treatment; Time or length of treatment		
Shin 2002	East Asian	Schizophrenia	<i>Therapist-related</i>	Language translation	Agreement of treatment goals	Goals specified for each module
			<i>Content-related</i>	Cultural; Language translation	Cultural adaptations; Education	Traditional disease concepts incorporated into sessions, inclusion of family members offered; Educational techniques designed to enhance pts' learning and maintain attention
			<i>Organisation-specific</i>			
So 2015	East Asian	Schizophrenia	<i>Therapist-related</i>	Language translation		
			<i>Content-related</i>	Cultural; Language translation	Cultural adaptations	Culturally-relevant terms of reference, replaced Western examples and scenarios with those that are culture-neutral or more familiar to the HK Chinese population
			<i>Organisation-specific</i>			
Sonderegger 2011	Refugees/asylum seekers	Mental health NOS (including depressive symptoms)	<i>Therapist-related</i>	Training for facilitator/provider	Agreement of treatment goals	Goal-setting is covered in the first phase
			<i>Content-related</i>	Cultural; Language translation	Cultural adaptations	Culturally sensitive and relevant activities, includes forgiveness/reconciliation component
			<i>Organisation-specific</i>	Medium used to provide treatment (group)		

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Tol 2020	Refugees/asylum seekers	Mental health NOS	<i>Therapist-related</i>	Training for provider/facilitator; Provider of treatment (layperson); Language translation		
			<i>Content-related</i>	Language translation	Education	Psychoeducation and engagement elements
			<i>Organisation-specific</i>	Medium used to provide treatment (self-help, group); Method of access (rapid)		
Ward 2015	Black or mixed race	Depression (MDD)	<i>Therapist-related</i>	Provider of treatment (ethnic match); Training for provider/facilitator	Alliance	Methods taken specifically to elucidate trust and respect with AA clients
			<i>Content-related</i>	Cultural; Religious adaptations	Cultural adaptations; Education	Culturally-specific incorporating AA cultural beliefs into treatment; Psychoeducation incorporating AA issues
			<i>Organisation-specific</i>	Medium used to provide treatment (group)		

AA = African American; CBT = cognitive behavioural therapy; PTSD = post-traumatic stress disorder

Appendix F: Supplementary results and analyses

Search results and data acquisition

The initial search (April 2019) yielded 7640 results of which 235 potentially relevant articles were considered at full-text. One hundred and forty-nine articles were excluded leaving 86 for inclusion in the review. Of these, 66 were primary studies. Reference lists of 21 eligible systematic reviews were screened, leading to identification of an additional 8 studies which met inclusion criteria. Details of primary studies can be found in **Appendix C** and systematic reviews in **Appendix D**.

There were 13 primary studies for which additional data was requested from the corresponding author. Of these, 6 authors responded and were able to provide missing data (Alegría et al., 2019, 2014; Cajanding, 2016; Dahne et al., 2019; Habib et al., 2015; Shaw et al., 2018). A further 2 study authors responded but were unable to access or provide missing data (Camacho et al., 2015; Kohn et al., 2002). There was no response from the authors of the remaining 5 studies (Comas-Díaz, 1981; Cooper et al., 2013; Huey Jr & Pan, 2006; Karasz et al., 2015; Miranda et al., 2003). In total, 7 studies were excluded from consideration for analysis on the basis of insufficient data. However, all studies are included in the study characteristics table (**Table C.1**) and were used to answer research question 1 about frequency of adaptations reported.

Update searches

An update search in July 2020 retrieved 579 additional studies, after removing duplicates. Of these, 13 primary studies were considered at full text. Six of these studies met inclusion criteria; 5 RCTs (including a cluster randomised controlled trial) and 1 pre-post study. Missing data was requested from one study author (Alavi & Hirji, 2020) but was not received and so could not be considered for inclusion in the meta-analysis. A further update search was run in December 2020 leading to the identification of 209 studies after removing duplicates. Of these, 24 primary studies were considered at full text. Eight met inclusion criteria; 5 RCTs and 3 pre-post studies (see **Figure 1** for the study identification flowchart).

