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Examining Psychosocial Interventions for Refugees from Asia: A Meta-Analysis and Systematic Review on Efficacy, Effectiveness, and Cultural Tailoring

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Biography

The author was born in Baotou, Inner Mongolia in China on May 28, 1996. She graduated from Diamond Bar High School in California in 2014. She received her Bachelor of Arts degree in Psychology with honors from the University of California, Davis in 2017. The author publishes with her legal/Chinese name, Mengxue Sun, and goes by Fiona Sun.

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Abstract

Background: Internally displaced persons (IDPs), refugees, and asylum seekers who have experienced forced migration are at a disproportionate disadvantage of experiencing distress and developing mental health problems. Research on psychosocial interventions for refugees indicated positive findings on symptom improvement in depression, posttraumatic stress disorder, and anxiety. However, previous meta-analyses and systematic reviews have primarily focused on randomized control trials (RCTs) to the exclusion of a large body of intervention research. In addition, many previous reviews have included studies that targeted at specific treatment types (e.g., cognitive behavioral therapy, narrative review therapy) or specific mental diagnoses (e.g., major depressive disorder, posttraumatic stress disorder). Furthermore, limited reviews have focused on Asia-origin refugees regarding treatment outcomes and cultural appropriateness. Refugees originating from Asia face unique challenges prior to, during, and after their resettlement process, but limited literature has examined whether interventions are culturally appropriate for this population.

Methods: The current study provided a comprehensive review of adult-focused interventions aiming at improving refugees' psychosocial outcomes. RCTs and NRCTs were both evaluated. Article search was conducted in PsycINFO, PubMed, Cumulative Index of Nursing and Allied Health Literature (CINAHL), Web of Science, Cochrane Central Register of Controlled Trials (CENTRAL), PTSDpubs (formerly Published International Literature of Traumatic Stress [PILOTS]), World Health Organization - Global Index of Medicus, Education: Resources Information Center (ERIC), and ProQuest Dissertations and Theses. The preferred reporting instrument for systematic

reviews and meta-analysis (PRISMA) was strictly followed. Meta-analytic synthesis and meta-regression analyses were conducted with outcomes from RCTs, and a narrative review was provided to synthesize outcomes from NRCTs. In addition, cultural tailoring was synthesized in a narrative review to evaluate whether interventions are culturally appropriate for Asia-origin refugees.

Results: An initial search of 23,652 articles were found, and following two more recent searches, a final total of 31 articles were included in the current synthesis (20 RCTs, 11 NRCTs). A total of 3,082 participants were included, with a mean age of 40.31 years (*SD* = 8.01) and mean resettlement length of 6.32 years (*SD* = 4.88). A broad range of intervention types were observed, and a narrative review was provided on detailed treatment and participant characteristics. Meta-analytic results indicated that when treatments were compared with control groups, refugees' psychosocial outcomes across multiple domains significantly improved. However, due to high statistical heterogeneity and publication bias in most outcomes, only depressive symptoms at post-intervention (*SMD* = -0.42) and posttraumatic stress at follow-up (*SMD* = -0.52) had statistically significant pooled effect sizes. Moreover, meta-regression findings indicated significant subgroup differences among no-treatment control vs. some-treatment control groups, group vs. individual interventions, and requiring symptom threshold vs. no symptom requirement. A narrative review on NRCTs found similar results that interventions significantly improved refugees' psychosocial outcomes, though some mixed findings were observed. Regarding cultural tailoring, all reported some cultural tailoring in their treatments, though the extent varied across studies. The most commonly tailored treatment components included language adaptation and treatment content tailoring.

Discussion: Findings indicated that evaluated interventions significantly improve Asia-origin refugees' psychosocial outcomes. We also found that all interventions were tailored for refugees and their cultural backgrounds. Future research is needed to better assess efficacy and effectiveness of interventions for different psychosocial outcomes and the added benefit of cultural tailoring. Recommendations for researchers and providers are provided in detail.

Keywords: Meta-analysis, systematic review, refugee, refugee interventions, cultural tailoring

Examining Psychosocial Interventions for Refugees from Asia: A Meta-Analysis and Systematic Review on Efficacy, Effectiveness, and Cultural Tailoring

There are currently 50.9 million internally displaced persons (IDPs), 26.6 million refugees, and 4.4 million asylum seekers worldwide. The United Nations High Commissioner for Refugees (UNHCR) reports that 68% of the world's refugee population originate from five countries, three being countries in Asia (this review defines Asian countries according to their membership in the United Nations, Regional Groups of Asia-Pacific and excludes countries in the Pacific): Syria Arab Republic, Afghanistan, and Burma/Myanmar. More specifically, Syria has been the origin of the largest refugee population since 2014; Afghanistan has had a large population of refugees since the 1980s; and refugees from Burma/Myanmar surged between 2007 and 2016 (UNHCR, 2021). This review included Asia-origin refugees recognized with the UNHCR status as well as those who were still in the process of seeking international protection of refugee status (i.e., asylum seekers and IDPs); all of which heretofore will be referenced as refugees for brevity.

Psychosocial Challenges for Refugees

Experiencing hardships and trauma prior to, during, as well as after the resettlement process places refugees at an increased risk for psychological difficulties (Murray et al., 2010; Nicholson, 1997). Examples of pre-migration hardships that could affect refugees' mental health are combat involvement, occurrences of war and post-war related traumatic events, persecution, and racial or cultural conflicts (Bogic et al., 2012; George, 2012; Robertson et al., 2016). Research on challenges experienced during the resettlement journey is limited; some examples are insecure visa status and sexual

violence against women (Hynes & Cardozo, 2000; Li et al., 2016). Post-resettlement adversities may include financial difficulties, social exclusion, increases in domestic conflicts, and everyday discrimination (Hynie, 2018; Kim, 2016; Li et al., 2016; Wells et al., 2016). In addition, structural and demographic factors such as fewer years of education, lower socioeconomic status, older age, and female gender further increases risk for mental health difficulties (Porter & Haslam, 2005).

Mental disorders including major depressive disorder (MDD), generalized anxiety disorder (GAD), and posttraumatic stress disorder (PTSD) are prevalent among refugees, though there is wide variability in reported prevalence rates (Fazel et al., 2005; Hynie, 2018; Murray et al., 2010; Turrini et al., 2017). Moreover, even without formal diagnoses, refugees are likely to experience high levels of distress often due to environmental or structural factors (Goodkind, 2005; Papadopoulos, 2007; Wells et al., 2016). World Health Organization's humanitarian committee, The Inter-Agency Standing Committee (IASC), stressed that refugees experience high survival and basic physical and psychological needs (e.g., food, shelter, safety, coping, and psychosocial wellbeing), and they recommended providers and researchers to take a holistic approach rather than focusing on treating specific mental disorders (2007).

Psychosocial Intervention Studies for Refugees and Previous Reviews

Psychosocial interventions have demonstrated promise for refugees (e.g., Gattinara & Pallini, 2017; McFarlane & Kaplan, 2012; Naseh et al., 2019; Thompson et al., 2018; Tribe et al., 2017; Turrini et al., 2017). Several reviews of randomized control trials (RCTs) have consistently found that targeted interventions were more efficacious than inactive controls (Thompson et al., 2018; Turrini et al., 2019); however, no

significant differences have been found when the interventions were compared to other active treatments (Nosè et al., 2017; Thompson et al., 2018; Turrini et al., 2017). Furthermore, among the most commonly evaluated interventions, including cognitive behavioral therapy (CBT), narrative exposure therapy (NET), and eye movement desensitization and reprocessing therapy (EMDR), mixed findings on efficacy were presented where several reviews found that NET interventions showed the most promising improvement compared to other types of treatment while others did not (Nosè et al., 2017; Thompson et al., 2018; Tribe et al., 2016; for exceptions, see Turrini et al., 2019; Naseh et al., 2019). Other intervention types that showed strong efficacy included CBT (Murray et al., 2010) and trauma-focused CBT (Turrini et al., 2019). In addition, other types of interventions like common elements treatment approach (CETA), interpersonal psychotherapy, and other multimodal/multidisciplinary interventions have only been studied in one meta-analysis; results concluded overall efficacy in treatment conditions compared to controls, but details were not presented due to the small sample size (Turrini et al., 2019).

Although refugee psychosocial treatment efficacy is supported in recent reviews, there are crucial gaps that need to be filled. Firstly, only one review has focused on refugee populations from Asia: Nakeyar and Frewen (2016) conducted a systematic review and found NET to be the most promising intervention type among a broad range of treatments for Iraqi, Kurdish, and Syrian refugees from the 2011 Syrian Civil War. Another meta-analysis supported treatment efficacy and effectiveness for Asian Americans, however, it did not specifically evaluate interventions for forced migrants (Huey & Tilley, 2018). Therefore, treatments focused on refugees from Asia have not

been evaluated extensively. Secondly, most published reviews (e.g., Naseh et al., 2019; Thompson et al., 2018; Turrini et al., 2019) only included RCTs, which therefore omit many single-intervention studies and non-RCTs (NRCTs). Tribe and colleagues (2016) examined 40 RCTs and observational studies in their review; however, no quantitative analysis was conducted. Moreover, many reviews only included studies on a specific type of intervention, such as trauma-focused treatments, EMDR, or a specific mental health diagnosis, such as depression, or PTSD (e.g., Gattinara & Pallini, 2017; Naseh et al., 2019; Nicholl & Thompson, 2004; Thompson et al., 2018; Turrini et al., 2017). Lastly, there is a significant lack of evidence regarding cultural appropriateness in treatments for refugees.

Cultural Appropriateness in Interventions

Cultural tailoring in psychosocial interventions improves treatment efficacy and effectiveness (e.g., Griner & Smith, 2006; Hall et al., 2016; Harper Shehadeh et al., 2016; Huey & Tilley, 2018). Interventions that are designed for and conducted with one specific ethnic group have shown larger effect sizes than interventions conducted with multi-ethnic groups (Griner & Smith, 2006; Huey & Tilley, 2018; Murray et al., 2010). One meta-analysis also showed that more extensively culturally tailored interventions had larger effect sizes than those with fewer cultural tailoring components (Harper Shehadeh et al., 2016). Commonly tailored components include language translation, culturally appropriate metaphors, content adaptations based on cultural values, and modifications to treatment delivery and contexts (Chu & Leino, 2017; Griner & Smith, 2006; Hall et al., 2016; Harper Shehadeh et al., 2016; Naseh et al., 2019). Although existing reviews on cultural tailoring are extensive, most involved voluntary migrants in Western countries

and few specifically evaluated interventions for forced migrants. This is a crucial gap in knowledge because forced migrants and voluntary migrants have drastically different experiences and backgrounds related to the pre-, during, and post-migration process (Pernice & Brook, 1994; Rasmussen et al., 2012).

It has been shown in individual studies that refugee interventions are tailored for their participants' cultural backgrounds and experiences (e.g., Kinzie, 1988; Kananian, 2017; Otto, 2006). However, to our knowledge, only two existing reviews assessed cultural tailoring in interventions for refugees, none of which are specifically for refugees from Asia. A recent systematic review by Naseh and colleagues (2019) focused on RCTs for refugees with PTSD (n = 11), and they concluded the most commonly tailored components to be modifications in providers and settings, changes in content, and assessment translation/adaptation. The other review by Murray and colleagues (2010) provided broad examples of how 12 studies addressed cultural backgrounds in their interventions for refugee adults, families, and/or children, such as collaborating or consulting with community members and incorporating culture into their intervention development. These two reviews have been helpful as an initial effort to understand cultural appropriateness in refugee interventions, however, a detailed synthesis of cultural tailoring with a larger sample of Asia-origin refugees is necessary.

Two frameworks can be used to describe cultural tailoring in refugee interventions. Cardemil (2010) summarized cultural tailoring into three main areas: a) program structure and program content, b) program delivery, and c) intervention providers. More specifically, program structure refers to the format of intervention, including treatment length, treatment components (e.g., homework), and the order of

symptoms/skills to target. Program content refers to program materials, such as assessments, program manuals, activities, and examples provided by interventionists. Program delivery is the process of the interventions being delivered, such as interventionists' sensitivity to clients' busy schedules and delivering using a more collaborative approach. Lastly, intervention providers involve using cultural competency, cultural knowledge, and experience in working with a particular group. Jongen and colleagues (2017) conceptualized cultural tailoring into three areas: a) community-focused, b) culture-focused, and c) language-focused. Specifically, community-focused strategies are to involve community partners, participation, spaces, networks, and media in program development and/or implementation. Culture-focused strategies involve inclusion of cultural values, traditions, and religions. Language-focused strategies can include full language adaptation, partial language adaptation, and translation of written and/or audiovisual materials. The current review conceptualizes cultural tailoring using a combined model from the two frameworks, which is described in detail later.

Rationale for the Current Study

Previous research suggests that psychosocial interventions for refugees are efficacious and effective, and that cultural tailoring improves treatment outcomes, yet, these are unknown when examining a broad range of study types (i.e., both RCTs and NRCTs), treatment types (e.g., CBT, NET), psychosocial symptoms, and specifically for Asia-origin refugees. The present review included both RCT and NRCT studies to provide a more comprehensive overview regarding treatment efficacy as well as effectiveness. Moreover, broad psychosocial outcomes instead of specific mental

disorders were explored as refugees often experience high distress and that those who report sub-clinical symptoms have been largely underrepresented in research.

Refugees from Asia are the focus of this project as they represent the majority of refugees globally, and, although there are important distinctions among and within populations, refugees originated from Asia share some commonalities in cultural values and practices that may impact their experiences in interventions in similar ways. For example, the value of collectivism which places an emphasis on in-group harmony is practiced in many Asian cultures (Triandis et al., 1988), and this may make one-on-one psychotherapy, which often promotes individuality, less appropriate. Symptom presentations may also be different in this population which complicates treatment, such as presenting with more somatic symptoms than emotional or cognitive complaints such as headache, fatigue, insomnia (Kalibatseva & Leong, 2014). In addition, refugees from Asian countries are more likely to be racialized in similar intersectional ways and share similar post-migration challenges such as unemployment, discrimination, and limited English proficiency (Kim, 2016). Lastly, structural barriers may interfere with treatment in similar ways for refugees from Asia including limited linguistically and culturally appropriate providers and treatments, lack of affordable services, and high mental illness stigma (Huang et al., 2016; Kim & Zane, 2016; Leong & Lau, 2001; Li, 2012; Maeshima & Parent, 2020; Masuda & Boone, 2011; Yang et al., 2020; Zane & Yeh, 2002).

The purpose of the current study is twofold. First, we aim to synthesize research literature on psychosocial interventions for adult refugees from Asia, examining different outcomes separately. We also examine potential moderators of efficacy, including study type, intervention type, intervention modality, cultural tailoring, participant

characteristics, and study characteristics for each psychosocial outcome. Second, recognizing that the unique challenges faced by this population make having culturally appropriate and efficacious/effective treatments crucial, we provide a detailed narrative synthesis of cultural tailoring used to guide practitioners and intervention developers.

Method

Article Search

The initial search was conducted in September 2019 in the following databases: PsycINFO, PubMed, Cumulative Index of Nursing and Allied Health Literature (CINAHL), Web of Science, Cochrane Central Register of Controlled Trials (CENTRAL), PTSDpubs (formerly Published International Literature of Traumatic Stress [PILOTS]), World Health Organization - Global Index of Medicus, Education Resources Information Center (ERIC), and ProQuest Dissertations and Theses. Variations of search terms representing intervention types (e.g., psychother*, intervention*, counsel*) and population of interest (e.g., refugee*, migrant,* Asia*) were used. Two additional searches were conducted in the same databases to include more recently published articles in January 2021 and March 2022.

Inclusion and Exclusion Criteria

Studies that met the following criteria were included in this review: 1) targeted at refugees, IDPs, asylum seekers, or asylees), 2) more than 50% of participants came from Asia or included sub-group analyses for participants from Asia, 3) aimed to improve psychosocial symptoms, 4) included pre- and post- quantitative outcomes on psychosocial measures, 5) published between January 1980 to March 2022, 6) published in English, and 7) adult-focused interventions. Theses and dissertations that met the

above inclusion criteria were also included. This review only included adult interventions because children- or adolescent interventions are often school-based and different in structure and content than adult interventions (Brown et al., 2017; Sullivan & Simonson, 2016).

Articles that contained any of the following were excluded from this review: 1) interventions not specifically targeting at refugees, 2) fewer than 50% participants were refugees from Asia or did not report sub-group analyses for refugees from Asia, 3) review articles, 4) interventions' primary aims were not to improve psychosocial improvement, 5) interventions did not include both pre- and post- quantitative psychosocial outcomes, 6) published in another language than English, or 7) interventions were designed for children, adolescents, or family units.

Coding

Once articles were screened for eligibility according the inclusion and exclusion criteria, the following information were extracted from each included article: basic article information, participant characteristics, treatment characteristics, psychosocial symptom measures, other outcomes that were reported, types of cultural tailoring, and outcome statistics.

Combining two frameworks (Cardemil, 2010; Jongen et al., 2017), cultural tailoring was coded into four categories (Table 1): 1) Language – conducting the assessment and/or intervention in participants' native language or involving interpreters, 2) Intervention Providers – ethnically congruent providers during assessment and/or treatment delivery, 3) Community – involving the ethnic or cultural community in recruitment, intervention development, or implementation, or intervention conducted in a

community setting, and 4) Culture – tailoring treatment content (i.e., actual intervention content) or treatment/delivery context (i.e., how or when the intervention was delivered) based on participants' cultural values, beliefs, or traditions. In-language providers and ethnically matched providers were coded separately because it is possible that a provider speaks the same language as refugee participants but come from different ethnic backgrounds. Each sub-category was coded using binomial responses.

Procedure

The initial search was conducted by graduate-level researchers. After combining included articles and deleting duplicates, the screening phase was conducted by a team of trained graduate and undergraduate students. The team first screened all articles by titles and abstracts and included relevant articles based on the inclusion and exclusion criteria. Then the team screened the included articles by reading the full text of the articles to further assess eligibility. During full-text screening, the team also reviewed the included articles' references for other relevant studies. Reliability for the screening phase was ensured by randomly selecting 20% of the articles and double-coding the selected articles at the beginning and middle of the screening phase. Discrepancies were discussed until agreements were reached and Cohen's *k* (Cohen, 1960) reached 80% in further verification.

After screening, coding was completed by a smaller team using codebooks developed by the first author. Most coding questions were binomial, and some involved data entry. The coding team met weekly to discuss ongoing concerns and disagreements. The first author double-coded every article, and the team discussed any discrepancies until agreements were reached.

Analysis

Quantitative and qualitative analyses were conducted in the present review. Quantitative (i.e., meta-analysis) was performed with RCTs. NRCTs were excluded from quantitative synthesis because aggregating pre- and post- changes without comparing to a control group introduces significant bias and confounding variables (Cuijpers et al., 2016). To best evaluate all existing evidence involving quantitative data, results from NRCTs were synthesized qualitatively.