In total, 88 primary studies were included, of which 57 were RCTs (including pilots) initially considered for meta-analysis; we included 51 studies in the main analyses, following a sensitivity analysis and the removal of 6 studies with unusually large effect sizes (i.e., greater than 2). Study characteristics are available in **Appendix C**.

Sub-group analyses (RCTs) by target population group

Table F.1: Target population/group categories

Target population/group	Included in population group
Latinx	Latinx; Latino; Latina; Hispanic (Puerto Rican)
Black or mixed race	African; African American; African British; Black African; Black Caribbean; "Black"; mixed race Black African or Caribbean
East Asian	East Asian; Asian (Chinese, Korean, Japanese, Vietnamese)
South Asian	South Asian; Asian (Indian; Pakistani; Bangladeshi; Sri Lankan)
NOS/mixed groups/immigrants/migrants	"racial/ethnic diverse" "immigrants" "migrants" or no other info; mixed ethnic/racial groups
Middle Eastern	Middle Eastern; Arabian
Religious minority	Jewish; Muslim
Refugees or asylum seekers	Refugees; asylum seekers; displaced people

BME = Black and other minority ethnic; NOS = not otherwise specified

Table F.2: Number of RCTs targeting BME groups

Target population/group	Number of studies (K)	Study IDs of included RCTs
East Asian	14	An (2020); Bradley (2006); Cajanding (2016); Choi (2012); Choy (2016); Gallagher-Thompson (2007); Gallagher-Thompson (2010); Hwang (2005); Muto (2011); Razali (1998)*; Razali (2002)*; Shin (2002); So (2015); Hahm (2019)
Latinx	12	Alegria (2019); Ashing (2014); Beeber (2010); Cachelin (2018); Collado (2016); Dahne (2019); Dwight-Johnson (2011); Feldman (2016); Gallagher-Thompson (2008); Gonyea (2016); Hinton (2011); Kanter (2015)
Refugees/asylum seekers	10	Acarturk (2015); Acarturk (2016); De Graaff (2020); Koch (2020); Meffert (2014)*; Neuner (2009); Shaw (2018)*; Lindegaard (2019)*; Lindegaard (2020)*; Tol (2020)
Black or mixed race	8	Afuwape (2010); Bolton (2003); Bonilla-Escobar (2018); Carter (2003); Glueckauf (2012); Jones (2011); Meffert (2014)*; Hendriks (2020)
NOS/mixed groups	5	Laperriere (2005); Lindegaard (2020)*; Grote (2009); Rathod (2013); Scogin (2007)
Religious minority	3	Razali (1998)*; Razali (2002)*; Rosmarin (2010)
Middle Eastern	3	Knaevelsrud (2015); Shaw (2018)*; Lindegaard (2019)*
South Asian	2	Naeem (2014); Naeem (2015)

*studies which explicitly targeted people from one of the 'BME' groups who also belonged to 'religious minority' or 'refugees/asylum seekers' groups.

Table F.3: Meta-analyses of adapted interventions for different target population subgroups

Target population	K (Number of comparisons)	Hedge's g (95% CI)	p-value	I ²
East Asian	14 (15)	-0.43 (-0.71, -0.16)	.002	78.55%
Latinx	12 (13)	-0.48 (-0.84, -0.11)	.011	86.92%
Refugees or asylum seekers	10 (11)	-0.99 (-1.35, -0.64)	<.001	81.98%
Black or mixed race	8 (10)	-0.70 (-0.95, -0.46)	<.001	62.59%
NOS/mixed groups/'immigrants/migrants'	5 (5)	-0.62 (-1.04, -0.19)	.004	71.14%
Religious minority	3 (4)	-0.18 (-0.52, -0.16)	.291	64.14%
Middle Eastern	3 (3)	-1.02 (-1.29, -0.74)	<.001	0.00%
South Asian	2 (2)	-1.02 (-1.27, -0.77)	<.001	2.05%