Effect Size Computation

Individual effect sizes were first computed into standardized mean difference (SMD) using the Cohen's *d* for every study's each outcome. The computation calculated between-group differences while considering their baseline effects (Morris & DeShon, 2002): $SMD = Mean\ Difference/SD_{Pooled\ Pre}$; $Mean\ Difference = (M_{Treatment\ Post} - M_{Treatment\ Pre}) - (M_{Control\ Post} - M_{Control\ Pre})$. To correct for small-study bias ($n < 20$) with Cohen's *d*, effect sizes were transformed into Hedges' *g,* which were used in the final analyses: $g = d * J$; $J = 1 - 3/(((n_{Treatment\ Pre} + n_{Control\ Pre} - 2)*4)-1)$.

When standard deviations (*SDs)* were not reported in the raw data, the following formulas were used to transform data: from confidence intervals to *SD*: $SD = \sqrt{N}*(Upper\ Limit - Lower\ Limit)/3.92$; from standard error to *SD*: $SD = \sqrt{Nx} * SE$. Both pre-post and pre-follow-up changes were computed. If follow-up data was reported at multiple timepoints, the last follow-up datapoint was used. For interventions that had multiple intervention groups, the group which the authors predicted to produce bigger effect was selected as the treatment group in meta-analyses. When multiple comparison groups were reported, the waitlist or no-treatment control group was selected as the control group. In

addition, when insufficient data were reported, authors were contacted. These initial calculations and transformations were conducted in *Microsoft Excel* (Microsoft Corporation, 2018) and subsequent analyses were conducted in *R* using the {metafor} package (Viechtbauer, 2010).

Separate meta-analyses were conducted for each outcome category, and the final outcome categories were determined based on available data. When one study reported more than one outcome category, all outcome categories were reported when available. For example, if one study reported both depressive and anxiety symptoms, both outcomes were analyzed in their respective outcome categories. When one outcome category (e.g., depression) was measured using multiple scales within the same study (e.g., HSCL and PHQ-9), results from only one measure were aggregated in the meta-analyses; each decision was made according to a pre-determined hierarchy: 1) a primary measure was indicated by the author(s), 2) the scale involved a structured or semi-structured interview, 3) an in-language and/or population-validated self-report measure, 4) a translated self-report measure, 5) a longer self-reported measures, and 6) a brief self-reported measure.

Aggregating SMDs

When aggregating *SMDs*, each effect size was weighted based on their inverted variance. Random effects models were used when summarizing and reporting pooled effect sizes because participant and intervention heterogeneity were expected. The following effect-size cutoffs were used for Hedge's *g:* 0.2 for small effect, 0.5 for medium effect, and 0.8 for large effect (Cohen, 1988; Hedges & Olkin, 1985). To test for between-study heterogeneity, restricted maximum likelihood (REML) estimators, $\tau\hat{}2_{REML}$, Cochran's Q, and I^2 were used as recommended variance measures, although the

REML estimators may underestimate effects (Novianti et al., 2014; Veroniki et al., 2016; Viechtbauer, 2005). *Q* represents statistical heterogeneity and is highly dependent on the number of studies included; when the *p* value is significant, *Q* value suggests heterogeneity. I^2 represents variance not due to chance and is independent of the number of studies included; suggested cutoffs for I^2 are: 25% for low, 50% for moderate, and 75% for high heterogeneity (Higgins et al., 2003). When high statistical heterogeneity is detected, studies should not be aggregated due to their large differences.

Meta-regression

Subgroup differences were explored using meta-regression via the {metafor} package. All analyses were conducted based on findings from the previous literature as well as for exploratory purposes. Meta-regression was conducted when a sample size of greater than ten studies was available (Higgins & Thompson, 2004).

Power analyses were performed *a priori* as well as post-hoc using *R*'s *power.analysis* function in the {dmetar} package. An 80% of power was used to determine sufficient power for pooled effect sizes. For power in subgroup analyses, *power.analysis.subgroup* within the same package was used, and a minimum of effect-size difference was provided for sufficient power from this analysis.

Publication Bias

Publication bias can be a serious concern in reviews because studies with significant findings and larger sample sizes are more likely to get published (Ahmed et al., 2012; Sutton et al., 2000). In the present review, publication bias and small-effect bias (i.e., studies with smaller sample sizes are less likely to get published) were assessed using funnel plot and Egger's regression. Small-effect bias is likely when a funnel plot is

not distributed equally on both sides. Different versions of the funnel plot exist, and the present review plotted estimated effect sizes on the x-axis and standard errors on the y-axis. Egger's regression is a test on linearity between standard error and inverse variance and was used to further test publication bias; a significant *p* value indicates suggested publication bias (Egger et al., 1997).

Assessment of Study Quality

Risk of bias was assessed in RCT and NRCT studies separately. For RCTs, the Revised Cochrane Risk of Bias Tool for Randomized Control Trials was used, and for NRCTs, the Cochrane Risk of Bias in Non-randomized Studies of Interventions (RoB2; Sterne et al., 2016; ROBINS-I; Sterne et al., 2019) was used. In RCTs, studies were characterized as "low risk," "some concerns," "high risk," and "no information" on five domains: randomization, deviations from intended interventions, missing data, outcome measure, and selection of reported result. In NRCTs, studies were characterized as "low risk," "moderate risk," "serious risk," "critical risk," and "no information" on seven domains: confounding, selection of participants into the study, classification of interventions, deviations from intended interventions, missing data, measurement of outcomes, and selection of the reported result. Studies with high risk of bias were excluded from meta-analyses and included in the narrative reviews.

Results

Search Results

A final total of 31 articles were included in the synthesis following title, abstract, and full-text screening (Figure 1**)**. Specifically, following the initial search in September 2019, 23,652 articles were screened for eligibility; two more searches were subsequently

conducted in January 2021 and March 2022 to incorporate more recently published studies. Of note, six studies, while meeting the inclusion criteria, were excluded due to being pilot interventions for later published studies that were included in this review.

Study Characteristics

Overview

Table 2 summarized detailed study characteristics. The majority of the articles were published as journal articles (93.55%) and 6.45% were unpublished dissertations. A mix of study designs were present including randomized control trial (RCT), quasi-RCT, and non-RCT (NRCT). RCTs were defined as studies that involved random assignment. Non-RCTs were defined as studies that did not report random assignment. Quasi-RCTs were defined as when the authors claimed the study to be quasi-RCT and/or involved partial or no random assignment. Some quasi-RCTs were re-categorized as RCTs and some as non-RCTs. More specifically, Jeon and colleagues (2020) did not report a randomization in their group assignment despite presenting on two treatment groups, and thus this study was treated as NRCT. Another quasi-RCT was treated as RCT in this review: Shaw and colleagues (2019) randomized one of their two control groups, but only the randomized control group was included in this review. Three quasi-RCTs were treated as NRCTs due to their methodological deviance from a RCT design: Lehnung and colleagues (2017) allowed three participants to switch groups due to “personal reasons” post-randomization; Boemel and Rozée (1992) placed five participants who had refused the active intervention in their waitlist control group; Mitschke and colleagues (2013) were unable to fully randomize their participants because their treatment condition

required knitting skills. This re-categorization resulted in a final of 20 RCTs (64.52%) and 11 NRCTs (35.48%).

Of all studies, 16 were group interventions (51.61%), 14 were individual interventions (45.16%), and one conducted both group and individual interventions (3.23%). RCTs were more likely to involve individual than group interventions (n = 12 vs. 7 respectively), and NRCTs were more likely to involve group than individual interventions (n = 9 vs. 2 respectively). Moreover, geographic locations of the interventions were assessed: the majority of the interventions were conducted in Western or developed/industrialized countries (96.77%), with 45.16% in the U.S. All interventions were conducted in-person, and some interventions also included handouts (Berkson et al., 2014), recorded videos (Acarturk et al., 2022a; Berkson, 2014; White-Baughan, 1990), and self-help guide (Acarturk et al., 2022a).

All studies stated that they tailored their interventions to best serve participants' refugee backgrounds. Most studies focused their interventions on improving refugees' trauma background and helping alleviate their stress and symptoms. Other studies focused on helping refugees adjust to the resettlement country, such as building community resources and connections (2020) or teaching financial literacy (Mitschke et al., 2013). Studies also directly referred participants to community resources and/or provided case management support.

Intervention Types

As expected, a wide variety of intervention types were observed, including both traditional psychotherapy treatments (e.g., cognitive behavioral therapy, narrative exposure therapy) as well as community-based and multimodal interventions.

CBT. Twenty-percent of studies utilized cognitive behavioral therapy (CBT) protocols ($n_{Individual} = 4$, $n_{Group} = 2$); of those, three followed culturally adapted CBT (CA-CBT) protocols (Hinton, et al., 2005; Kananian et al., 2020; Shaw et al., 2018), two involved both CBT and medications (Hinton, 2005; Otto, 2003), one utilized both CBT and problem management training (i.e., CA-CBT+; Boemel & Rozée, 1992), and one was described as somatically-focused CA-CBT (Shaw et al., 2018). Two other studies utilized CBT and acceptance and commitment therapy (ACT) strategies (Acarturk et al., 2022a; 2022b). Another similar intervention was Alsmadi and colleagues' treatment (2018) which offered both psychoeducation on mood management, relaxation skills, and somatic and cognitive symptoms, as well as Ginkgo biloba, a type of traditional Chinese medicine.

EMDR. The second most commonly used evidence- and protocol-based treatment was eye movement desensitization reprocessing (EMDR; 12.9%), with half individual and half group interventions. Lehnung and colleagues' NRCT (2017) and ter Heide and colleagues' RCT (2011) were pilot studies, and Acarturk and colleagues' RCT of individual EMDR intervention (2016) was developed following their successful pilot in 2015.

Clinic Treatment. Thirteen-percent of studies evaluated outcomes of clinic treatment, ranging from six months to one year ($n_{Individual} = 3$, $n_{Group} = 1$). Available clinic services included integrative psychotherapy, psychotropic medications, counseling/social support, evaluations, education, and case management. Of these, 75% of clinic treatments offered integrative/comprehensive services including psychotherapy, case management,

medications, and social support (Kinzie et al., 2012; Mollica et al., 1990; Northwood et al., 2020), and 25% offered only psychotherapy and medications (Buhmann et al., 2016).

Integrative/Transdiagnostic. Integrative or transdiagnostic interventions were also often utilized (Bolton et al., 2014; Danner et al.,, 2007; Drožđek et al., 2013; Tay et al., 2022). Drožđek and colleagues (2013) conducted their RCT following a successful pilot in 2010 (Drožđek & Bolwerk, 2010); their intervention offered both psychotherapy and nonverbal therapy such as psychomotor therapy, art therapy, and music therapy. Danner and colleagues' integrative intervention (2007) with Laotian/Hmong refugees was based on narrative exposure therapy (NET) techniques, whereas Tay and colleagues' integrative intervention (2022) with Burmese refugees drew from the Adaptation and Development After Persecution and Trauma (ADAPT) model, which focuses on common post-migration stressors within refugees. Similar to integrative interventions, one study utilized holistic treatment and involved health promotion on nutrition, physical activity, stress management, sleep hygiene, and healthcare practitioner-patient communication (Berkson et al., 2014).

NET. 6.45% of studies followed individual NET protocols (Hijazi et al., 2014; Stenmark et al., 2013). Differences in treatment length were found between the two studies: Stenmark and colleagues' NET lasted 90 minutes per session for a total of ten sessions, and Hijazi and colleagues' NET lasted 60-90 minutes per session for a total of three sessions.

Community-based/Multimodal. Other studies described interventions that were community-based, multimodal, or interventions that deviated from traditional psychotherapy (32.26%).

Goodkind and colleagues' RCT (2020) of Refugee Wellbeing Project (RWP) was conducted following their successful pilot in 2005 (Goodkind, 2005). The RWP was a cross-cultural advocacy- and strengths-based intervention which allowed cultural and generational exchange between college students and refugees (i.e., Learning Circles) and provided opportunities for them to collaboratively locate community resources (i.e., Advocacy). Similar to Goodkind and colleagues' Advocacy component, several studies also provided case management as part of their interventions, including creating a community resource directory (White-Baughan, 1990), providing referrals to local resources following home visits (Fox et al., 1997), and assisting with medical and social needs in three of the four clinic treatment interventions (Kinzie et al., 2012; Mollica et al., 1990; Northwood et al., 2020). Another unique community-based intervention was a Financial Literacy intervention which presented various topics on financial literacy, such as the U.S. banking system, financial stability, and creating financial goals (Mitschke et al., 2013); a Financial Literacy Plus group was also a part of the program where women with knitting skills were invited to learn about industry standards for knitted scarfs and were compensated for their products.

Movement-based. Although many interventions involved mindfulness exercises in their treatment, only one intervention was completely movement-based. Stade and colleagues' Basic Body Awareness Therapy (BBAT; Stade et al., 2015) was a whole-body movement therapy which promoted posture, coordination, breathing, and awareness exercises. Unlike Stade and colleagues' BBAT which was only movement-focused, Luy's Mindfulness-based Group Counseling (2013) involved movement-based exercises such as meditation, yoga, and tai chi, as well as psychoeducation.

Participant Characteristics

Of all included studies, sample size ranged from nine to 547, resulting in a total of 3,082 participants. 29 studies (93.55%) reported the mean age of their participants (M_{age} = 40.45 years, SD_{age} = 8.01), and 90.32% of studies reported a range of M_{age} = 30s-50s. Only one study included a younger participant population with a mean age of 22.1 years (Kananian et al., 2020). The majority of the studies (67.74%) included female and male participants, and of those, 81.82% had more female than male participants. 25.81% of studies included only female participants, and 6.45% included only male participants. Regarding visa status, 87.1% described their participants as refugees, and 12.9% indicated including both refugees and asylum seekers. Countries of origin (COO) were mostly from five countries: Iraq (29.03%), Afghanistan (25.81%), Cambodia (25.81%), Syria (19.35%), and Iran (16.13%). More than half studies (58.06%) targeted participants from one specific COO, including Cambodia (Berkson et al., 2014; Boemel & Rozée, 1992; Hinton et al., 2005; Otto et al., 2003; White-Baughan, 1990), Syria (Acarturk, et al., 2022b; Acarturk et al., 2016; Yurtsever et al., 2018), Burma/Myanmar (Bolton et al., 2014; Northwood et al., 2020; Tay et al., 2022), Iraq (Alsmadi et al., 2018; Hijazi et al., 2014), North Korea (Jeon et al., 2020; Kim & Atteraya, 2015), Laos (Danner et al., 2007), Bhutan (Mitschke, Aguirre, & Sharma, 2013), and Afghanistan (Shaw, Ward, & Pillai, 2019). Few studies (29.03%) reported their participants' specific ethnicities. The length of participants' resettlement varied greatly across studies: two studies included participants who had resettled within one year, four studies with those resettled one to three years, two studies within three to five years, and nine studies included either those who had resettled more than five years or reported a range of more than five years. It is

worth noting that two studies reported a large range of 0-35 years (Bolton et al., 2014) and 1-13 years (Kinzie et al., 2012). Of the 41.94% studies that reported an average resettlement length, the average resettlement length was 6.32 years (*SD* = 4.88).

Assessment of Study Quality

We followed Cochrane's protocols (RoB2; Sterne et al., 2019, p. 2; ROBINS-I; Sterne et al., 2016) to assess study quality of RCTs and NRCTs, with one exception. One study (Buhmann et al., 2016) which would receive "some concerns" on measure of outcome was coded as "high risk." In this study, some participants assigned to the treatment group did not receive all components of the intervention, and some participants not assigned to the treatment group received treatment. In addition, the authors used intention-to-treat analyses and did not exclude participants who deviated from their assignment, which all contribute to significant risk of bias on outcome measurement instead of some risk.

RCTs

RCT studies overall had moderate risk of bias, and some exceptions were observed (see Figures 2 and 3). Three of 11 RCT studies (9.1%) were rated as high risk of bias and were excluded from meta-analyses. Most studies (71.43%) reported random allocation sequence (e.g., coin flipping, randomly computer-generated). Group assignment was concealed in seven studies (35%), and the rest did not report concealment details. Otto and colleagues' study (2003) was rated as high risk and excluded in the meta-analyses because their random assignment failed to create equal groups, which deviated from other studies that created balanced intervention groups. In addition, due to the nature of psychosocial interventions, it was impossible to conceal interventions from

participants, and therefore “some concerns” were coded for most studies regarding bias due to deviations from intended interventions, though two studies (10%) reported concealment from providers delivering the interventions. Half of the studies (50%) reported missing data, and of those, two studies’ missing data were likely dependent on the intervention and thus coded as high risk of bias and excluded from the final meta-analyses (Buhmann et al., 2016; ter Heide et al., 2011). Appropriateness of outcome measurement was evaluated and all but one were coded as “some concerns” as it was expected that the knowledge of expected treatment outcomes may impact results on self-reported measures. Buhmann and colleagues’ study (2016) was coded as high risk of bias on outcome measurement due to using intention-to-treatment analyses while multiple participants deviated from their assigned conditions. Lastly, selection of reported results was assessed, however, evidence was unavailable to assess whether a predetermined analytic plan was created and strictly followed.

NRCTs

Overall, NRCT studies also had moderate risk of bias, except for one which had high risk of bias (see Figures 4 and 5). All studies had moderate risk of bias due to confounding variables because psychosocial studies were unable to predict and control all confounding variables. All but one received low risk of bias for selection of participants; Luy (2013) received moderate risk because their data was archival and therefore the start and end of intervention did not coincide among participants. All studies received low risk on classification of interventions. Of note, Lehung and colleagues (2017) stated that three participants initially were assigned to their control group but switched to the treatment group due to “personal reasons;” this was not coded as a high risk of bias because this

decision appeared to be made prior to the start of the intervention. Regarding bias due to deviations from intended interventions, 90.91% of studies had moderate risk because no study reported balancing important co-interventions, such as participants' medication use outside of intervention; Stade and colleagues (2015) was coded as high risk of bias for deviations from intended interventions because less than 50% attended fewer than five of their 13 sessions, which resulted in a high likelihood of outcomes being influenced by treatment adherence. No study was suspected of risk of missing data. On measurement of outcomes, all studies received moderate risk because participants were aware of the interventions received, and therefore their responses could have been affected by the acknowledgement of expected intervention outcomes. Lastly, selection of reported results was assessed, however, evidence was unavailable to assess whether a predetermined analytic plan was created and strictly followed.

Meta-Analysis of RCTs' Outcomes

RCTs' outcomes were aggregated by categories, including depressive symptoms, posttraumatic stress (PTS), anxiety, somatic symptoms, well-being, and general psychopathology/functioning. Of note, not all reported data from the above categories were included in the meta-analysis. For example, Hinton and colleagues' study (2005) was excluded in the depressive symptoms aggregation although depression was measured because sub-scale scores for depression were not available, which was not resolved after contacting the authors.

Depressive Symptoms

Pre-post. Across 14 available studies that reported sufficient data on depressive symptoms, initial weighted average effect size for pre-post-intervention effect was *SMD*

= -0.55. However, high heterogeneity was observed (I^2 = 91.28%), and therefore outlier and sensitivity analyses were conducted to detect possible sources of heterogeneity. Following outlier and leave-one-out analyses, two studies (Acarturk et al., 2016; Buhmann et al., 2016) were detected as contributing to the most heterogeneity and were excluded. The final pooled effect size was *SMD* = -0.42 with moderate heterogeneity (I^2 = 67.4%; $Q_{(11)}$ = 35.05, $p < 0.001$). This suggests that intervention treatments more efficaciously improved depressive symptoms than control groups at post-intervention with a medium effect (Cohen, 1988; Hedges, 1985). With the resulted effect and 13 studies, a power of greater than 80% was reached. Effect sizes from included studies ranged from *SMD* = -1.49 to 0; details are reported in Figure 6. Publication bias was evaluated using funnel plot and Egger's test to detect small-study bias. Balanced distribution (see Figure 7) as well as a non-significant Egger's test (t = -1.27, p = 0.23) suggested that publication bias was unlikely.