'NOS' = not otherwise specified

Population group: East Asian

Fourteen studies looked at interventions adapted for East Asian people. One study included 2 separate samples of East Asian participants, analysed separately based on their primary diagnosis of either anxiety or depression (Razali et al., 1998), so we treated the anxiety and depression samples individually in the analysis. Two studies targeted religious minorities who were of East Asian ethnicity (Razali et al., 2002, 1998). Most studies targeted depression (Cajanding, 2016; Choi et al., 2012; Choy & Lou, 2016; Gallagher-Thompson et al., 2007, 2010; Hwang et al., 2015; Muto et al., 2011; Razali et al., 1998); fewer targeted anxiety (An et al., 2020; Razali et al., 2002, 1998); psychosis (Bradley et al., 2006; Shin & Lukens, 2002; So et al., 2015). Eight of the studies compared an adapted intervention to an active control condition, while the other 6 compared the intervention to a waitlist or no intervention condition. The majority of the studies were adapted from CBT or cognitive therapy. Seven of the studies made therapist-related adaptations; all made at least one Content-related-level adaptation

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and 5 made Organisation-specific-level adaptations. Eight studies made adaptations to impact the therapeutic relationship, however, 3 of the studies were self-help or self-administered interventions (Choi et al., 2012; D. Gallagher-Thompson et al., 2010; Muto et al., 2011). All interventions included acceptability and suitability adaptations.

The results indicate that for East Asian people, adapted interventions were significantly more effective than non-adapted or waitlist controls ($K = 14$ (15 comparisons); Hedge's $g = -0.43$ [95% CI: -0.71, -0.16, $p = .002$] and heterogeneity was substantial ($I^2 = 78.55\%$).

Population group: Latinx

Twelve studies targeted Latinx (including Hispanic, Latina or Latino) populations. One study (Gonyea et al., 2016) included primary outcome measures for both anxiety and depression. The majority of the studies targeted depression (Ashing & Rosales, 2014; Beeber et al., 2010; Collado A., Calderon et al., 2016; Dahne et al., 2019; Dwight-Johnson et al., 2011; Gallagher-Thompson et al., 2008; Gonyea et al., 2016; Kanter et al., 2015). Anxiety was targeted in 2 studies (Feldman et al., 2016; Gonyea et al., 2016). One study each looked at eating disorder (specifically, binge eating disorder) (Cachelin et al., 2018); PTSD (Hinton et al., 2011) and mental health NOS (Alegria et al., 2019). All but two of the studies compared adapted interventions to waitlist controls. Eight studies adapted traditional CBT, 3 adapted behavioural activation and one adapted IPT. Ten studies made Therapist-related adaptations, all made Content-related adaptations and 8 made Organisation-specific adaptations. The most frequently applied specific adaptation types were explicit cultural (Content-related) and language translation (Therapist-related). Common factors adaptations were made to improve the therapeutic relationship in 5 studies whereas adaptations to improve acceptability and appropriateness were made in all but one of the studies.

A significant, medium effect size was observed in favour of adapted interventions for Latinx people compared to controls ($K=12$ (13 comparisons), Hedge's $g = -0.47$ [95% CI: -0.85, -0.11], $p = .0107$). Heterogeneity was substantial: $I^2 = 86.92\%$.