Pre-follow-up. Five studies reported depressive outcomes at follow-up, and the pooled effect size was *SMD* = -0.23, suggesting that improvement remained to be more significant for the treatment groups than controls and that the effects decreased from post-intervention. However, high heterogeneity (I^2 > 90%) was observed even after sensitivity tests, and therefore this aggregated effect size cannot be meaningfully interpreted.

Posttraumatic Stress (PTS)

Pre-post. Thirteen RCTs were included to aggregate PTS improvement at post-intervention. However, high heterogeneity was observed even after removing two studies during sensitivity tests (I^2 = 83.84%; $Q_{(10)}$ = 85.60, $p < .001$) for a pooled effect size of

SMD = -0.56. In addition, publication bias from the unbalanced funnel plot and Egger's test (t = -3.34, p = 0.009) was high, indicating a likely small-study effect. All indicators suggest that aggregated pre-post PTS effect size cannot be meaningfully interpreted.

Pre-follow-up. An initial seven studies were included to detect aggregated PTS improvement at post-intervention. A large pooled effect size of *SMD* = -0.82 with a high heterogeneity of I^2 = 87.56% were found. Following sensitivity tests, one study was removed (i.e., Acarturk et al., 2016). The resulting weighted average effect size was moderate with moderate heterogeneity: *SMD* = -0.52 (I^2 = 53.42%; $Q_{(5)}$ = 8.57, p = 0.07). Therefore, treatment groups were observed to have more significant improvements than control groups at follow-up (see Figure 8). Power analysis indicated a sufficient power of greater than 80%. Publication bias was also low as observed from the equally distributed funnel plot (Figure 9) and non-significant Egger's test (t = 0.23, p = 0.83).

Anxiety, Somatic Symptoms, Well-being, General Psychopathology/Functioning

The following outcomes either resulted in high heterogeneity that could not be resolved with sensitivity tests or involved a limited sample size and could not be meaningfully interpreted. A brief report of findings is presented below.

For anxiety symptoms at post-intervention (n = 6), treatment groups showed a larger pooled effect than the control groups, however, this pooled effect showed significant statistical heterogeneity that could not be resolved with sensitivity tests: *SMD* = -0.83 (I^2 = 93.4%; $Q_{(5)}$ = 36.23, p < 0.0001).

Three studies reported data on somatic symptoms at post-intervention, and the resulting pooled effect size was *SMD* = -0.81 (I^2 = 78.25%; $Q_{(2)}$ = 7.59, p = 0.02). This

high heterogeneity was again unable to be resolved and therefore the meta-analysis cannot be meaningfully interpreted.

Only two studies measured and reported outcomes on well-being at post-intervention and follow-up. At post-intervention, average pooled effect size was *SMD* = 0.35 (I^2 = 73.45%; $Q_{(1)}$ = 3.77, p = 0.05). Of note, the positive effect size indicates improvement on well-being. At follow-up, two studies suggested that this positive effect remained: *SMD* = 0.38 (I^2 = 75.5%; $Q_{(1)}$ = 4.08, p = 0.04). However, high heterogeneity along with a power of 30% due to the small sample size makes the aggregated effects uninterpretable for well-being outcomes.

Lastly, two studies reported post-intervention outcomes on general psychopathology/general functioning. Resulting pooled effect size was large with high heterogeneity, which makes this meta-analysis not meaningfully significant: *SMD* = -1.55 (I^2 = 94.83%; $Q_{(1)}$ = 19.36, $p < 0.0001$).

Meta-regression

Subgroup analyses were conducted using meta-regression. According to *a priori* power analysis, a minimum *SMD* difference of 0.54 between groups is needed for sufficient power. Meta-regression analyses required ten studies to conduct subgroup analyses, and this was only available for one outcome, depressive symptoms (Higgins & Thompson, 2004). Twelve studies were aggregated for an effect size of *SMD* = -0.42 on post-intervention depressive outcomes. All moderation categories were predetermined according to the literature and for exploratory purposes.

Significant moderations were observed for control group type, intervention modality, and participant characteristics. Only inactive controls (no-treatment, waitlist,

and treatment-as-usual controls) were available in the current review, and therefore meta-regression was conducted to explore whether control groups that involved some treatment (i.e., treatment-as-usual control) are different from controls that did not involve any treatment at all (e.g., waitlist control, no-treatment control). Results revealed that when compared with some-treatment controls (*SMD* = -0.12), the main intervention had a significantly bigger pooled effect size when compared with no-treatment controls (*SMD* = -0.60). This accounted for 50.58% of the heterogeneity ($QM_{(1)}$ = 4.14, p = 0.04).

The second significant moderation effect was intervention modality. Results indicated that group interventions (*SMD* = -0.83) showed a larger pooled effect size than individual interventions (*SMD* = -0.26; $QM_{(1)}$ = 4.91, p = 0.03; R^2 = 29.69%).

Lastly, differences in eligibility criteria were compared. Studies with an eligibility criterion of having a formal diagnosis or meeting criteria for a formal diagnosis were compared to studies that required meeting a certain score on measures as well as studies that did not have any requirement for symptom presentations. Results showed that studies that required meeting score thresholds had the largest pooled effect size (*SMD* = -0.67), then required a diagnosis/meeting diagnostic criteria (*SMD* = -0.36), then no symptom requirement (*SMD* = -0.17). Having diagnosis and symptoms accounted for a large amount of heterogeneity (R^2 = 98.96%; $QM_{(2)}$ = 17.82, $p < 0.001$).

Other moderations conducted were not statistically significant or had a small sample size (details reported in Table 3). Notably, CA-CBTs had the largest pooled effect size than other types of treatment. For cultural tailoring, those with more cultural tailoring showed a larger pooled effect size, although not statistically significant. In addition, interventions that targeted participants from one specific COO had a larger

pooled effect size than those that included participants from multiple COOs, though this effect also did not reach statistical significance.

Excluded Studies

Several RCTs were not included in the meta-analyses due to limited available data as well as being excluded as outliers. Overall, all excluded studies indicated significant between-group differences. A specific narrative review is provided below.

Hinton and colleagues' (2005) first published CA-CBT treatment successfully improved participants' depressive, PTSD, and anxiety symptoms significantly more than the control group. Goodkind and colleagues' community-based Refugee Wellbeing Project (2022) was reported to have improved depressive symptoms and anxiety at post-intervention and follow-up, and these differences were more significant than in their waitlist control group; some ethnic differences were reported among Iraqis and Afghans. Acarturk and colleagues (2016) found that their EMDR treatment group experienced a more significant decrease in depression and PTSD than the control group at both post-intervention and follow-up. Acarturk and colleagues' Self-help Plus (2022a) treatment resulted in significant between-group differences in psychological distress at post-intervention and in depressive symptoms, self-identified psychological outcomes, and quality of life at follow-up.

Narrative Review of NRCTs' Outcomes

NRCTs' outcomes were aggregated by categories, including posttraumatic stress (PTS), depressive symptoms, anxiety, general psychopathology/functioning/impairment, well-being/quality of life, and somatic symptoms. Below presents a qualitative review of the 11 NRCT studies.

Depressive Symptoms

Seven studies reported outcomes in depressive symptoms at post-intervention. Overwhelmingly, findings suggested promising results (Berkson et al., 2014; Drožđek et al., 2013; Jeon et al., 2020; Kinzie et al., 2012; Stade et al., 2015), but some variations were found. For example, Mitschke and colleagues (2013) only found significant improvement in their Financial Literacy group, and depressive symptoms worsened in their Financial Literacy Plus group at post-intervention and slightly improved in their Control group; moreover, depressive symptoms significantly improved at three-month follow-up in both treatment groups and not the control group. In addition, Mollica and colleagues reported outcomes by their participants' ethnic groups (1990); the authors found that Cambodian participants experienced significant improvement, but Hmong/Laotian participants' depressive symptoms worsened at post-intervention. Vietnamese participants improved their depressive symptoms, though statistically non-significant.

Posttraumatic Stress (PTS)

Six studies evaluated PTS outcomes at post-intervention, and four studies (66.67%) reported promising findings (Drožđek et al., 2013; Kinzie et al., 2012; Lehung et al., 2017; Mitschke et al., 2013). Although two studies failed to report statistically significant findings in PTSD symptoms, improvement was observed at post-intervention in both studies (Jeon et al., 2020; Stade et al., 2015).

Anxiety

Five studies reported outcomes in anxiety symptoms at post-intervention and presented mixed findings. Two of the five studies (40%) reported significant

improvement (Drožđek et al., 2013; Mitschke et al., 2013), and three (60%) reported non-significant findings (Jeon et al., 2020; Mollica et al., 1990; Stade et al., 2015). Of note, Mollica and colleagues (1990) reported that their Cambodian and Vietnamese participants experienced improvement in anxiety although not significant, but their Hmong/Laotian participants' anxiety symptoms worsened at post-intervention. They also found that participants without a PTSD diagnosis experienced more significant anxiety improvement than those with a PTSD diagnosis; and in fact, those with a PTSD diagnosis experienced worsened anxiety at post-intervention.

General Psychopathology/Functioning/Impairment

General psychopathology, functioning, and impairment all assess general symptoms and functioning and were included into the same category in the narrative review. Two of the three studies (66.67%) indicated promising findings. In Luy's mindfulness-based group intervention (2013), global functioning significantly improved in the mindfulness treatment group compared to the psychoeducation control group; however, no between-group difference was found in functional impairment. Kinzie and colleagues (2013) measured functional impairment and found that 20 of 22 participants showed significant improvement after receiving clinic treatment for one year. One study reported less promising findings: Stade and colleagues (2015) found that their movement-based intervention improved functional impairment but the improvement was not statically significant ($p = 0.277$).

Well-being/Quality of Life

Three studies evaluated well-being/quality of life, and two of them reported significant improvement (66.67%). Boemel and Rozée (1992) found that both their

therapy and skills groups significantly improved participants' well-being/levels of happiness at post-intervention and that their waitlist control group did not produce significant change. Kinzie and colleagues (2012) found that 20 of their 22 participants showed significant improvement in their quality of life after receiving one year of clinic treatment. Stade and colleagues' study (2015) did not find significant improvement in participants' well-being.

Somatic Symptoms

Only two NRCT studies reported outcomes on somatic symptoms, and results were not as promising. Mitschke and colleagues (2013) reported that although somatic symptoms did not improve significantly at post-intervention in any group, they significantly improved at follow-up in both treatment groups. In addition, Stade and colleagues' BBAT intervention (2015) did not produce significant improvement in somatic symptoms ($p = 0.056$).

Systematic Review of Cultural Tailoring Findings

Combining two cultural tailoring frameworks from Jongen and colleagues (2017) and Cardemil (2010), cultural tailoring was characterized into four categories: Language, Intervention Providers, Community, and Culture. Overall, all studies reported some type of cultural tailoring. Below each category is described in detail. Upon qualitative review, cultural tailoring and study type (i.e., RCT vs. NRCT) or intervention modality (i.e., group vs. individual) were not systematically correlated.

Language

Tailored Assessment. Two-thirds (67.74%) of studies reported linguistically and/or culturally tailored assessments. These assessments included population-validated

or population-tested as well as translated (and often back-translated) measures. Commonly used population-validated measured included Hopkins Symptom Checklist (HSCL-25) for Khmer (Otto et al., 2003), Cambodian (Berkson et al., 2014) Farsi-speaking individuals (Drožđek et al., 2013), Southeast Asian (Fox et al., 1997), and multiple other ethnicities (Goodkind et a., 2020); Harvard Trauma Questionnaire (HTQ) for Arabic-speaking (Acarturk et al., 2016; Hijazi et al., 2014) and Farsi-speaking (Drožđek et al., 2013; Shaw et al., 2019) individuals; and Beck Depression Inventory-II (BDI-II) for Arabic-speaking individuals (Hijazi et al., 2014; Lehnung et al., 2017; Yurtserver et al., 2018). Some measures were also created specifically for specific populations (Berkson et al., 2014; Kim & Atteraya, 2015; Otto et al., 2003). In one case, this was done more extensively, in which Bolton and colleagues (2014) adapted their measures according to their previous qualitative study with the same population.

In-language Intervention Materials. Sixteen-percent of studies reported providing linguistically and/or culturally appropriate intervention materials in the form of videos, handouts, and other materials. Many did not report any details related to handouts/materials, which could represent an absence of using any materials and thus was unable to be evaluated.

In-Language Intervention. A distinction was made between intervention providers who spoke the same language as participants and interpreters during intervention delivery. More than half (61.29%) of studies' providers were linguistically matched with their participants, including those within multidisciplinary teams with some speaking the same language as their participants and some speaking other languages (Berkson et al., 2014; Danner et al., 2007; Fox et al., 1997; Kinzie et al., 2012).

Linguistically matched health/mental health professionals included psychiatrists (Hinton et al., 2005), social workers (Boemel & Rozée, 1992), pharmacists (Alsmadi et al., 2018), licensed psychotherapists (Alsmadi et al., 2018), counselors (Kim & Atteraya, 2015; Luy, 2013), and therapists (Hijazi et al., 2014; Kananian et al., 2020), and professional guest speakers (Luy, 2013). Non-professionals included lay counselors in integrative interventions (Bolton et al., 2014; Tay et al., 2022), field trainers in a problem-solving intervention (White-Baughan, 1990).

Interpreters. Over one-quarter (29.03%) of studies involved interpreters. Limited details were provided regarding interpreters; two studies identified their interpreters as professional interpreters (Buhmann et al., 2016; Drožđek et al., 2013; Northwood et al., 2020; Stenmark et al., 2013), one identified an agency employee interpreter (Mitschke et al., 2013), and others did not provide details (Acarturk et al., 2016; Lehnung et al., 2017; Stade et al., 2015; ter Heide et al., 2011).

Ethnically Matched Providers

This cultural tailoring category was coded separately from in-language providers because it is possible that a provider speaks a specific language but comes from a different ethnicity than their refugee participants. Many studies did not specifically report providers' ethnicities, and therefore the numbers reported below likely are undercounts of ethnically matched providers in studies.

Assessment. Providers during assessment and intervention delivery were evaluated separately as many studies involved different providers in the two processes. During assessment, 29.03% of studies' assessments were conducted by individuals from the same ethnic/cultural group as participants. Two additional studies reported that

assessment evaluators were Arabic-speaking (Hijazi et al., 2014) and bilingual (Mitschke et al., 2013) and were unclear about the ethnic match; thus, Mitschke and colleagues' study was counted in the language match category but not ethnic match.

Intervention. One-third (35.48%) of studies' interventions were conducted by providers from the same ethnicity (Acarturk et al., 2022b; Berkson et al., 2014; Boemel & Rozée, 1992; Bolton et al., 2014; Danner et al., 2007; Kinzie et al., 2012; Luy, 2013; Mollica et al., 1990; Shaw et al., 2019; Tay et al., 2022; White-Baughan, 1990). Of those, approximately half (45.45%; Berkson et al., 2014; Danner et al., 2007; Mollica et al., 1990; Kinzie et al., 2012; Shaw et al., 2019) involved a multidisciplinary team of providers with some ethnically matched providers.

Community

Community engagement assessed the extent of the researcher team's community interaction with participants' ethnic/cultural networks; this excluded organizations or ethnically matched mental health providers. Schools were not counted as ethnic/cultural networks, and engagement with refugee camps was counted in this category

Recruitment. Nearly one-quarter (22.58%) of studies utilized ethnic/cultural networks during participant recruitment including contacting community leaders and distributing flyers at ethnic grocery stores, temples, refugee camps, community organizations, and cultural centers. Furthermore, two studies recruited participants via snowball sampling and family/friend referrals (Danner et al., 2007; Kim & Atteraya, 2015).

Development. Nearly one-quarter (22.58%) of studies involved community/ethnic members in their intervention development stage. Involvement ranged

from helping translate materials and review materials to providing feedback through questionnaires, focus groups, and interviews (Kananian et al., 2020; Jeon et al., 2020; Tay et al., 2022; White-Baughan, 1990). Researchers worked with community leaders, experts, and refugee peers in this process. Two studies reported broadly that community members/cultural facilitators were involved in the development of their intervention/curriculum (Danner et al., 2007; Mitschke et al., 2013) without providing further details.

Delivery. Community/ethnic members, excluding professional providers, participated during intervention delivery in 29.03% of studies. More specifically, they were sole providers in five studies (55.56%), co-facilitators in three studies (33.33%), and interpreters in one.

Setting. 32.26% of studies conducted their interventions at a community site, including participant's home (Bolton et al., 2014; Fox et al., 1997; Hijazi et al., 2014; Tay et al., 2022; White-Baughan, 1990), community office/center (Goodkind et al., 2020; Hijazi et al., 2014; Tay et al., 2022), ethnic clinic (Bolton et al., 2014; Hinton et al., 2005), temple (Otto et al., 2003), church (Hijazi et al., 2014), apartment community center (Mitschke et al., 2013), refugee camp (Yurtsever et al., 2018), and outdoor (Bolton et al., 2014). Others were conducted at non-community sites such as clinics and hospitals.

Culture

Cultural tailoring in intervention treatment content (e.g., intervention protocols) and treatment context (e.g., how the intervention is carried out) were assessed separately.

Treatment Content. Nearly half (45.16%) of studies reported considering and incorporating participants' cultural values, beliefs, and/or traditions in their treatment content. Several categories of content tailoring were identified.

The most common form of content tailoring was to adapt the treatment components according to cultural values, norms, and/or beliefs. Several studies modified their mindfulness imageries based on cultural values. Commonly used imageries included lotus bloom (Hinton et al., 2005), gardens and parks (Kananian et al., 2020), and trees and scenery that are similar to those in participants' home countries (Shaw et al., 2019); these imageries represent harmony, which is often valued in Eastern cultures. Several also adapted metaphors, illustrations, stories, and idioms (Acarturk et al., 2022a; Tay et al., 2022). For example, Kananian and colleagues (2020) used an alarm system metaphor instead of the original inner child metaphor in their CBT treatment. Broader considerations of cultural values were also incorporated, such as emphasizing the cultural value of interpersonal relationships.

It was also common to incorporate cultural practices into treatment. In Bolton and colleagues' CETA intervention (2014), Burmese forms of meditation and healing (e.g., herbal medicine, traditional healers) and discussions of cultural traditions were especially encouraged. In Danner and colleagues' group therapy intervention (2007), Hmong cultural art activities, *paj ntaub*, were incorporated as part of their mind-body exercises. Moreover, Berkson and colleagues (2014) broadly described emphasizing restoring cultural pride and equilibrium of good health in Cambodian refugees in their intervention. Similarly, Shaw and colleagues (2019) broadly reported discussing religious and spiritual coping strategies with participants.

Another type of content tailoring was incorporating cultural conceptualizations of presentations. Kananian and colleagues (2020) incorporated cultural conceptualizations of distress in the context of CA-CBT interventions. Similarly, Otto and colleagues (2003) added a component in their CBT treatment to distinguish PTSD symptoms from cultural conceptualization of fears and somatic symptoms.