Population group: Refugees and/or asylum seekers

Ten studies looked at adapted interventions for refugees or asylum seekers. Of these, the participant groups of 4 studies also belonged to another BME group (Hinton et al., 2004; Lindegaard et al., 2019, 2020; Meffert et al., 2014; Shaw et al., 2018). Most of the studies focussed on treating PTSD (Acarturk et al., 2016; Acarturk et al., 2015; Meffert et al., 2014; Neuner et al., 2008); one was transdiagnostic (de Graaff et al., 2020); the others targeted depression (Lindegaard et al., 2019, 2020; Shaw et al., 2018). Five of the studies included at least one explicit cultural-Content-related adaptation. The 3 studies that didn't incorporate explicit cultural (Content-related) adaptations made Therapist-related-level adaptations (training for provider/facilitator and changed the provider of treatment to a layperson/non-professional). Three studies included adaptations of CBT; 2 were adaptations of EMDR; 1 provided adapted trauma counselling; 1 study adapted ACT; 1 adapted problem management, and 1 was adapted from IPT. Three RCTs compared adapted interventions to active treatments, the remainder compared adapted treatments to waitlist or no intervention/delayed intervention controls.

We observed a large effect of adapted interventions for refugees/asylum seekers compared to controls ($K=10$ (11 comparisons), Hedge's $g = -0.99$ [95% CI: -1.35 to -0.64], $p < .0001$); Heterogeneity was substantial: $I^2 = 81.98\%$.

Population group: Black or mixed-race people

Black or mixed-race people were targeted in 8 studies. Five studies targeted depression (Afuwape et al., 2010; Bolton et al., 2003; Glueckauf et al., 2012; Hendriks et al., 2020; Jones & Warner, 2011); 2 targeted anxiety (Carter et al., 2003; Hendriks et al., 2020); 1 looked at mental health problems NOS (Bonilla-Escobar et al., 2018) and the remaining study targeted PTSD (Meffert et al., 2014). The study by Hendriks and colleagues (2020) included outcome measures for depression and anxiety symptoms. All but one of the studies compared adapted interventions to waitlist controls. Five of the studies used an adaptation of CBT, 1 utilised positive psychology and 2 adapted IPT. Therapist-related adaptations were made in all but one of the studies, Content-related adaptations in 5 studies and Organisation-specific adaptations in all 8 studies. The most frequently

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applied specific adaptation types were Therapist-related (provider of treatment) and Organisation-specific (the medium used to provide treatment).

A significant, medium effect size was observed in favour of adapted interventions compared to controls ($K=8$ (10 comparisons); Hedge's $g = -0.70$ [95% CI: $-0.95, -0.46$], $p < .0001$). Heterogeneity was substantial: $I^2 = 62.59\%$.

Population group: BME 'not otherwise specified', immigrants/migrants or mixed groups

Five of the included RCTs were of BME groups that were not explicitly defined (e.g., 'immigrants/migrants' with little further detail) or were of mixed ethnic groups. Four studies targeted depression (including 1 for perinatal depression) (Grote et al., 2009; Laperriere et al., 2005; Lindegaard et al., 2020; Scogin et al., 2007) and the other targeted schizophrenia (Rathod et al., 2013). All but one compared adapted interventions to active controls. Only 1 study included therapist-related adaptations, whilst all included Content-related adaptations. Four included organisation-specific adaptations. Only 1 study made adaptations to influence therapeutic relationship whilst all made adaptations to improve acceptability and suitability of treatment. The most frequently applied specific adaptation was explicit cultural adaptation, which were made across all 5 studies. Almost half of the studies provided training to the provider, the location of treatment Therapist-related and the medium used to provide treatment. Four studies adapted CBT and the other adapted IPT.

We observed significant medium effect size in favour of adapted interventions compared to controls ($K=5$; Hedge's $g = -0.62$ [95% CI: $-1.04, -0.19$], $p = .004$). Heterogeneity was considerable: $I^2 = 71.14\%$.

Population group: South Asian

Only 2 studies looked at South Asian communities. One study targeted schizophrenia (Naeem et al., 2015) and used an active control and the other targeted depression (Naeem et al., 2014) and used a waitlist/no intervention control. Neither study made Therapist-related adaptations or organisation-specific adaptations to interventions. Both made content-related adaptations and these were all exclusively and explicitly described as cultural. Both incorporated religious adaptations and neither made adaptations explicitly to influence the therapeutic relationship. Both of the interventions were adaptations of CBT.

A very large effect size was observed ($K = 2$; Hedge's $g = -1.02$ [95% CI: $-1.27, -0.77$], $p < .0001$) and there was minimal heterogeneity ($I^2 = 2.05\%$).

Population group: Religious minority

Religious minority groups were the focus of 3 studies; one which used 2 separate participant samples for anxiety and depression (Razali et al., 1998), and 2 which targeted anxiety specifically (Razali et al., 2002; Rosmarin et al., 2010). All but one of the studies were adapted from CBT; these studies also all compared the adapted CBT intervention to an active control whilst the other used a waitlist control group. The other study adapted loosely defined 'psychotherapy' None of the studies made Therapist-related adaptations, yet all made Content-related adaptations. Three of the studies included explicit modifications to influence the therapeutic relationship and all made adaptations to improve acceptability and appropriateness (all of which were described as explicitly cultural). Specific religious adaptations were made in all studies.

We observed a very small effect size in favour of adapted interventions for religious minority groups compared to controls ($K=3$ (4 comparisons); Hedge's $g = -0.18$ [95% CI: $-0.52, -0.16$], $p = .2907$) but this was not significant. Heterogeneity was substantial: $I^2 = 63.14\%$.

Population group: Middle Eastern

Three of the studies targeted people from Middle Eastern backgrounds; 1 targeted people with PTSD (Knaevelsrud et al., 2015) and the others depression (Lindegaard et al., 2019; Shaw et al., 2018). All compared adapted CBT interventions to waitlist controls. Adaptations made to all studies included Therapist-related adaptations and Content-related adaptations. Two of the studies also made Organisation-specific adaptations. Common factors adaptations included acceptability and appropriateness adaptations made in all studies, while

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only one study made modifications to impact the therapeutic relationship. All studies made explicitly described cultural adaptations.

A meta-analysis showed a very large effect size in favour of adapted interventions compared to waitlist controls ($K=3$); Hedge's $g = -1.02$ [95% CI: -1.29, -0.74], $p < .0001$. There was no heterogeneity observed: $I^2 = 0.00\%$.

Meta-regressions

All RCTs

Control type

Table F.4: Single predictor meta-regression - control group type

K	Variable	Coefficient	SE	p-value	95% CI	R ²
56	Waitlist/no intervention ^a	-0.4171	0.1315	.002	-0.67, -0.16	19.77%

^a reference category = active control

Mental health problem

Table F.5: Mental health problem meta-regressions

K	Model	Variable	Coefficient	SE	p-value	95% CI	R ²
56	1	Target problem ^a					
		Depression	-0.1328	0.2136	.5340	-0.55, 0.28	0.00%
		PTSD	-0.6446	0.3023	.033	-1.24, -0.05	
		Psychosis	-0.0544	0.3152	.8628	-0.56, 0.67	
		Eating disorder	-0.6780	0.6215	.2753	-1.90, 0.54	
		MH problem NOS	-0.0533	0.2977	.8579	-0.64, 0.53	
56	2	Target problem ^a					
		Depression	-0.1414	0.1982	.4755	-0.53, 0.25	6.96%
		PTSD	-0.5570	0.2823	.049	-1.11, -0.00	
		Psychosis	-0.0451	0.2951	.8785	-0.62, 0.53	
		Eating disorder	-0.4779	0.5874	.416	-1.63, 0.67	
		MH problem NOS	-0.0132	0.2743	.9618	-0.55, 0.52	
		Waitlist/no intervention ^b	-0.3690	0.1434	.010	-0.65, -0.09	

^a reference category = anxiety; ^b reference category = active control; MH = mental health; NOS = not otherwise specified; PTSD = post-traumatic stress disorder