Due to the commonly high stigma toward mental illness and psychological interventions, several studies tailored their treatment content to decrease stigma: White-Baughan (1990) emphasized universalization/normalization of symptoms with Cambodian refugees; Shaw and colleagues (2019) promoted health and well-being instead of emphasizing mental struggles.

Treatment Context/Delivery. Five studies (19.35%) reported tailoring their treatment context or treatment delivery based on cultural beliefs/customs. Among the studies, a gender match between providers and participants and/or gender division among participants was the most commonly tailored component (66.67%; Acarturk et al., 2016; Acarturk et al., 2022b; Kananian et al., 2020; Stade et al., 2015).

Cultural values were also broadly considered in the treatment context. Mitschke and colleagues (2013) designed their intervention to be group rather than individual intervention because of the collectivist cultural value and social cohesion within Bhutanese women. Moreover, Boemel and Rozée (1992) promoted trust and encouraged continued contact among group members after their group sessions. Studies also made effort in their treatment context to decrease aforementioned mental health stigma. Acarturk and colleagues (2016) provided childcare at their site and publicly stated their intervention as kindergarten activities. Boemel and Rozée (1992) convinced their eldest

male family member to allow a female in the family to participate. Two studies tailored the method of their treatment delivery: Berkson and colleagues (2014) used illustrated handouts instead of text due to high illiteracy among participants. Similarly, Tay and colleagues (2022) used more colloquial terms in their intervention delivery. In addition, Acarturk and colleagues also considered Syrian refugees' sleeping habits due to the hot weather and therefore scheduled their sessions to be in the late afternoon.

Looking across intervention content and context, three studies tailored both treatment content and context (Acarturk et al., 2016; Boemel & Rozée, 1992; Kananian et al., 2020).

Discussion

The current meta-analysis and systematic review synthesized existing research on the efficacy of 20 RCTs and effectiveness of 11 non-RCTs of psychosocial interventions for 3,082 refugee participants originating from Asia. Findings indicate that overall, psychosocial interventions for refugees from Asia are efficacious and effective across multiple outcomes, though some mixed findings were observed. Moreover, in examining cultural tailoring of these interventions, many included specific tailoring for language, provider, community involvement, and culture.

The current review allowed for variability in intervention focus, and we observed variability in types of mental health concerns addressed. Although the majority of interventions targeted depressive and/or posttraumatic stress symptoms, interventions that targeted other psychosocial outcomes, such as resilience promotion, health promotion, quality of life improvement, and financial skills attainment, were also included. We found that among RCTs for Asia-origin refugees, active treatments showed significantly

more improvement compared to control groups on all outcomes assessed; however, only pooled effect sizes for depressive symptoms at post-intervention (*SMD* = - 0.42) and posttraumatic stress at follow-up (*SMD* = - 0.52) were meaningful due to high statistical heterogeneity and publication bias in other outcomes. Compared across outcomes, posttraumatic stress at follow-up showed a slightly larger pooled effect size than posttraumatic stress at post-intervention and depressive symptoms at post and follow-up, though all were within the medium effect-size range (Cohen's, 1988; Hedges, 1981). Fewer studies addressed anxiety, somatic symptoms, and general psychopathology/functioning; of those included in the present study, large pooled effect sizes at post-intervention were observed, but high statistical heterogeneity could not be resolved.

Previous meta-analyses have shown similar findings that supported treatment efficacy in psychosocial treatment for refugees. Notably, the present review produced smaller effect sizes than previous analytic reviews, which may be due to unresolved high heterogeneity in previous reviews (e.g., Nosè et al., 2017; Thompon et al., 2018; Turrini et al., 2019). For example, Turrini and colleagues (2019) reported that after removing outliers, their pooled effect size for PTSD symptom improvement significantly decreased from a large to a small effect size, which aligns more closely with the current findings.

We were only able to examine potential moderators of treatment efficacy for interventions targeting depressive symptoms due to the small number of available studies for the other outcomes of interest. The current study supports previous reviews that more stringent study designs yield larger effect sizes. Previous research has suggested that when treatment groups were compared with inactive controls (e.g., waitlist control,

treatment-as-usual), pooled effect sizes were bigger than compared with active treatment controls (Thompson et al., 2018; Turrini et al., 2019). However, to our knowledge, no study has compared no-treatment controls (e.g., waitlist control) with some-treatment controls (e.g., treatment-as-usual, compared active treatment). The current study found when treatment groups were compared with no-treatment controls, the pooled effect size was bigger than compared with treatment-as-usual controls. This may indicate that waitlist control groups should be treated differently than treatment-as-usual controls, and that future RCTs should consider including both control conditions to assess treatment efficacy.

Relatedly, studies that required participants to meet symptom thresholds showed a bigger pooled effect size than those that did not require any symptom eligibility. Huey and Tilley (2018) also found that studies requiring a diagnosis according to the Diagnostic and Statistical Manual (DSM) as part of their inclusion criteria resulted in bigger effect sizes than studies that did not. This finding may represent that participants with higher symptoms at the beginning of treatment showed more significant improvement compared to those who reported fewer concerns. In fact, in Jeon and colleagues' study (2020), results were evaluated separately for those with higher symptomology when reporting findings. Future research is recommended to explore treatment efficacy/effectiveness for participants reporting varying levels of symptoms, and to do so, studies need to include participants who meet diagnostic criteria as well as those who experience sub-clinical symptoms.

The current review also assessed treatment efficacy differences between group and individual depression interventions for refugees. Although the limited research on

treatment modality is mixed (Slobodin & de Jong, 2015; Turrini et al., 2019), the current review found that group interventions showed a bigger pooled effect size than individual interventions (*SMD = -0.83* vs. *SMD = -0.26*). This finding supports the importance of considering Asia-origin refugees' collectivist cultural values as well as the need for community connection post-resettlement in designing group-based interventions.

Other moderators were explored, but results were not statistically significant. Specifically, previous literature has suggested mixed findings regarding which of the intervention type (e.g., NET, CBT, trauma-focused CBT, EMDR) is the most efficacious (Nosè et al., 2017; Thompson et al., 2018; Tribe et al., 2016; Murray et al., 2010). We found that CA-CBT interventions showed a bigger pooled effect size than other treatments; although this was statistically significant, it cannot be meaningfully interpreted due to the small sample size ($n = 2$). This adapted CBT focuses more on somatic symptoms and the utilization of mindfulness. Given that Asian refugees may present with more somatic concerns when encountering psychosocial difficulties, CA-CBT might be more culturally appropriate for this population (Kalibatseva & Leong, 2011). Other interventions unique to refugee populations focused on building post-migration growth (Tay et al., 2022), social connections (Goodkind et al., 2020), and integration skills (Mitschke et al., 2013). Although traditional psychotherapy shows efficacy and effectiveness, they often do not directly address post-migration challenges (e.g., financial literacy, English proficiency) or promote community connections in addition to psychological concerns. Interventions targeting these and other psychosocial needs should be considered to more holistically address the well-being for refugees, particularly those who have newly arrived.

While RCT studies found aggregated positive findings on all outcomes assessed, NRCT studies reported positive findings on depressive symptoms, posttraumatic stress, general psychopathology/functioning /impairment, and well-being/quality of life, and mixed findings on anxiety and somatic symptoms. This observed discrepancy may indicate that the interventions in RCT studies were more efficacious. However, it may also indicate that the research methodology was more robust in RCT studies and therefore produced more significant findings. In addition, while the extent of symptom eligibility requirements varied in RCTs, all but one in NRCTs did not require any symptoms in their participants prior to participant.

Previous research on cultural tailoring has largely focused on voluntary migrants instead of forced migrants, with two exceptions (Murray et al., 2010; Naseh et al., 2019). This present review provided a detailed synthesis and expanded on Murray and colleagues' (2010) and Naseh and colleagues' (2019) findings on cultural tailoring in refugee interventions. Firstly, we confirmed their findings that refugee-focused interventions incorporate cultural values into intervention development, collaborated with the community, and tailored assessment and content. Moreover, using our combined framework, cultural tailoring was assessed in four main categories and specific descriptions were provided for each sub-category. We found the most commonly tailored components to be language adaptation (67.74% during assessment and 61.29% during intervention) and treatment content (45.16%). Tailoring related to community involvement during recruitment (22.58%), development (22.58%), delivery (29.03%), and setting (32.26%) were less common. Research literature also suggested that more cultural tailoring in interventions and targeting specific ethnic groups correlate with

higher treatment efficacy and effectiveness (Griner & Smith, 2006; Harper Shehadeh et al., 2016; Huey & Tilley, 2018; Murray et al., 2010). This was supported by the current meta-regression findings, though non-statistically significant. We also found that slightly more than half of the interventions targeted refugees from specific COOs.

Limitations and Future Directions

The present review evaluated outcome improvement in mental disorders and other non-clinical psychosocial outcomes. This more inclusive approach was important because even without meeting threshold for clinical diagnoses, refugees are more likely to experience high distress (Goodkind, 2005; Papadopoulos, 2007; Wells et al., 2016). In practice, this was difficult as only a few RCTs did not require the presence of clinical symptoms as part of their inclusion criteria, reinforcing the exclusion of a large proportion of refugees who may be engaged in psychosocial treatment. Moreover, accounting for study risk of bias and missing data led to the exclusion of multiple published intervention studies. Also, refugees from countries other than Asia were excluded. Due to these and other exclusion decisions, a small sample size was available for the final meta-analyses, and only one meta-regression was conducted. This can be improved in the future with better data reporting consistency with means and standard deviations for pre- and post- outcomes. In addition, only RCT studies were included in the current meta-analyses due to high statistical and theoretical heterogeneity. Furthermore, some important moderators were unable to be assessed, such as participants' use of psychotropic medications, which was largely unreported in studies. Relatedly, statistical power was low in meta-regression analyses due to the small sample size.

We recommend that providers aim to assess distress and provide ongoing services even when refugees do not meet the diagnostic criteria. Our review also showed that refugees experiencing sub-clinical symptoms are not represented in research as only few studies did not require diagnosis or high symptom presentation. More research with refugees experiencing both significant clinical symptoms as well as those only reporting some challenges is recommended to better understand how psychosocial interventions broadly help facilitate refugees' well-being. Relatedly, refugees' average resettlement length was found to be 6.32 years in this review, which is years after resettlement. To best serve refugees who may experience high stress and have been exposed to various forms of trauma, more resources should be dedicated to provide more immediate interventions such as at refugee camps and immediately post-resettlement. Moreover, vast majority (96.77%) of interventions in the present review were conducted in Western countries, likely reflecting our ability to only review studies published in English. Future research is needed to evaluate interventions conducted in non-Western countries, particularly since the vast number of resettled Asian refugees continue to reside in neighboring countries rather than being resettled in the Global North (Bradley, 2014). To begin to address the vast heterogeneity among refugees, the current study focused on refugees originating from Asian countries. At the same time, Asian groups vary drastically, yet we were limited in our ability to draw conclusions about different subgroups due to small sample sizes.

Our review provided a detailed synthesis on cultural tailoring, intervention researchers and providers are recommended to consider culturally tailoring multiple aspects of their interventions using our synthesis as an initial guide. In addition, we

recommend providing targeted services to specific ethnic groups, which can further improve cultural appropriateness. It was also found that several interventions trained laypersons as their providers which also improved outcomes. In addition, 63.64% of ethnically matched providers during treatment were from the community, not mental health professionals (Acarturk et al., 2022b; Berkson et al., 2014; Bolton et al., 2014; Danner et al., 2017; Shaw et al., 2019; Tay et al., 2022; White-Baughan, 1990). Thus, more resources to train layperson providers and build community resources may allow more sustainable resources for the community.

The quality of studies was largely found to have moderate risk of bias; few studies with high risk of bias were excluded from meta-analytic analyses. Previous meta-analyses and systematic reviews also found moderate to high risk of bias in studies examining psychosocial interventions for refugees (e.g., Neseh et al., 2019; Turrini et al., 2019). All NRCT studies were included in the narrative review and therefore caution should be used when interpreting results that were coded as high risk of bias in the review. Balancing rigor with demands of client populations and constraints of intervention providers is challenging; however, we recommend that future research trials take steps to minimize risk of bias.

Conclusion

This review was conducted to provide a comprehensive overview of both efficacy in RCT studies and effectiveness in NRCT studies on interventions that aimed to improve psychosocial outcomes in refugees from Asia. In RCT studies, meta-analyses suggested more significant improvement in the treatment than control groups. NRCT studies showed more mixed findings, although most evidence supports treatment effectiveness.

Moreover, the extent of cultural tailoring was variable, but all studies reported some cultural tailoring in their interventions. Findings from this study provided important recommendations for both intervention researchers and providers who serve Asia-origin refugees.

References

Acarturk, C., Konuk, E., Cetinkaya, M., Senay, I., Sijbrandij, M., Cuijpers, P., & Aker, T. (2015). EMDR for Syrian refugees with posttraumatic stress disorder symptoms: Results of a pilot randomized controlled trial. *European Journal of Psychotraumatology*, *6*(1), 27414.

Acarturk, C., Konuk, E., Cetinkaya, M., Senay, I., Sijbrandij, M., Gulen, B., & Cuijpers, P. (2016). The efficacy of eye movement desensitization and reprocessing for post-traumatic stress disorder and depression among Syrian refugees: Results of a randomized controlled trial. *Psychological Medicine*, *46*(12), 2583-2593.

Acarturk, C., Uygun, E., Ilkkursun, Z., Carswell, K., Tedeschi, F., Batu, M., ... & Barbui, C. (2022a). Effectiveness of a WHO self-help psychological intervention for preventing mental disorders among Syrian refugees in Turkey: a randomized controlled trial. *World Psychiatry*, *21*(1), 88-95.

https://doi.org/10.1002/wps.20939

Acarturk, C., Uygun, E., Ilkkursun, Z., Yurtbakan, T., Kurt, G., Adam-Troian, J., Senay, I., Bryant, R., Cuijpers, P., Kiselev, V., McDaid, D., Morina, N., Nisanci, Z., Park, A. L., Sijbrandij, M., Ventevogfel, P., & Fuhr, D. C. (2022b). Group problem management plus (PM+) to decrease psychological distress among Syrian refugees in Turkey: a pilot randomised controlled trial. *BMC Psychiatry*, *22*(1), 1-11.

Ahmed, I., Sutton, A. J., & Riley, R. D. (2012). Assessment of publication bias, selection bias, and unavailable data in meta-analyses using individual participant data: a database survey. *BMJ*, *344*.

Alsmadi, A. M., Tawalbeh, L. I., Gammoh, O. S., Shawagfeh, M. Q., Zalloum, W., Ashour, A., & Attarian, H. (2018). The effect of Ginkgo biloba and psycho-education on stress, anxiety and fatigue among refugees. *Proceedings of Singapore Healthcare, 27*, 26–32. https://doi.org/10.1177/2010105817716184

Berkson, S. Y., Tor, S., Mollica, R., Lavalle, J., & Cosenza, C. (2014). An innovative model of culturally tailored health promotion groups for Cambodian survivors of torture. *Torture: Quarterly Journal on Rehabilitation of Torture Victims and Prevention of Torture, 24*, 1–16. https://doi.org/10.7146/torture.v24i1.109698

Bogic, M., Ajdukovic, D., Bremner, S., Franciskovic, T., Galeazzi, G. M., Kucukalic, A., Lecic-Tosevski, D., Morina, N., Popovski, M., Schützwohl, M., Wang, D., & Priebe, S. (2012). Factors associated with mental disorders in long-settled war refugees: Refugees from the former Yugoslavia in Germany, Italy and the UK. *The British Journal of Psychiatry: The Journal of Mental Science, 200*(3), 216–223. https://doi.org/10.1192/bjp.bp.110.084764

Bolton, P., Lee, C., Haroz, E. E., Murray, L., Dorsey, S., Robinson, C., Ugueto, A. M., & Bass, J. (2014). A transdiagnostic community-based mental health treatment for comorbid disorders: development and outcomes of a randomized controlled trial among Burmese refugees in Thailand. *PLoS Medicine*, *11*(11), e1001757.

Brown, R. C., Witt, A., Fegert, J. M., Keller, F., Rassenhofer, M., & Plener, P. L. (2017). Psychosocial interventions for children and adolescents after man-made and natural disasters: A meta-analysis and systematic review. *Psychological Medicine, 47*(11), 1893–1905. https://doi.org/10.1017/S0033291717000496

Buhmann, C. B., Nordentoft, M., Ekstroem, M., Carlsson, J., & Mortensen, E. L. (2016). The effect of flexible cognitive-behavioural therapy and medical treatment, including antidepressants on post-traumatic stress disorder and depression in traumatised refugees: Pragmatic randomised controlled clinical trial. *British Journal of Psychiatry, 208*, 252–259. https://doi.org/10.1192/bjp.bp.114.150961

Cardemil, E. V. (2010). Cultural adaptations to empirically supported treatments: A research agenda. *The Scientific Review of Mental Health Practice: Objective Investigations of Controversial and Unorthodox Claims in Clinical Psychology, Psychiatry, and Social Work, 7*(2), 8–21.

Chu, J., & Leino, A. (2017). Advancement in the maturing science of cultural adaptations of evidence-based interventions. *Journal of Consulting and Clinical Psychology, 85*(1), 45–57. https://doi.org/10.1037/ccp0000145

Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurement, 20*(1), 37–46. https://doi.org/10.1177/001316446002000104

Cuijpers, P., Weitz, E., Cristea, I. A., & Twisk, J. (2016). Pre-post effect sizes should be avoided in meta-analyses. *Epidemiology and Psychiatric Sciences, 26*(4), 364–368. https://doi.org/10.1017/S2045796016000809

Danner, C. C., Robinson, B. B. E., Striepe, M. I., & Rhodes, P. F. Y. (2007). Running from the demon: Culturally specific group therapy for depressed Hmong women in a family medicine residency clinic. *Women & Therapy*, *30*(1-2), 151-176.

David Kinzie, J., Leung, P., Bui, A., Ben, R., Keopraseuth, K. O., Riley, C., Fleck, J., & Ades, M. (1988). Group therapy with Southeast Asian refugees. *Community Mental Health Journal*, *24*(2), 157-166. https://doi.org/10.1007/BF00756658

Drožđek, B., & Bolwerk, N. (2010). Evaluation of group therapy with traumatized asylum seekers and refugees—The Den Bosch Model. *Traumatology*, *16*(4), 117-127.

Drožđek, B., Kamperman, A. M., Tol, W. A., Knipscheer, J. W., & Kleber, R. J. (2013). Is legal status impacting outcomes of group therapy for posttraumatic stress disorder with male asylum seekers and refugees from Iran and Afghanistan? *BMC Psychiatry, 13*. https://doi.org/10.1186/1471-244X-13-148

Egger, M., Davey Smith, G., Schneider, M., & Minder, C. (1997). Bias in meta-analysis detected by a simple, graphical test. *BMJ (Clinical Research Ed.), 315*(7109), 629–634. https://doi.org/10.1136/bmj.315.7109.629

Fazel, M., Wheeler, J., & Danesh, J. (2005). Prevalence of serious mental disorder in 7000 refugees resettled in western countries: A systematic review. *The Lancet, 365*(9467), 1309–1314. https://doi.org/10.1016/S0140-6736(05)61027-6

Fox, P. G., Cowell, J. M., Montgometry, A. C., & Willgerodt, M. A. (1997). Southeast Asian refugee women and depression: A nursing intervention. *The International Journal of Psychiatric Nursing Research, 4*, 423–432.