Risk of bias

Table F.6: Single predictor meta-regression – risk of bias

K	Variable	Coefficient	SE	p-value	95% CI	R ²
56	Low risk of bias ^a	0.2793	0.1508	.064	-0.57, 0.02	12.21%

^a reference category = unclear risk of bias

Overarching adaptation area

Table F.7: Single predictor meta-regression- therapist-related adaptations

K	Variable	Coefficient	SE	p-value	95% CI	R ²
56	Therapist-related adaptation ^a	-0.0707	0.1485	.664	-0.22, 0.36	0.00%

^a reference category = no therapist-related adaptation

Table F.8: Single predictor meta-regression- Content-related-related adaptations

K	Variable	Coefficient	SE	p-value	95% CI	R ²
51	Content-related-related adaptation ^a	-0.2410	0.2486	.332	-0.73, 0.25	0.00%

^a reference category = no Content-related-related adaptation

Table F.9: Single predictor meta-regression- organisation-specific adaptations

K	Variable	Coefficient	SE	p-value	95% CI	R ²
56	Organisation-specific adaptation ^a	-0.3692	0.1425	.009	-0.65, -0.09	7.29%

^a reference category = no organisation-specific adaptation

Table F.10: Overarching adaptation areas meta-regressions

K	Model	Variable	Coefficient	SE	p-value	95% CI	R ²
56	1	Overarching adaptation area					
		Therapist-related adaptation ^a	0.1089	0.1474	.459	-0.18, 0.49	6.98%
		Content-related-related adaptation ^b	-0.2626	0.2458	.285	-0.74, 0.22	
		Organisation-specific adaptation ^c	-0.3995	0.1448	.006	-0.68, -0.12	
56	2	Overarching adaptation area					
		Therapist-related adaptation ^a	0.1121	0.1333	.401	-0.15, 0.37	30.50%
		Content-related-related adaptation ^b	-0.3460	0.2215	.118	-0.78, 0.09	
		Organisation-specific adaptation ^c	-0.3401	0.1316	.009	-0.60, -0.08	
Waitlist/no intervention ^d	-0.3977	0.1274	.002	-0.65, -0.15			

^a reference category = no therapist-related adaptation; ^b reference category = no Content-related-related adaptation; ^c reference category = no organisation-specific adaptation; ^d reference category = active control

Specific adaptation type

Table F.11: Single predictor meta-regression – explicit cultural (Content-related) adaptation

K	Variable	Coefficient	SE	p-value	95% CI	R ²
56	Explicit cultural adaptation ^a	-0.1374	0.2012	.495	-0.53, 0.26	0.00%

^a reference category = no explicit cultural (Content-related) adaptation

Table F.12: Single predictor meta-regression- form used to provide treatment adaptation

K	Variable	Coefficient	SE	p-value	95% CI	R ²
56	Form used adaptation ^a	-0.2031	0.1503	.177	-0.49, 0.09	0.00%

^a reference category = no form used adaptation

Table F.13: Single predictor meta-regression - language translation adaptation

K	Variable	Coefficient	SE	p-value	95% CI	R ²
56	Language translation adaptation ^a	0.0675	0.1457	.643	-0.22, 0.35	0.00%

^a reference category = no language translation adaptation

Table F.13: Single predictor meta-regression – provider of treatment adaptation

K	Variable	Coefficient	SE	p-value	95% CI	R ²
56	Provider of treatment adaptation ^a	-0.0749	0.1597	.639	-0.39, 0.24	0.00%

^a reference category = no provider of treatment adaptation

Table F.14: Single predictor meta-regression- training for provider

K	Variable	Coefficient	SE	p-value	95% CI	R ²
56	Training for provider adaptation ^a	0.2269	0.1476	.124	-0.06, 0.52	0.42%

^a reference category = no training for provider adaptation

Table F.15: Single predictor meta-regression – location of treatment

K	Variable	Coefficient	SE	p-value	95% CI	R ²
56	Location of treatment adaptation ^a	-0.0654	0.1640	.690	-0.39, 0.26	0.00%