Gattinara, P. C., & Pallini, S. (2017). The use of EMDR with refugees and asylum seekers: A review of research studies. *Clinical Neuropsychiatry: Journal of Treatment Evaluation, 14*(5), 341–344.

George, M. (2012). Migration traumatic experiences and refugee distress: Implications for social work practice. *Clinical Social Work Journal, 40*(4), 429–437. https://doi.org/10.1007/s10615-012-0397-y

Goodkind, J. R. (2005). Effectiveness of a Community-Based Advocacy and Learning Program for Hmong Refugees. *American Journal of Community Psychology, 36*(3–4), 387–408. https://doi.org/10.1007/s10464-005-8633-z

Goodkind, J. R., Bybee, D., Hess, J. M., Amer, S., Ndayisenga, M., Greene, R. N., Choe, R., Isakson, B., Baca, B., & Pannah, M. (2020). Randomized Controlled Trial of a Multilevel Intervention to Address Social Determinants of Refugee Mental Health. *American Journal of Community Psychology, 65*(3/4), 272–289. https://doi.org/10.1002/ajcp.12418

Griner, D., & Smith, T. B. (2006). Culturally adapted mental health intervention: A meta-analytic review. Griner, D., & Smith, T. B. (2006). Culturally adapted mental health intervention: A meta-analytic review. *Psychotherapy: Theory, research, practice, training, 43*(4), 531

Hall, G. C. N., Ibaraki, A. Y., Huang, E. R., Marti, C. N., & Stice, E. (2016). A meta-analysis of cultural adaptations of psychological interventions. *Behavior Therapy, 47*(6), 993–1014. https://doi.org/10.1016/j.beth.2016.09.005

Harper Shehadeh, M., Heim, E., Chowdhary, N., Maercker, A., & Albanese, E. (2016). Cultural adaptation of minimally guided interventions for common mental disorders: A systematic review and meta-analysis. *JMIR Mental Health, 3*(3). https://doi.org/10.2196/mental.5776

Higgins, J. P. T., & Thompson, S. G. (2004). Controlling the risk of spurious findings from meta-regression. *Statistics in Medicine, 23*(11), 1663–1682. https://doi.org/10.1002/sim.1752

Higgins, J. P. T., Thompson, S. G., Deeks, J. J., & Altman, D. G. (2003). Measuring inconsistency in meta-analyses. *BMJ: British Medical Journal, 327*(7414), 557–560.

Hijazi, A. M., Lumley, M. A., Ziadni, M. S., Haddad, L., Rapport, L. J., & Arnetz, B. B. (2014). Brief narrative exposure therapy for posttraumatic stress in Iraqi refugees: a preliminary randomized clinical trial. *Journal of Traumatic Stress*, *27*(3), 314-322.

Hinton, D. E., Chhean, D., Pich, V., Safren, S. A., Hofmann, S. G., & Pollack, M. H. (2005). A randomized controlled trial of cognitive-behavior therapy for Cambodian refugees with treatment-resistant PTSD and panic attacks: A cross-over design. *Journal of Traumatic Stress: Official Publication of The International Society for Traumatic Stress Studies*, *18*(6), 617-629.

Huang, S., Fong, S., Duong, T., & Quach, T. (2016). The Affordable Care Act and integrated behavioral health programs in community health centers to promote utilization of mental health services among Asian Americans. *Translational Behavioral Medicine, 6*(2), 309–315. https://doi.org/10.1007/s13142-016-0398-4

Huey, S. J. Jr., & Tilley, J. L. (2018). Effects of mental health interventions with Asian Americans: A review and meta-analysis. *Journal of Consulting and Clinical Psychology, 86*(11), 915–930. https://doi.org/10.1037/ccp0000346

Hynes, M., & Cardozo, B. L. (2000). Observations from the CDC: Sexual violence against refugee women. *Journal of Women's Health & Gender-Based Medicine, 9*(8), 819–823. https://doi.org/10.1089/152460900750020847

Hynie, M. (2018). The social determinants of refugee mental health in the post-migration context: A critical review. *The Canadian Journal of Psychiatry, 63*(5), 297–303. https://doi.org/10.1177/0706743717746666

Inter-Agency Standing Committee. (2007). IASC guidelines on mental health and psychosocial support in emergency settings. *World Health Organization*. https://doi.org/10.1037/e518422011-002.

Jeon, S., Lee, J., Jun, J. Y., Park, Y. S., Cho, J., Choi, J., ... & Kim, S. J. (2020). The effectiveness of cognitive behavioral therapy on depressive symptoms in North Korean refugees. *Psychiatry Investigation*, *17*(7), 681.

Jongen, C. S., McCalman, J., & Bainbridge, R. G. (2017). The implementation and evaluation of health promotion services and programs to improve cultural competency: A systematic scoping review. *Frontiers in Public Health, 5.* https://doi.org/10.3389/fpubh.2017.00024

Kalibatseva, Z., & Leong, F. T. L. (2014). A critical review of culturally sensitive treatments for depression: Recommendations for intervention and research. *Psychological Services, 11*(4), 433–450. https://doi.org/10.1037/a0036047

Kananian, S. A. (2017). Transdiagnostic culturally adapted CBT with Farsi-speaking refugees: A pilot study. *European Journal of Psychotraumatology, 8*, 1390362. https://doi.org/10.1080/20008198.2017.1390362

Kananian, S., Soltani, Y., Hinton, D., & Stangier, U. (2020). Culturally adapted cognitive behavioral therapy plus problem management (CA-CBT+) with Afghan refugees: A randomized controlled pilot study. *Journal of Traumatic Stress, 33*(6), 928–938. https://doi.org/10.1002/jts.22615

Kim, H. J., & Atteraya, M. S. (2015). An intervention strategy for improving social adaptation among female North Korean refugees. *Asia Pacific Journal of Social Work and Development*, *25*(3), 157-169.

Kim, I. (2016). Beyond Trauma: Post-resettlement factors and mental health outcomes among Latino and Asian refugees in the United States. *Journal of Immigrant and Minority Health, 18*(4), 740–748. https://doi.org/10.1007/s10903-015-0251-8

Kim, J. E., & Zane, N. (2016). Help-seeking intentions among Asian American and White American students in psychological distress: Application of the health belief model. *Cultural Diversity & Ethnic Minority Psychology, 22*(3), 311–321. https://doi.org/10.1037/cdp0000056

Kinzie, J. D., Kinzie, J. M., Sedighi, B., Woticha, A., Mohamed, H., & Riley, C. (2012). Prospective one-year treatment outcomes of tortured refugees: A psychiatric approach. *Torture: Quarterly Journal on Rehabilitation of Torture Victims and Prevention of Torture*, *22*(1), 1-10.

Lehnung, M., Shapiro, E., Schreiber, M., & Hofmann, A. (2017). Evaluating the EMDR group traumatic episode protocol with refugees: A field study. *Journal of EMDR Practice and Research, 11*, 129–138. https://doi.org/10.1891/1933-3196.11.3.129

Leong, F. T., & Lau, A. S. (2001). Barriers to providing effective mental health services to Asian Americans. *Mental Health Services Research, 3*(4), 201–214. https://doi.org/10.1023/a:1013177014788

Li, H. (2012). Mental health literacy, stigma, and early intervention. *Asian Journal of Psychiatry, 5*(3), 209–210. https://doi.org/10.1016/j.ajp.2012.07.007

Li, S. S., Liddell, B. J., & Nickerson, A. (2016). The relationship between post-migration stress and psychological disorders in refugees and asylum seekers. *Current Psychiatry Reports*, *18*(9), 1-9.

Luy, K. C. (2013). Effects of mindfulness-based group counseling on functional impairment and global functioning in Southeast Asians. *ProQuest Dissertations and Theses, 235*.

Maeshima, L. S., & Parent, M. C. (2020). Mental health stigma and professional help-seeking behaviors among Asian American and Asian international students. *Journal of American College Health*, 1-7. https://doi.org/10.1080/07448481.2020.1819820

Masuda, A., & Boone, M. S. (2011). Mental health stigma, self-concealment, and help-seeking attitudes among Asian American and European American college students with no help-seeking experience. *International Journal for the Advancement of Counselling, 33*(4), 266–279. https://doi.org/10.1007/s10447-011-9129-1

McFarlane, C. A., & Kaplan, I. (2012). Evidence-based psychological interventions for adult survivors of torture and trauma: A 30-year review. *Transcultural Psychiatry, 49*(3–4), 539–567. https://doi.org/10.1177/1363461512447608

Microsoft Corporation. (2018). *Microsoft Excel*. Retrieved from https://office.microsoft.com/excel

Mitschke, D. B., Aguirre, R. T., & Sharma, B. (2013). Common threads: improving the mental health of Bhutanese refugee women through shared learning. *Social Work in Mental Health*, *11*(3), 249-266

Mollica, R. F., Wyshak, G., Lavelle, J., Truong, T., Tor, S., & Yang, T. (1990). Assessing symptom change in southeast Asian refugee survivors of mass violence and torture. *American Journal of Psychiatry, 147*, 83–88. https://doi.org/10.1176/ajp.147.1.83

Morris, S. B., & DeShon, R. P. (2002). Combining effect size estimates in meta-analysis with repeated measures and independent-groups designs. *Psychological Methods,* 7(1), 105–125. https://doi.org/10.1037/1082-989x.7.1.105

Murray, K. E., Davidson, G. R., & Schweitzer, R. D. (2010). Review of refugee mental health interventions following resettlement: Best practices and recommendations. *American Journal of Orthopsychiatry, 80*(4), 576–585. https://doi.org/10.1111/j.1939-0025.2010.01062.x

Nakeyar, C., & Frewen, P. A. (2016). Evidence-based care for Iraqi, Kurdish, and Syrian asylum seekers and refugees of the Syrian civil war: A systematic review. *Canadian Psychology, 57*(4), 233–245. https://doi.org/10.1037/cap0000067

Naseh, M., Macgowan, M. J., Wagner, E. F., Abtahi, Z., Potocky, M., & Stuart, P. H. (2019). Cultural adaptations in psychosocial interventions for post-traumatic stress disorder among refugees: A systematic review. *Journal of Ethnic &*

Cultural Diversity in Social Work, 28(1), 76–97. https://doi.org/10.1080/15313204.2019.1570891

Nicholl, C., & Thompson, A. (2004). The psychological treatment of posttraumatic stress Disorder (PTSD) in adult refugees: A review of the current state of psychological therapies. *Journal of Mental Health, 13*(4), 351–362. https://doi.org/10.1080/09638230410001729807

Nicholson, B. L. (1997). The influence of pre-emigration and postemigration stressors on mental health: A study of Southeast Asian refugees. *Social Work Research, 21*(1), 19–31. https://doi.org/10.1093/swr/21.1.19

Northwood, A. K., Vukovich, M. M., Beckman, A., Walter, J. P., Josiah, N., Hudak, L., O'Donnell Burrows, K., Letts, J. P., & Danner, C. C. (2020). Intensive psychotherapy and case management for Karen refugees with major depression in primary care: A pragmatic randomized control trial. *BMC Family Practice, 21*(1), 17. https://doi.org/10.1186/s12875-020-1090-9

Nosè, M., Ballette, F., Bighelli, I., Turrini, G., Purgato, M., Tol, W., Priebe, S., & Barbui, C. (2017). Psychosocial interventions for post-traumatic stress disorder in refugees and asylum seekers resettled in high-income countries: Systematic review and meta-analysis. *PLOS ONE, 12*(2), e0171030. https://doi.org/10.1371/journal.pone.0171030

Novianti, P. W., Roes, K. C. B., & van der Tweel, I. (2014). Estimation of between-trial variance in sequential meta-analyses: A simulation study. *Contemporary Clinical Trials, 37*(1), 129–138. https://doi.org/10.1016/j.cct.2013.11.012

Otto, M. W., Hinton, D., Korbly, N. B., Chea, A., Ba, P., Gershuny, B. S., & Pollack, M. H. (2003). Treatment of pharmacotherapy-refractory posttraumatic stress disorder among Cambodian refugees: a pilot study of combination treatment with cognitive-behavior therapy vs sertraline alone. *Behaviour Research and Therapy*, *41*(11), 1271-1276.

Otto, M. W., & Hinton, D. E. (2006). Modifying exposure-based CBT for Cambodian refugees with posttraumatic stress disorder. *Cognitive and Behavioral Practice*, *13*(4), 261-270.

Papadopoulos, R. K. (2007). Refugees, trauma and adversity-activated development. *European Journal of Psychotherapy & Counselling, 9*(3), 301–312. https://doi.org/10.1080/13642530701496930

Pernice, R., & Brook, J. (1994). Relationship of migrant status (refugee or immigrant) to mental health. *International Journal of Social Psychiatry*, *40*(3), 177-188.

Porter, M., & Haslam, N. (2005). Predisplacement and postdisplacement factors associated with mental health of refugees and internally displaced persons: A meta-analysis. *JAMA, 294*(5), 602–612. https://doi.org/10.1001/jama.294.5.602

Rasmussen, A., Crager, M., Baser, R. E., Chu, T., & Gany, F. (2012). Onset of posttraumatic stress disorder and major depression among refugees and voluntary migrants to the United States. *Journal of Traumatic Stress, 25*(6), 705–712. https://doi.org/10.1002/jts.21763

Robertson, C. L., Savik, K., Mathiason-Moore, M., Mohamed, A., & Hoffman, S. (2016). Modeling psychological functioning in refugees. *Journal of the American*

Psychiatric Nurses Association, 22(3), 225–232. https://doi.org/10.1177/1078390316641489

Shaw, S. A., Ward, K. P., Pillai, V., & Hinton, D. E. (2019). A group mental health randomized controlled trial for female refugees in Malaysia. *American Journal of Orthopsychiatry*, *89*(6), 665.

Stade, K., Skammeritz, S., Hjortkjær, C., & Carlsson, J. (2015). "After all the traumas my body has been through, I feel good that it is still working."– Basic Body Awareness Therapy for traumatised refugees. *Torture*, *25*(1), 33-50.

Stenmark, H., Catani, C., Neuner, F., Elbert, T., & Holen, A. (2013). Treating PTSD in refugees and asylum seekers within the general health care system. A randomized controlled multicenter study. *Behaviour Research and Therapy, 51*(10), 641–647. https://doi.org/10.1016/j.brat.2013.07.002

Sterne, J. A. C., Savović, J., Page, M. J., Elbers, R. G., Blencowe, N. S., Boutron, I., Cates, C. J., Cheng, H.-Y., Corbett, M. S., Eldridge, S. M., Emberson, J. R., Hernán, M. A., Hopewell, S., Hróbjartsson, A., Junqueira, D. R., Jüni, P., Kirkham, J. J., Lasserson, T., Li, T., McAleenan, A., Reeves, B. C., Shepperd, S., Shrier, I., Stewart, L. A., Tilling, K., White, I. R., Whiting, P. F., & Higgins, J. P. T. (2019). RoB 2: a revised tool for assessing risk of bias in randomised trials. *BMJ (Clinical Research Ed.)*, 366. doi:10.1136/bmj.l4898

Sterne, J. A., Hernán, M. A., Reeves, B. C., Savović, J., Berkman, N. D., Viswanathan, M., Henry, D., Altman, D. G., Ansari, M. T., Boutron, I., Carpenter, J. R., Chan, A.-W., Churchill, R., Deeks, J. J., Hróbjartsson, A., Kirkham, J., Jüni, P., Loke, Y. K., Pigott, T. D., Ramsay, C. R., Regidor, D., Rothstein, H. R., Sandhu, L.,

Santaguida, P. L., Schünemann, H. J., Shea, B., Shrier, I., Tugwell, P., Turner, L., Valentine, J. C., Waddington, H., Waters, El., Wells, G. A., Whiting, P. F., & Higgins, J. P. (2016). ROBINS-I: A tool for assessing risk of bias in non-randomised studies of interventions. *BMJ (Clinical Research Ed.), 355*. https://doi.org/10.1136/bmj.i4919

Sullivan, A. L., & Simonson, G. R. (2016). A systematic review of school-based social-emotional interventions for refugee and war-traumatized youth. *Review of Educational Research, 86*(2), 503–530. https://doi.org/10.3102/0034654315609419

Sutton, A. J., Duval, S. J., Tweedie, R. L., Abrams, K. R., & Jones, D. R. (2000). Empirical assessment of effect of publication bias on meta-analyses. *BMJ (Clinical Research Ed.), 320*(7249), 1574–1577. https://doi.org/10.1136/bmj.320.7249.1574

Tay, A. K., Mohsin, M., Hau, K. M., Badrudduza, M., Balasundaram, S., Morgan, K., ... & Silove, D. (2022). Variations in prevalence and risk profiles for Common Mental Disorders amongst Rohingya, Chin and Kachin refugees from Myanmar. *Psychological Medicine*, *52*(7), 1306-1320.

ter Heide, F. J. J., Mooren, T. M., Kleijn, W., de Jongh, A., & Kleber, R. J. (2011). EMDR versus stabilisation in traumatised asylum seekers and refugees: Results of a pilot study. *European Journal of Psychotraumatology, 2*. https://doi.org/10.3402/ejpt.v2i0.5881

Thompson, C. T., Vidgen, A., & Roberts, N. P. (2018). Psychological interventions for post-traumatic stress disorder in refugees and asylum seekers: A systematic

review and meta-analysis. *Clinical Psychology Review, 63*, 66–79. https://doi.org/10.1016/j.cpr.2018.06.006

Triandis, H. C., Bontempo, R., Villareal, M. J., Asai, M., & Lucca, N. (1988). Individualism and collectivism: Cross-cultural perspectives on self-ingroup relationships. *Journal of Personality and Social Psychology, 54*(2), 323–338. https://doi.org/10.1037/0022-3514.54.2.323

Tribe, R. H., Sendt, K. V., & Tracy, D. K. (2019). A systematic review of psychosocial interventions for adult refugees and asylum seekers. *Journal of Mental Health*, *28*(6), 662-676.

Turrini, G., Purgato, M., Ballette, F., Nosè, M., Ostuzzi, G., & Barbui, C. (2017). Common mental disorders in asylum seekers and refugees: Umbrella review of prevalence and intervention studies. *International Journal of Mental Health Systems, 11*. https://doi.org/10.1186/s13033-017-0156-0

United Nations High Commissioner for Refugees (2022). *Resettlement Data Finder*. Retrieved on April 19, 2022, from https://rsq.unhcr.org/en/#7GgL

Van Boemel, G. B., & Rozée, P. D. (1992). Treatment for psychosomatic blindness among Cambodian refugee women. *Women & Therapy*, *13*(3), 239-266.

Veroniki, A. A., Jackson, D., Viechtbauer, W., Bender, R., Bowden, J., Knapp, G., Kuss, O., Higgins, J. P., Langan, D., & Salanti, G. (2016). Methods to estimate the between-study variance and its uncertainty in meta-analysis. *Research Synthesis Methods, 7*(1), 55–79. https://doi.org/10.1002/jrsm.1164

Viechtbauer, W. (2005). Bias and efficiency of meta-analytic variance estimators in the random-effects model. *Journal of Educational and Behavioral Statistics, 30*(3), 261–293. https://doi.org/10.3102/10769986030003261

Wells, R., Steel, Z., Abo-Hilal, M., Hassan, A. H., & Lawsin, C. (2016). Psychosocial concerns reported by Syrian refugees living in Jordan: Systematic review of unpublished needs assessments. *The British Journal of Psychiatry: The Journal of Mental Science, 209*(2), 99–106. https://doi.org/10.1192/bjp.bp.115.165084

White-Baughan, J. L. (1990). The effects of a problem-solving intervention with educational videos on symptoms of posttraumatic stress in a sample of Cambodian refugees. *ProQuest Dissertations and Theses, 211*.

Zhang, H. S., Li, Y., Mo, H. Y., Qiu, D. X., Zhao, J., Luo, J. L., Lin, W. Q., Wang, J. J., & Wang, P. X. (2017). A community-based cross-sectional study of sleep quality in middle-aged and older adults. *Quality of Life Research*, *26*(4), 923-933.

Yurtsever, A., Konuk, E., Akyüz, T., Zat, Z., Tükel, F., Çetinkaya, M., Savran, C., & Shapiro, E. (2018). An Eye Movement Desensitization and Reprocessing (EMDR) group intervention for syrian refugees with post-traumatic stress symptoms: Results of a randomized controlled trial. *Frontiers in Psychology, 9*. https://doi.org/10.3389/fpsyg.2018.00493

Zane, N., & Yeh, M. (2002). The use of culturally-based variables in assessment: Studies on loss of face. In *Asian American Mental Health* (pp. 123-138). Springer, Boston, MA.

Table 1. Cultural Tailoring Framework

Language	Providers	Community	Culture
Tailored assessment	Ethnically matched providers during assessment	Using ethnic/cultural media during recruitment	Tailored treatment content
In-language intervention materials	Ethnically matched providers during treatment	Community/ethnic members in the development stage	Tailored treatment delivery/context
In-language intervention		Community/ethnic members in the implementation stage	
Involving interpreters		Intervention conducted at a community site	

Table 2. Detailed Study Characteristics

Author(s)	Study Type	Study Country	Inclusion Criteria	Intervention	Control Type	Participant	Outcome (Measure)	Cultural Tailoring
Acarturk et al., 2016	RCT	Turkey/ Syria Boarder	≥18 years old; PTSD diagnosis based on the DSM-IV; excluded: psychotic disorders, substance dependency, pregnancy, concurrent psychotherapy and/or psychotropic medication	*MN:* EMDR *S:* Refugee camp *MO:* Individual *D(A):* NA (*M*=4.2 sessions, range=2-7 sessions, 76% attended all) *P:* Psychologist	WL	*N*=70 *COO:* Syria *F:* 74.5% *M:* 25.5% *A: M* =33.68/ *SD*=10.56/ *range*=17-64 *R:* NA	Depression (BDI-II) PTSD (HTQ)	Language Community Culture
Acarturk et al., 2022a	RCT	Turkey	≥18 years old; Syrian refugee; Arabic speaker; literate; scored >3 on the GHQ-12; provided informed consent	*MN:* Self-Help Plus *S:* NA *MO:* Group *D(A):* Five 2-hour sessions *P:* Trained facilitators	Enhanced TAU (social support/ routine care + community resources)	*N*=642 *COO*: Syria, Yemen, occupied Palestinian territory *F*: 62.9% *M*: 27.1% *A*: *M*=31.5/ *SD*=9 *R:* NA	Depression (PHQ-9) PTSD (PCL-5) Well-being (WHO-5) General (GHQ-12)	Language Community Culture
Acarturk et al., 2022b	RCT	Turkey	≥18 years old; Syrian refugee; Arabic speaker; scored >15 on the Kessler-10 Psychological Distress Scale; scored >16 on the WHO Disability Scale	*MN*: Problem Management Plus *S*: NA *MO*: Group *D(A*): Weekly sessions, 5 weeks (75% completed 3+) *P*: Peer refugee facilitator	Enhanced TAU (usual refugee care + mental health services information)	*N*=46 *COO*: Syria *F*: 67.4% *M*: 32.6% *A*: *M*=38.02/ *SD*=10.88 *R:* NA	Depression (HSCL-25) PTSD (PCL-5) Anxiety (HSCL-25)	Language Provider Community Culture

Author(s)	Study Type	Study Country	Inclusion Criteria	Intervention	Control Type	Participant	Outcome (Measure)	Cultural Tailoring
Alsmadi et al., 2018	RCT	Jordan	≥18 years old; Iraqi refugees in Jordan; excluded: pregnancy, concurrent antiplatelet/anticoagulant therapy, previous hypersensitivity history for G. biloba, previous psychoeducation, previous herbal medicine/drugs to treat anxiety/stress/fatigue	*MN:* G. Biloba + Psychoeducation *S:* NA *MO:* Individual/group *D(A):* 4.2-8g dried herb/120mg extract daily + weekly 90-minute sessions, 6 sessions *P:* Biloba-pharmacist, licensed psychotherapists with nursing and psychology backgrounds	TAU (psycho-education)	*N*=84 *COO*: Iraq *F*: 48.81% *M*: 51.2% *A*: *M*=39.49/ *SD*=5.26 *R:* NA	Anxiety (HAM-A)	Language Providers
Berkson et al., 2014	NRCT	US	≥18 years old; primary or secondary Cambodian torture survivors between 1975-1979	*MN:* Cambodian Health Promotion Program *S:* Primary care *MO:* Group *D(A):* 5 sessions *P:* American mental health practitioner, Cambodian community health worker		*N*= 26 *COO*: Cambodia *F*: 64% *M*: 36% *A*: *range*= 51-61+ *R:* NA	Depression (HSCL) Somatic (HPQ)	Language Providers Community Culture
Boemel & Rozée, 1992	NRCT	US	Psychosomatically blind women	*MN:* Therapy Group *S:* Community psychology clinic *MO*: Group *D(A):* Weekly one-hour sessions, 10 weeks *P:* Social worker		*N*=15 *COO*: Cambodia *F*: 100% *A*: *M*=57.8/ *SD*=5.5/ range=47-63 *R*: *M*=6.4	Well-being/ happiness (own interview survey)	Language Provider Culture

					years/*range*=3-8 years		
Author(s)	**Study Type**	**Study Country**	**Inclusion Criteria**	**Intervention**	**Control Type**	**Participant**	**Outcome (Measure)**	**Cultural Tailoring**
Bolton et al., 2014	RCT	Thailand	≥18 years old; Burmese; witnessed or experienced a traumatic event; moderate to severe depression based on the HSCL-25/PTSS based on the HTQ	*MN:* Common Elements Treatment Approach *S:* Homes, local ethnic clinics, community organizations, outside *MO:* Individual *D(A):* Weekly one-hour sessions, 3-4 month (79% completed) *P:* Lay counselors	WL	*N*=347 *COO*: Burma *F*: 62.5% *M:* 37.5% *A: M*=35.6/ *range*=18-85 R: *M*=5.5 years/ *range*=0-35 years	Depression (HSCL-25) PTS (HTQ) Anxiety (HSCL-25)	Language Providers Community Culture
Buhmann et al., 2016	RCT	Denmark	≥18 years old; refugee through family reunification with a refugee; PTSD according to the ICD-10; war-related psychological trauma; motivation to receive treatment; excluded: severe personality disorder, dependency on psychoactive substances, required hospitalization, pregnancy, lactating	*MN:* Medication Plus CBT *S:* Clinical/research center *MO:* Individual *D(A):* Weekly/monthly sessions, 6 months (100% attendance, 26% excluded for incomplete attendance) *P:* Physician, psychologist	WL	*N*=217 *COO:* Iraq, Iran, Lebanon, Afghanistan *F:* 41% *M:* 59% *A: M*=45/*SD*=9 *R*: *M*=14.7 years	Depression (HRSD) PTSD (HTQ) Anxiety (HRSA) Somatization (SCL-90) Well-being (WHO-5) Functional impairment (SDS)	Language
Danner et al., 2007	NRCT	US	Hmong women	*MN:* Culturally Specific Group Therapy *S:* Family medicine residency		*M*=14 *COO*: Hmong	Depression (HABDI)	Language Provider

			clinic *MO:* Group *D(A):* Weekly 2-hour sessions for ten weeks *P:* Clinical health psychologist, family medicine physician, cultural facilitator		F: 100% *A*: *M*=42.6/ *SD*=8.98 *R*: NA		Community Culture
Author(s)	**Study Type**	**Study Country**	**Inclusion Criteria**	**Intervention**	**Control Type**	**Participant**	**Outcome (Measure)**	**Cultural Tailoring**
Drožđek et al., 2013	NRCT	The Netherlands	18-70 years old; male from Iran/Afghanistan; PTSD diagnosis based on the DSM-IV; higher functional levels of object relations; had attachment capacities; able to establish interpersonal trust, tolerate strong affects and high anxiety arousal; shared similar trauma with other group members; willing to respect confidentiality and share; excluded: actively suicidal/homicidal, concurrent dependency on alcohol/drugs, psychotic, severely paranoid, antisocial personality disorder, severe cognitive	*MN:* 3-in-3 (3 non-verbal therapy sessions and 2 group psychotherapy sessions in 3 days) *S:* Outpatient facility *MO:* Group *D(A):* 3 days/week, 1 year *P:* Therapist		*N*=66 *COO*: Afghanistan, Iran *M*: 100% *A*: *M*=38.3/ *SD*=8.2/*range*= 22-58 *R*: NA	Depression (HSCL-25) PTSD (HTQ) Anxiety (HSCL-25)	Language

			impairment, violent/impulsive, risk for bullying/monopolizing/ scapegoating during group				
Author(s)	**Study Type**	**Study Country**	**Inclusion Criteria**	**Intervention**	**Control Type**	**Participant**	**Outcome (Measure)**	**Cultural Tailoring**
Fox et al., 1997	RCT	US	Southeast Asian refugee women	*MN:* Home Visit Intervention *S:* Home *MO:* Individual *D(A):* Biweekly 2-hour sessions, 10 weeks *P:* School nurses, teachers	No Treatment	N=58 *COO:* Cambodia, Vietnam *F:* 100% *A: M*=42/ *range*=29-71	Depression (HSCL-25)	Language
Goodkind et al., 2020	RCT	US	≥ 18 years old; from Afghanistan, the Great Lakes Region of Africa, Iraq, or Syria; arrived in the U.S. in the past 3 years; lived near the study location; at least one adult in the household available to participate	*MN:* Refugee Wellbeing Project *S:* Apartment community center *MO:* Individual *D(A):* Weekly 2-hour learning circles, 6 months/4+-hour advocacy activities (average learning circles 12 hours and average advocacy 72.11 hours) *P:* College students	WL	*N*=290 *COO*: Afghanistan, Iraq, Syria, *F:* 52% *M:* 48% *A: M*=34.6/ *SD*=11.53/ r*ang*e=18-71 *R: M*=2.5 years	Depression (HSCL-25) Anxiety (HSC-25) General Psychopathology (General Emotional Distress)	Language Provider Community
Hijazi et al., 2014	RCT	US	Adult; Arabic-speaking refugees from Iraq; exposed to a violent or traumatic event related to	*MN:* Brief NET *S:* Home, church, community center *MO:* individual	WL	*N*=63 *COO*: Iraq *F:* 55.6%	Depression (BDI-II) PTS	Language Community

			being a refugee, to the war, or to sectarian strife; concurrently bothered by the event, recurrent thoughts, or felt like not having overcome it	*D(A):* Three 60-90-minute weekly sessions (100% attendance, 2 excluded for incomplete attendance) P: Therapist		*M:* 44.4% *A: M*=48.2/ *SD*=8.9 *R*: *M*=2.3 years	(HTQ) Somatization (PHQ-15) Well-being (WHO-5)	
Author(s)	**Study Type**	**Study Country**	**Inclusion Criteria**	**Intervention**	**Control Type**	**Participant**	**Outcome (Measure)**	**Cultural Tailoring**
Hinton et al., 2005	RCT	US	Lived through the Cambodian genocide (6+ years old then); treatment resistant after one year of counseling and SSRI treatment; meets the PTSD criteria based on the SCID; excluded: inability to give informed consent, psychosis in the past year	*MN:* CA-CBT *S:* Community outpatient clinic *MO:* Individual *D(A):* Weekly, 12 weeks *P:* Psychiatrist	WL	*N*=40 *COO:* Cambodia *F*: 60% female, *M:* 40% male *A: M*=51.8/ *SD*=6.80 *R*: NA	PTSD (CAPS) Anxiety (ASI)	Language Community Culture
Jeon et al., 2020	NRCT	South Korea	Checked out of a government resettlement center during 2012-2013; excluded: severe suicide risk, severe alcohol dependency, high level of aggressiveness, cognitive impairment, low Korean language literacy, required psychiatric hospitalization	*MN:* CBT *S:* NA *MO:* Group *D(A):* 8 weekly 90-minute sessions, 8 weeks *P: NA*		*N*=38 *COO:* South Korea *F*: 92% *M*: 8% *A*: *M*=37.87/ *range*=20-60 *R*: NA	Depression (CES-D) PTSD (IES-R) Anxiety (STAI-S)	Language Community Culture

Author(s)	Study Type	Study Country	Inclusion Criteria	Intervention	Control Type	Participant	Outcome (Measure)	Cultural Tailoring
Kananian et al., 2020	RCT	Germany	≥18 years old; male; trauma- and stress-related disorder/depressive disorder/anxiety disorder/somatoform disorder according to the DSM-5; scored ≥ 11 on the GHQ-28; excluded: acute suicide risk, acute psychotic episode, personality disorder, substance-related and dependency disorders	*MN:* CA-CBT+ *S:* University outpatient clinic *MO:* Group *D(A):*12 90-minute sessions *P:* Therapist	WL	*N*=24 *COO*: Afghanistan, Iran *M:* 100% *A: M*=22.1/ SD=3.6/ *range*=18-29 *R: M*=1.82 years	Depression (PHQ-9) PTSD (PCL-5) Somatization (SSS), QOL (WHOFOL-BREF) General Psychopathology (GHQ-28)	Language Provider Community Culture
Kim & Atteraya, 2015	RCT	South Korea	Female North Korean refugees; married	*MN:* Thank you-Sorry-Love *S:* NA *MO:* Group *D(A):* 6 sessions, 6 weeks *P:* Counselor	No Treatment	*N*=16 *COO*: North Korea *F:* 100% *A: M*=39.5 *R*: *M*= 4.7 years/ *range*= 1-7 years	Social Functioning (The Social Adaptation Scale)	Language Community
Kinzie et al., 2012	NRCT	US	Refugees	*MN:* Clinic Treatment *S:* Refugee psychiatric clinic *MO:* Individual *D(A):* 1 year (on average 8 psychiatrists' visits, range=4-17; on average 6 counselors' visits, range=1-25)		*N*=2 *COO:* Iran, Afghanistan *F:* 49% *M:* 41% *A: M*=48/	Depression (HSCL-25) PTSD (HTQ) Anxiety (HSCL-25) Well-being	Language Provider

			P: Psychiatrist, ethnic counselor		*range*=19-76 *R*: *M*=6 years/ *range*= 1-13 years	(WHO-5) Somatization (SCL-90) Functional Impairment (SDS)	
Author(s)	**Study Type**	**Study Country**	**Inclusion Criteria**	**Intervention**	**Control Type**	**Participant**	**Outcome (Measure)**	**Cultural Tailoring**
Lehnung et al., 2017	NRCT	Germany	Arabic-speaking refugees from Syria/Iraq; arrived in Germany in the past 5 months; requested psychological treatment	*MN:* EMDR G-TEP *S:* NA *MO:* Group *D (A):* Two 2-hour sessions, 2 days (100% attendance) *P:* NA	WL	*N*=18 *COO*: Syria, Iraq *F:* 22% *M:* 78% *A: M*=32.4/ *SD*= 5.6/ *range*=19-45 *R: range*= 0-5 months	Depression (BDI-II) PTSD (IES-R)	Language
Luy, 2013	NRCT	US	Southeast Asian refugees; resettled in the U.S. during 1980s-1990s	*MN:* Mindfulness-Based *S:* Group Counseling *MO:* Refugee mental health clinic *S:* Group *D(A):* Weekly 1.5-2-hour sessions, 10 weeks *P:* Counselors, guest speakers		*N*=66 *COO:* Vietnam, Cambodia *F:* 63.6% *M:* 36.4% *A: M*=56/ *range*=28-74	General Functioning (GAF) Functional Impairment (SDS)	Language Provider Culture
Mitschke, et al., 2013	NRCT	US	≥18 years old; spoke or read Nepali and/or English;	*MN:* Financial Literacy Plus *S:* Community center *MO:* Group *D(A):* Weekly 2-hour		*N*=48 *COO:* Bhutan *F:* 100% *A: M*=37.64/	Depression (PHQ-SADS) PTSD	Language Community Culture

			resettled to the U.S. in the past 3-12 months	sessions, 12 weeks *P:* Agency staff		*SD*=13.49 *R: range* =3-12 months	(PCL-C) Anxiety (PHQ-SADS) Somatization (PHQ-SADS)	
Author(s)	**Study Type**	**Study Country**	**Inclusion Criteria**	**Intervention**	**Control Type**	**Participant**	**Outcome (Measure)**	**Cultural Tailoring**
Mollica et al., 1990	NRCT	US	Received treatment at the clinic during January-June 1984	*MN:* Clinic Treatment *S:* Psychiatry clinic *MO:* Individual *D(A):* Weekly sessions, 6 months *P:* Psychiatrist, social worker, ethnic mental health worker		*N*=52 *COO*: Cambodia, Laos, Vietnam *F*: 52% *M*: 48% *A*: Mostly middle-aged *R:* NA	Depression (HSCL-25) Anxiety (HSCL-25)	Provider
Northwood et al., 2020	RCT	US	18-65 years old; Karen refugees; MDD based on the DSM-V; excluded: concurrent enrollment in individual psychotherapy/mental health case management, active psychosis (not culturally derived or trauma-related), chemical dependency, reported problems with non-prescribed drugs or alcohol, required higher level of care	*MN:* Intensive Psychotherapy and Case Management *S:* Primary care clinic *MO:* Individual *D(A):* Weekly/bi-weekly 45-60-minute sessions, 1 year (on average 41.27 psychotherapy and 38.31 case management sessions) *P:* Psychotherapist, case manager	TAU (usual behavioral health services)	*N*=214 *COO:* Burma *F:* 79.9% *M:* 20.1% *A: M*=42.76/ *SD*=3.28 *R: M*= 4.29 years	Depression (HSCL-25) PTSD (PDS) Anxiety (HSCL-25) Social Functioning (SCFI-37)	Language