^a reference category = no location of treatment adaptation

Table F.14: Specific adaptation type meta-regressions

K	Model	Variable	Coefficient	SE	p-value	95% CI	R ²
56	1	Specific adaptation type					
		Explicit cultural	-0.1540	0.2360	.514	-0.62, 0.31	0.00%
		Language translation	-0.0309	0.1574	.844	-0.28, 0.34	
		Form used	-0.1315	0.1669	.431	-0.46, 0.20	
		Provider of treatment	-0.2418	0.2136	.256	-0.66, 0.18	
		Training for provider	0.3166	0.1841	.085	-0.00, 0.68	
		Location of treatment	-0.0832	0.1813	.646	-0.44, 0.28	
56	2	Specific adaptation type					
		Explicit cultural	-0.1826	0.2164	.398	-0.61, 0.24	6.91%
		Language translation	-0.0002	0.1436	.999	-0.28, 0.28	
		Form used	-0.1375	0.1522	.366	-0.44, 0.16	
		Provider of treatment	-0.1692	0.1967	.389	-0.55, 0.22	
		Training for provider	0.2694	0.1684	.109	-0.06, 0.60	
		Location of treatment	-0.1350	0.1658	.416	-0.46, 0.19	
		Waitlist/no intervention ^a	-0.4099	0.1417	.004	-0.69, -0.13	

^a reference category = active control; Language translation (therapist and Content-related-related) adaptations; form used = form used to provide treatment

Common factors adaptations

Table F.16: Single predictor meta-regression – therapeutic relationship adaptations

K	Variable	Coefficient	SE	p-value	95% CI	R ²
56	Therapeutic relationship	0.0339	0.1450	.820	-0.25, 0.32	0.00%

^a reference category= no therapeutic relationship adaptation

Table F.16: Single predictor meta-regression - acceptability and appropriateness adaptations

K	Variable	Coefficient	SE	p-value	95% CI	R ²
56	Acceptability and suitability ^a	0.2130	0.3827	.578	-0.54, 0.96	0.00%

^a reference category= no acceptability and suitability adaptation

Table F.17: Common factors adaptations meta-regressions

K	Model	Variable	Coefficient	SE	p-value	95% CI	R ²
56	1	Common factors					
		Therapeutic relationship	-0.0191	0.1489	.897	-0.31, 0.27	0.00%
		Acceptability and suitability	-0.2059	0.3941	.601	-0.98, -0.40	
56	2	Common factors					
		Therapeutic relationship	-0.0505	0.1373	.713	-0.22, 0.32	16.21%
		Acceptability and suitability	-0.3031	0.3715	.415	-1.03, 0.42	
		Waitlist/no intervention ^a	-0.4314	0.1356	.002	-0.70, -0.17	

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^a reference category = active control

RCTs of adapted CBT interventions for anxiety and depression

Common factors adaptations

Table F.18: Common factors adaptations meta-regressions

K	Model	Variable	Coefficient	SE	p-value	95% CI	R ²
27	1	Common factors					
		Therapeutic relationship	-0.1038	0.2531	.6818	-0.60, 0.39	0.00%
		Acceptability and suitability	-0.3327	0.8839	.7067	-2.07, 1.40	

Specific adaptation type

Table F.19: Specific adaptation type meta-regressions

K	Model	Variable	Coefficient	SE	p-value	95% CI	R ²
27	1	Specific adaptation type					
		Explicit cultural	-0.0187	0.5587	.973	-1.18, -0.20	0.97%
		Language – Content-related-related	0.2779	0.3282	.397	-0.37, 0.92	
		Form used	0.3151	0.2676	.239	-0.21, 0.84	
		Language – therapist-related	-0.4174	0.2934	.155	-0.99, 0.16	

Language – Content-related = language translation (Content-related-related) adaptations; language – therapist-related = language translation (therapist-related) adaptations; form used = form used to provide treatment

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