Author(s)	Study Type	Study Country	Inclusion Criteria	Intervention	Control Type	Participant	Outcome (Measure)	Cultural Tailoring
Otto et al., 2003	RCT	US	Cambodian women; failed to respond to clonazepam	*MN:* Sertraline Plus CBT *S:* Temple *MO:* Group *D(A):* 10 sessions of CBT, mean dosage of 100mg sertraline *P:* NA	TAU (Sertraline alone)	*N*=10 *COO*: Cambodia *F*: 100% *A: M*=47.2 *R*: NA	Depression (HSCL-25) PTSD (CAPS) Anxiety (HSCL-25) Somatization (SCL-90R)	Language Community Culture
Shaw, et al., 2019	RCT	Malaysia	≥18 years old; female refugee/asylum-seeker; lived in Malaysia; Dari-speaking; scored ≥12 on items 1-14 on the RHS or had other mental health symptoms	*MN:* Somatic-focused CA- CBT *S:* NA *MO:* Group *D(A):* 8 weekly sessions (80% sessions attended) *P*: Social worker, lay ethnic therapist	WL	*N*=39 *COO*: Afghanistan *F*: 100% *A: M*=33 *R: M*=1.8 years	Depression (HSCL-25) PTSD (HTQ) Anxiety (HSCL-25)	Language Provider Culture
Stade et al., 2015	NRCT	Denmark	≥18 years old; admitted to treatment during April 2008-June 2009; refugees/asylum seekers in Denmark or reunited with a refugee through family reunification; concurrently had trauma-related mental health problems; excluded: psychotic disorder, required psychiatric hospitalization, severe	*MN:* Basic Body Awareness Therapy *S:* Specialized outpatient psychiatric treatment/research clinic *MO:* Group *D(A):* Weekly 90-minute sessions, 14 weeks (average attendance 8.6 sessions for female and 8 sessions for male) *P:* Physiotherapist		*N*=9 *COO*: Iraq, Saudi Arabia, Lebanon *F:* 56% *M:* 44% *A: M*=47.3/ *SD*=5.85 *R:* M= 17.2 years	Depression (HSCL-25) PTSD (HTQ) Anxiety (HSCL-25) Well-being (WHO-5) Somatization (SCL-90) Functional Impairment (SDS)	Language Culture

			drugs/alcohol dependency, had physical disabilities preventing active participation					
Author(s)	**Study Type**	**Study Country**	**Inclusion Criteria**	**Intervention**	**Control Type**	**Participant**	**Outcome (Measure)**	**Cultural Tailoring**
Stenmark et al., 2013	RCT	Norway	≥18 years old; PTSD according to the DSM-IV criteria; excluded: psychotic disorders, concurrent severe substance dependency, severe suicidal ideations	*MN:* NET *S:* Psychiatric health care units *MO:* Individual *D(A):* Weekly 90-minute sessions, 10 weeks *P:* Experienced mental health professionals trained in NET	TAU (any treatment except for NET)	*N*=81 *COO:* Afghanistan, Iraq *F:* 31.9% *M:* 69.1% *A: M*=35 *R: M*= 4.68 years	Depression (HAM-D) PTSD (CAPS)	Language
Tay et al., 2022	RCT	Malaysia	PTSD/complex PTSD/MDD/GAD/persistent complex bereavement disorder.; witnessed/experienced at least one traumatic event related to mass conflict; excluded: younger than 18 years old, severe cognitive impairment, psychosis	*MN:* Integrative Adapt Therapy *S:* Community offices, home *MO:* Individual *D(A):* 6 weekly 45-minute sessions (average 5.5 sessions attended) *P:* Lay counselor	TAU (CBT)	*N*=322 *COO*: Burma *F*: 28.1% *M*: 71.9% *A: M*=30.8/ *SD*= 9.6/ *range*=18-79 *R*: A	Depression (RMHAP) PTSD (RMHAP) Anxiety (RMHAP)	Language Provider Community Culture
ter Heide et al., 2011	RCT	The Netherlands	≥18 years old; refugees and asylum seekers recently referred for treatment; PTSD based	*MN:* EMDR *S:* Treatment center for psychotrauma disturbances resulting from persecution,	TAU (eclectic treatment for trauma)	*N*=10 *COO*: Afghanistan, Bosnia, Iran,	Depression (HSCL-25) PTSD	Language

			on the DSM-IV/met the criteria except for one C-criterion; been on a stable dose for their medication for at least two months; excluded: required care at another facility, suffered from serious depression, psychotic disorder, bipolar disorder, substance dependence, eating disorder, high suicidal intent	war, and violence *MO:* Individual *D(A):* Weekly 90-minute session, 11 weeks (50% drop-out) *P:* Psychotherapists, psychiatrist, health care psychologists		Iraq, Lebanon, Turkey *F:* 40% *M*: 60% *A: M*=41.5/ *SD*=8.65 *R: M*= 10.25 years	(HTQ) Anxiety (HSCL-25) QOL (WHOQOL-BREF)	
Author(s)	**Study Type**	**Study Country**	**Inclusion Criteria**	**Intervention**	**Control Type**	**Participant**	**Outcome (Measure)**	**Cultural Tailoring**
White-Baughan, 1990	RCT	US	≥18 years old; immigrated to the U.S. in the past 10 years; scored ≥ the mean on the SCL-90R/met 3/4 PTSD screening criteria based on the DSM-III-R	*MN:* Problem Solving Intervention + Educational Videos *S:* Home *MO:* Individual *D(A):* Seven 2-3-hour sessions *P:* Field trainers	WL	*N*=93 *COO*: Cambodia *F:* 67.47% *M:* 32.5% *A: M*=42/ *range*=23-65 *R: range*= 2 months-10 years	Depression (SCL-90R) Anxiety (SCL-90R) Somatization (SCL-90R)	Language Provider Community Culture
Yurtsever et al., 2018	RCT	Turkey	≥18 years old; Syrian refugees; living in the refugee camp; scored ≥33 on the IES-R; excluded: pregnancy, cognitive impairment, had	*MN:* EMDR G-TEP *S:* Refugee camp *MO:* Group *D(A):* Two 4-hour sessions, 3 days (100% attendance)	No Treatment	*N*=47 *COO*: Syria *F*: 76.6% *M*: 23.4% male *A: M*=37.45/ *SD*=11.08	Depression (BDI-II) PTSD (IES-R)	Language Community

	psychosis, used psychiatric mediation, concurrently received psychotherapy	*P:* Professionals with EMDR training	*R:* NA

Note: A: age in years; ACT: Act and Commitment Therapy; ADAPT: Adaptation and Development After Persecution and Trauma; ASI: Anxiety Sensitivity Index; BDI-II: Beck Depression Inventory-II; CAPS: Clinician Administered PTSD Scale; CBT: cognitive behavioral therapy; CBT-CA+: culturally adapted CBT; COO: country of origin; D(A): treatment duration (treatment attendance/adherence); DSM: Diagnostic and Statistical Manual of Mental Disorders; EMDR: eye movement desensitization reprocessing; EMDR G-TEP: EMDR Group Traumatic Episode Protocol; F: female; GAD: generalized anxiety disorder; GAF: Global Assessment of Functioning Scale; GHQ: General Health Questionnaire; HAM-A: Hamilton Anxiety Rating Scale; HAM-D: Hamilton Depression Rating Scale; HABDI: Hmong Adaptation of the Beck Depression Inventory (HABDI); HPQ: Health Promotion Questionnaire; HSCL-25: The Hopkins Symptom Checklist-25; HTQ: Harvard Trauma Questionnaire; ICD-10: The Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems; IES-R: Impact of Event Scale; M: male; MDD: major depressive disorder; MN: main intervention name; MO: modality; NET: narrative exposure therapy; PCL-5: P: provider title; PDS: Posttraumatic Diagnostic Scale; PHQ: Patient Health Questionnaire; PTSD: posttraumatic stress disorder; PTSS: posttraumatic stress symptom(s); QOL: quality of life; R: resettlement length; RHS: Refugee Health Screening; RMHAP: the Refugee Mental Health Assessment Package ; S: setting; SCFI-37: The Social Circumstances and Social Functioning Inventory; SCID: Structured Clinical Interview; SCL-90R: Symptom Checklist Revised; SDS: Sheehan Disability Scale; SPRINT: Sprint-Short Posttraumatic Rating Interview; SSRI: selective serotonin reuptake inhibitor; SSS-8: The Somatic Symptom Scale-8; STAIS: State-Trait Anxiety Inventory-State; TAU: treatment as usual; WHO-5: The World Health Organization-5 Well-Being Index; WHOQOL-BREF: World Health Organization Quality of Life Scale; WL: waitlist.

Table 3. Pooled Effect Sizes for Post-Intervention Depressive Outcomes by Moderation Variables

	Meta-regression	Variable	*N*	*SMD (SE)*	*CI*	I^2
Intervention Characteristics						
Control Type	Q_M (1) = 4.14, p = 0.03					
		No-treatment	8	-0.60 (0.18)	[-0.95, -0.25]	I^2 = 66.01%
		Some-treatment	4	-0.12 (0.08)	[-0.28, 0.04]	I^2 = 0%
Intervention Modality	Q_M (1) = 4.91, p = 0.03					
		Group	5	-0.83 (0.24)	[-1.31, -0.36]	I^2 = 45.81%
		Individual	7	-0.26 (0.12)	[-0.50, -0.03]	I^2 = 66.26%
Intervention Type	Q_M (2) = 11.74, p = 0.002					
		CA-CBT	2	-1.44 (0.32)	[-2.07, -0.82]	I^2 = 0%
		EMDR	2	-0.53 (0.26)	[-1.04, -0.02]	I^2 = 0%
		NET	2	-0.17 (0.19)	[-0.54, 0.21]	I^2 = 0%
Trauma-focused Intervention	Q_M (1) = 0.99, p = 0.32					
		Trauma-focused	5	-0.21 (0.10)	[-0.41, -0.01]	I^2 = 0%
		Not trauma-focused	7	-0.57 (0.20)	[-0.96, -0.17]	I^2 = 82.31%

	Meta-regression	Variable	*N*	*SMD (SE)*	*CI*	I^2
Intervention Length # Sessions	Q_M (1) = 0.04, p = 0.84					
Intervention Length # Days	Q_M (1) = 0.33, p = 0.57					
Cultural Tailoring # Tailored Categories	Q_M (1) = 1.71, p = 0.19					
Participant Characteristics						
COO-specific	Q_M (1) = 0.17, p = 0.68					
		Specific	4	-0.57 (0.32)	[-1.20, 0.06]	I^2 = 68.78%
		Multiple	8	-0.39 (0.13)	[-0.64, -0.13]	I^2 = 70.23%
Symptom Eligibility	Q_M (2) = 17.82, p = 0.001					
		Score Threshold	4	-0.67 (0.10)	[-0.86, -0.48]	I^2 = 0%
		DSM/ICD diagnosis	4	-0.36 (0.24)	[-0.84, 0.12]	I^2 = 84.20%
		None	4	-0.17 (0.16)	[-0.47, 0.13]	I^2 = 0%

Note: CA-CBT: culturally adapted cognitive behavioral therapy; COO: country of origin; DSM: Diagnostic and Statistical Manual and Mental Disorders; ICD: International Classification of Diseases.

Figure 1. Preferred Reporting Instrument for Systematic Reviews and Meta-Analysis (PRISMA) Flowchart

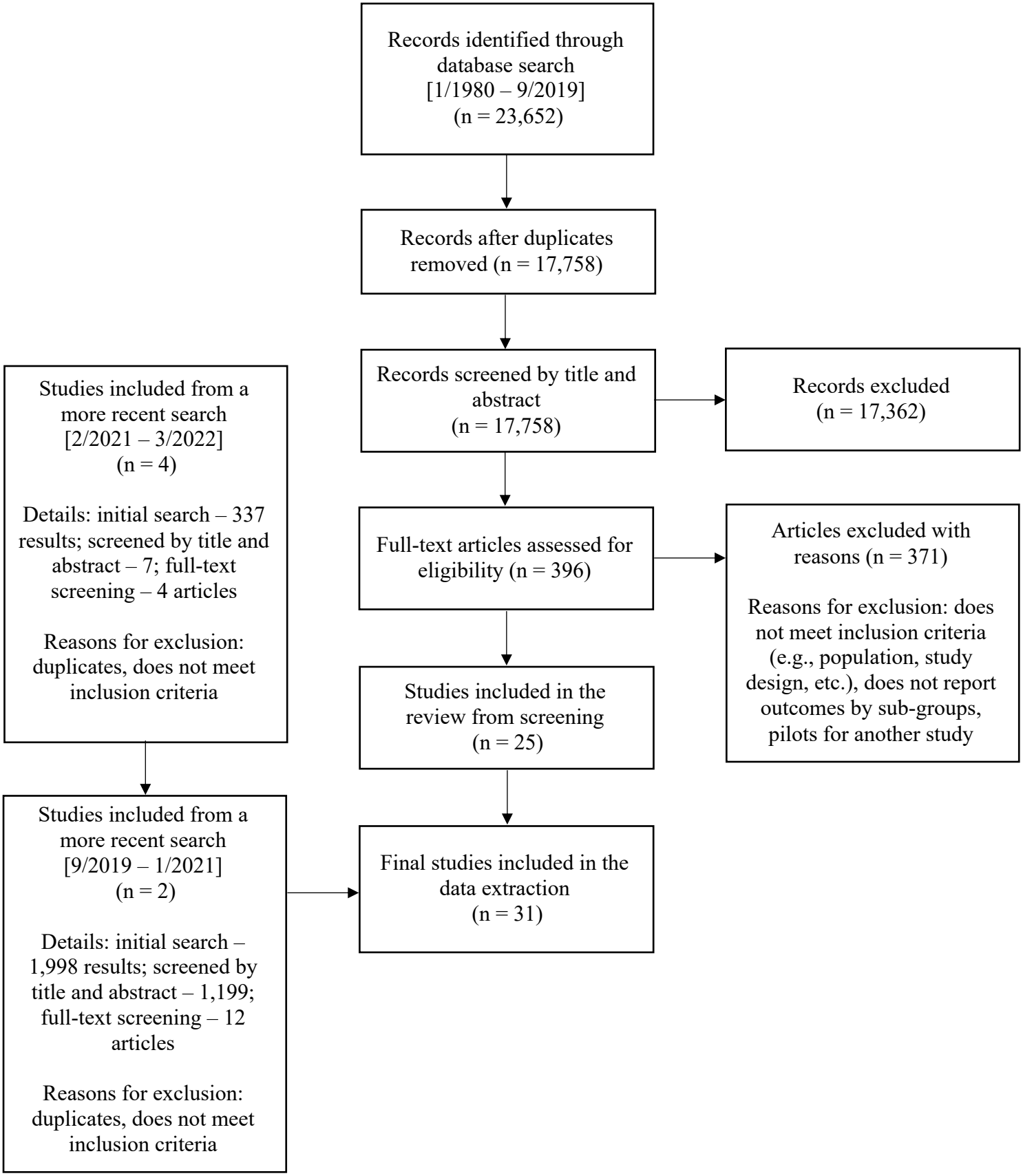


Figure 2. Detailed RCT Risk of Bias

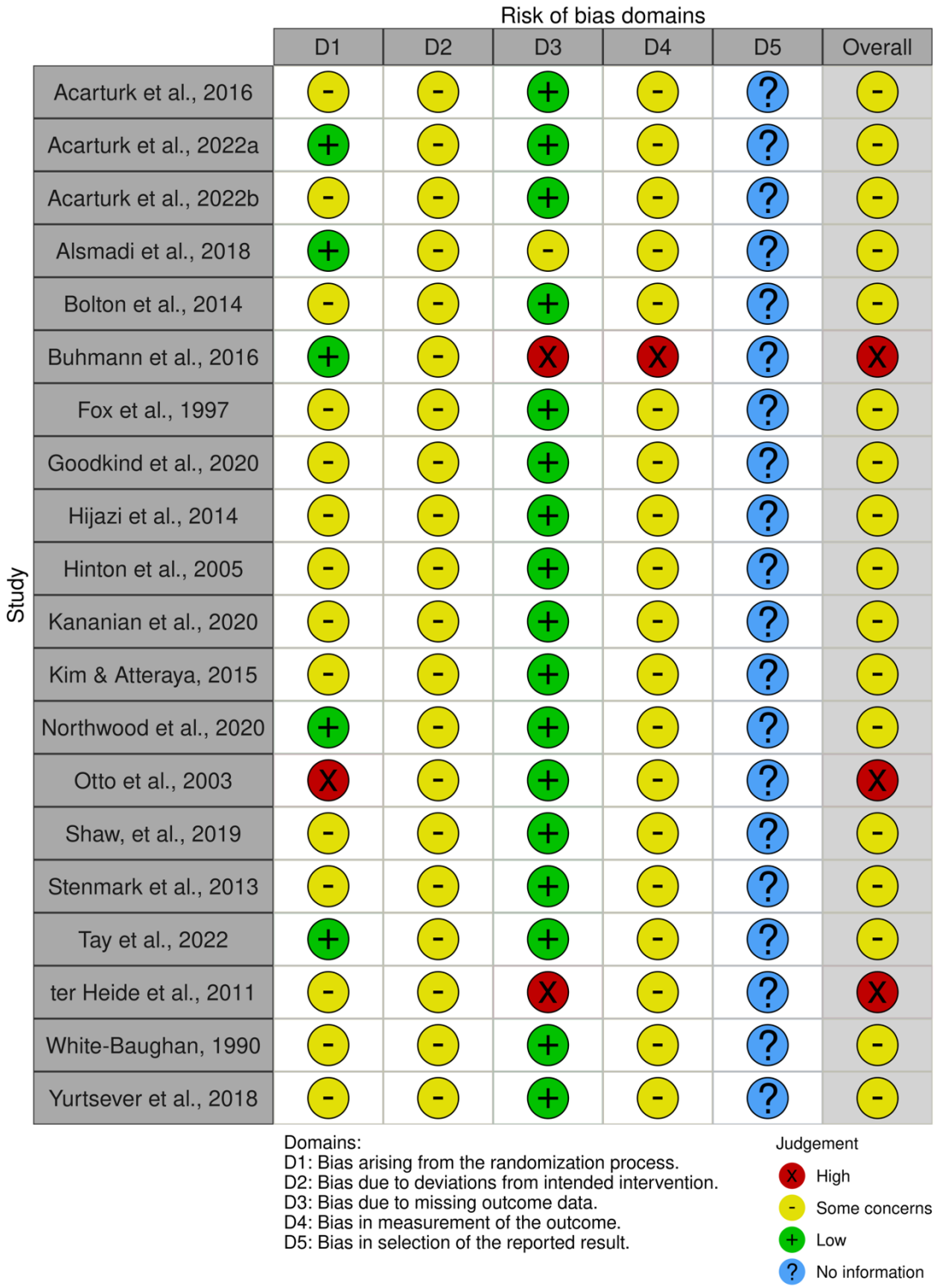


Figure 3. RCT Risk of Bias Summary

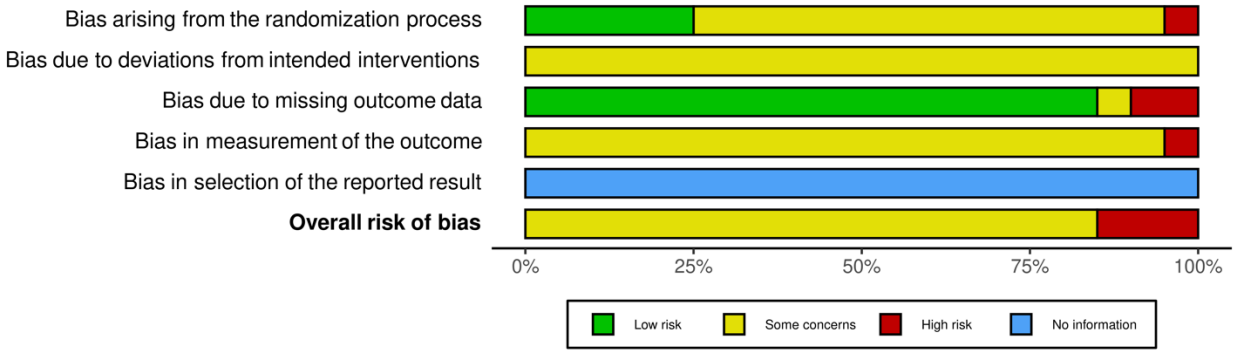


Figure 4. Detailed NRCT Risk of Bias

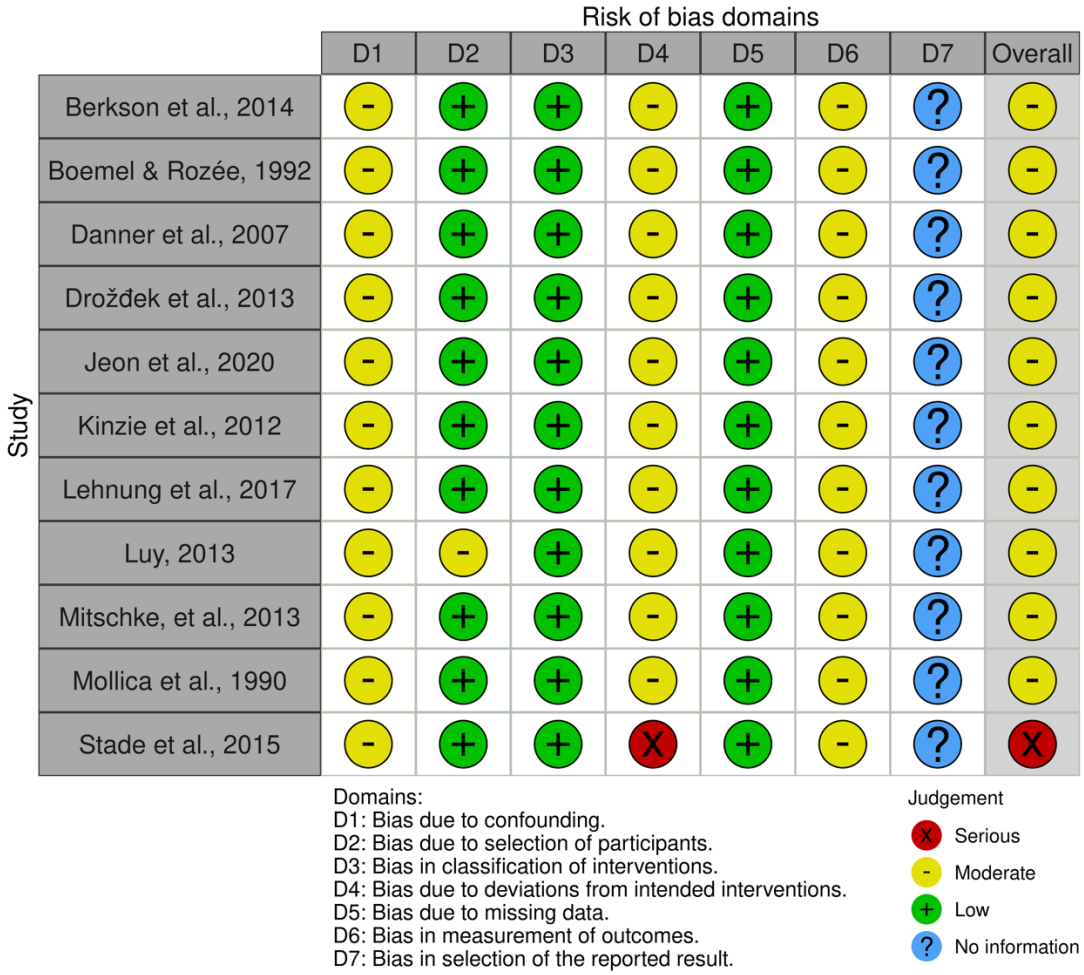


Figure 5. NRCT Risk of Bias Summary

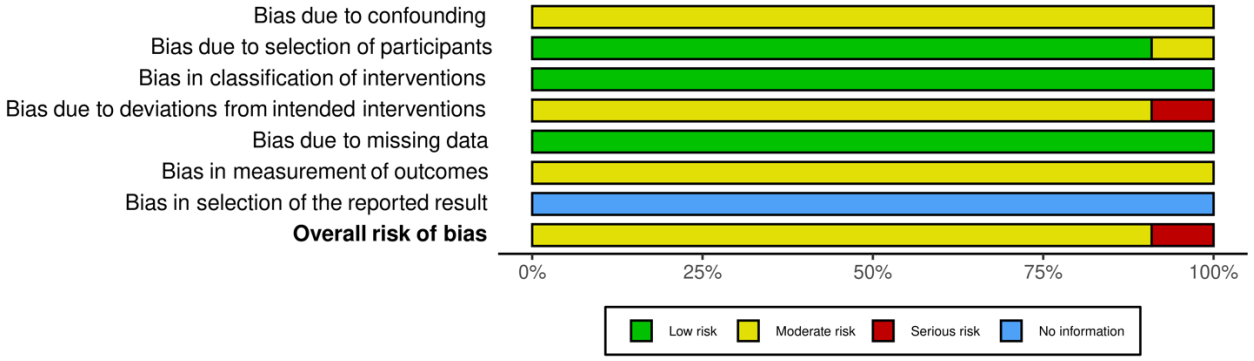


Figure 6. SMDs for Depressive Symptoms at Post-Intervention

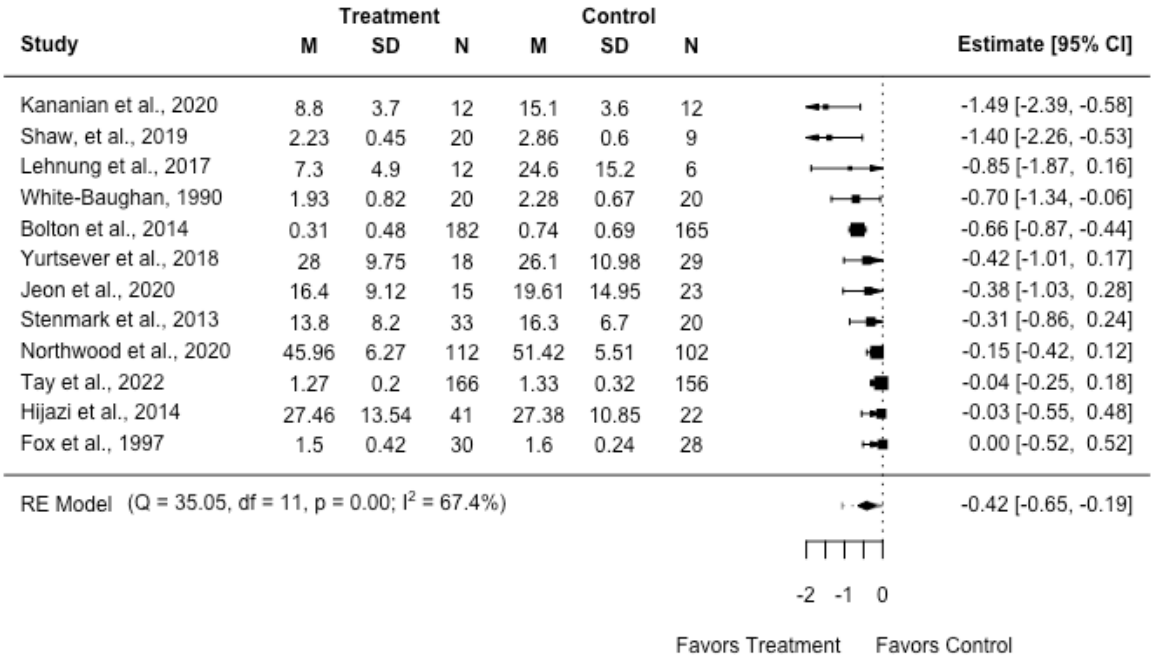


Figure 7. Publication Bias for Depressive Symptoms at Post-Intervention

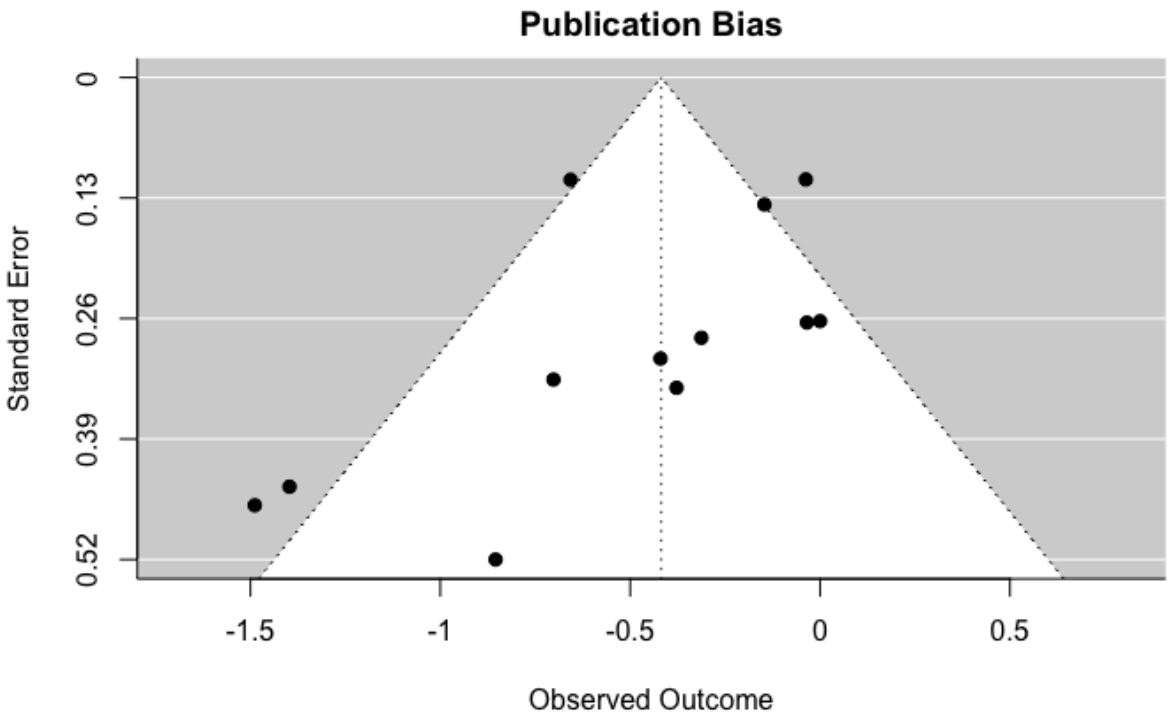


Figure 8. SMDs for Posttraumatic Stress at Follow-up

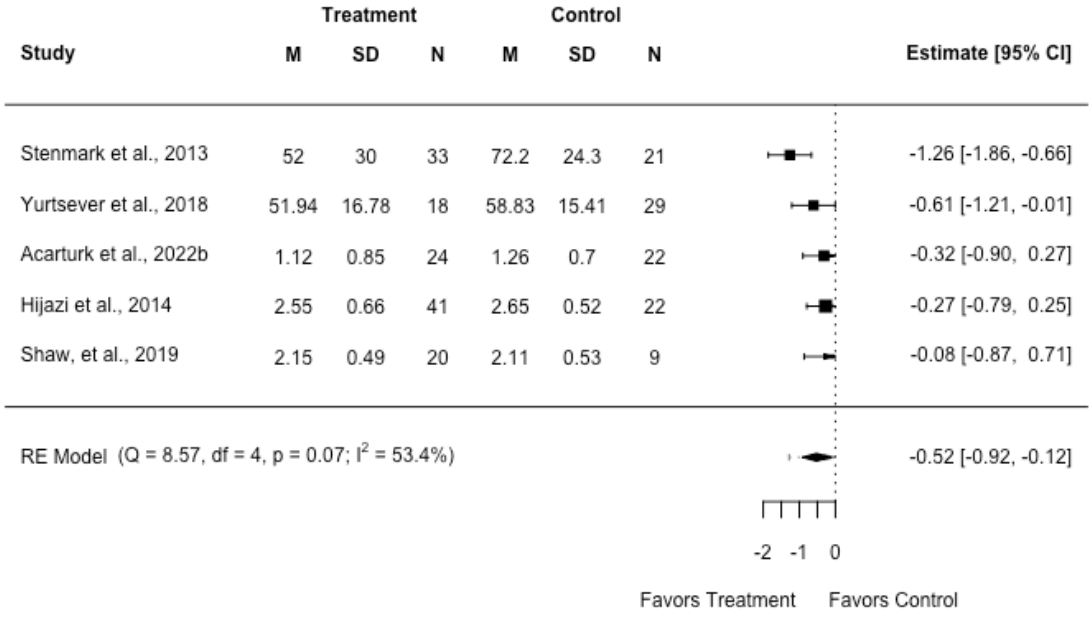
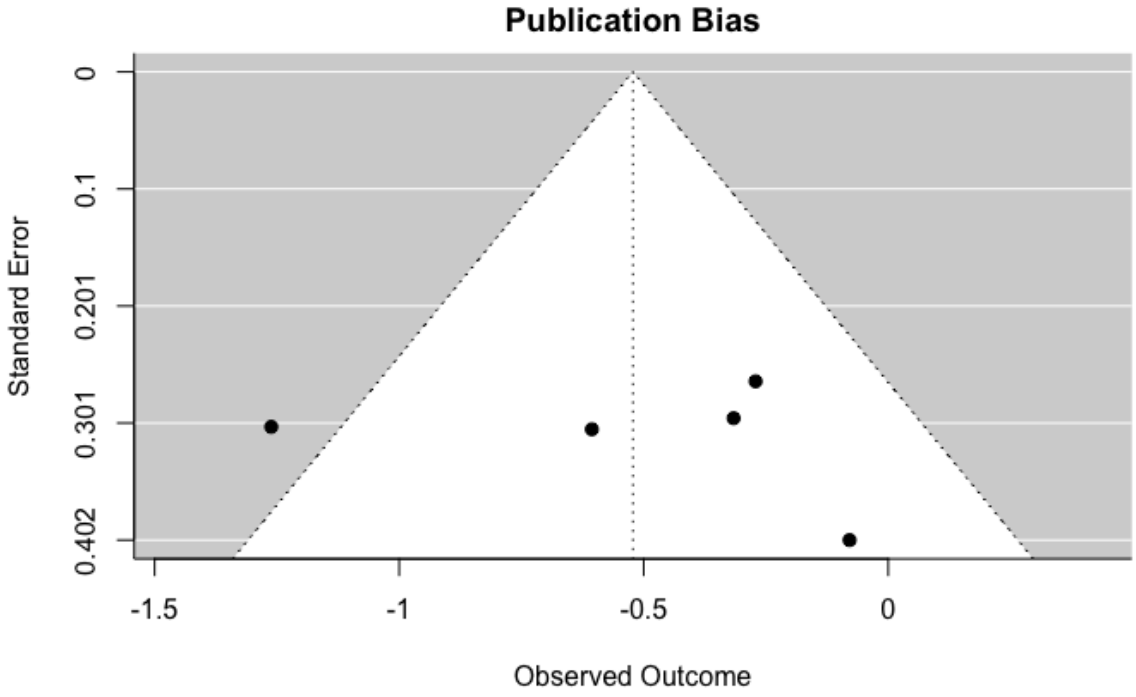


Figure 9. Publication Bias for Posttraumatic Stress at Follow-up



Appendix A. Search Terms

Treatment Type	Treat* OR program* OR psychother* OR psycho* OR intervention* OR counsel* OR support OR mental
AND	
Refugees, IDPs, and asylum seekers	Refugee* OR "internally displaced person*" OR "asylum seek*" OR migrant* OR torture OR persecut* OR "forced migration"
AND	
Asian origins	Asia* OR Afghan* OR Bahrain* OR Bhutan* OR Baharna* OR Banglades* OR Brunei* or Burm* OR Cambodia* OR Chin* OR Cypr* OR India* OR Indonesia* OR Iran* OR Iraq* OR Israel* OR Japan* OR Jordan* OR Kazakhs* OR Kuwait* OR Kyrgyz* OR Lao* OR Leban* OR Malay* OR Maldi* OR Mongolia* OR Myanmar* OR Nepal* OR Korea* OR Oman* OR Pakistan* OR Philippin* OR Filippin* OR Qatar* OR Saudi* OR Singapore* OR "Sri Lanka" OR Syria* OR Tajik* OR Thai* OR Timor* OR Turk* OR Turkmen* OR Emirat* OR Uzbek* OR Vietnam* OR Yemen* OR Taiwan* OR "Hong Kong*" OR Maca*

Appendix B. Codebook for Study and Participant Information

Article ID

Basic article/study Info

- Title
- Year published
- Article source (journal article/dissertation/thesis)
- Study type (RCT/quasi-RCT/NRCT multiple intervention/NRCT single intervention)
- Country of intervention conducted
- Purpose of study (page #)

Sample size (final analysis total)

Participant info

- Participant forced migrant status and %
- Special sub-group whining forced migrants
- Asian participant ethnicity
- Asian participant COO
- % of Asian participants out of all participants receiving treatments
- Gender and N
- Gender and %
- Age M
- Age SD
- Age range
- Education M
- Education range
- Employment status
- Marital status
- Resettlement length M
- Resettlement length SD
- Resettlement length range
- DSM/ICD diagnostic mental disorders
- Symptoms required pre-intervention

Study/outcome info

- Psychosocial outcome types
- All other outcomes
- Brief study description (page #)
- Types of intervention (e.g., CBT, NET)
- Author's conclusion about outcomes

Of intervention(s)

- # Groups in total
- # Treatments
- # Control group(s)
    - Type of control(s)

Treatment/control group 1/2/3 info

- Intervention name
- Modality (individual/group)
- Intervention length/frequency
- Setting
- Treatment adherence/attendance/drop-out rate
- Intervention description
- Provider title
- Provider ethnicity

Appendix C. Codebook for Cultural Tailoring

Provide page # if yes to any

Language

- Were the assessment materials linguistically tailored to participants' native language?
- Were the assessment materials culturally tailored to participants/ native language?
- Did the intervention provide any intervention materials that are in participants' native language?
- Was the intervention conducted in participants' native language (i.e., interventionists spoke participants' language)?
- Did the study involve any interpreters?

Providers

- Was the assessment provider from the same ethnic background as the participants in this study?
- Was the interventionist from the same ethnic background as the participants in this study?

Community

- Did the study utilize community/ethnic networks or local media in the promotion or recruitment process?
- Did the study involve community/ethnic members in the study/intervention development stage?
- Did the study involve community/ethnic members in the intervention implementation stage (except for professional providers)?
- Was the intervention conducted at a non-clinical community setting (e.g., church, refugee camp, community center)?

Culture

- Was the treatment content tailored according to participants' cultural or religious values/beliefs/traditions?

- Was the treatment delivery context (i.e., how it was delivery such as time, frequency, modality) tailored according to participants' cultural or religious values/beliefs/traditions?