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Culturally Adapted Cognitive Behavioral Therapy Plus Problem Management (CA-CBT+) With Afghan Refugees: A Randomized Controlled Pilot Study

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Culturally adapted cognitive behavioral therapy (CA-CBT) is a well-evaluated, transdiagnostic group intervention for refugees that uses psychoeducation, meditation, and stretching exercises. In the current study, we added problem-solving training to CA-CBT and evaluated this treatment (i.e., CA-CBT+) in a randomized controlled pilot trial with a sample of Farsi-speaking refugees. Participants ($N = 24$) were male refugees diagnosed with *DSM-5* PTSD, major depressive disorder, and anxiety disorders who were randomly assigned to either a treatment or waitlist control (WLC) condition. Treatment components were adapted both to the specific cultural background and the current social problems of asylum seekers. Assessments were performed pretreatment, 12-weeks posttreatment, and 1-year follow-up. The primary treatment outcome was the General Health Questionnaire (GHQ-28); secondary outcome measures included the Posttraumatic Stress Disorder Checklist, Patient Health Questionnaire, Somatic Symptom Scale, World Health Organization Quality of Life, and Emotion Regulation Scale. Eleven of 12 participants were randomized to CA-CBT+ completed treatment. Based on intent-to-treat data, large between-group effect sizes were seen at posttreatment in the GHQ-28, $d = 3.0$, and for most secondary outcome measures. Improvements for individuals in the treatment group decreased at 1-year follow-up, but effect sizes demonstrated continued large improvements on all measures as compared to pretreatment levels. In summary, CA-CBT+ led to large improvements in general psychopathological distress and quality of life, which were maintained in the long term. In addition, the dropout rate was very low, with delivery in group format. Thus, problem-solving training appears to be a promising addition to CA-CBT.

Most refugees and asylum seekers arriving in host countries have faced many traumatic experiences, such as war, armed conflict, kidnapping, the murder of family members, torture, imprisonment, and physical and sexual violence (United Nations High Commissioner for Refugees, 2017). Recent findings (Bogic et al., 2015; Rohlof et al., 2014; Turrini et al., 2017) provide evidence that asylum seekers and refugees who migrate to Western countries suffer not only from posttraumatic stress disorder (PTSD; 21%–54%) but also from a variety of

other mental disorders, with high comorbidity rates, including depression (20%–56%), anxiety disorders (40%–56%), and somatoform symptoms (37%).

The treatment of highly stressed, traumatized refugees is complicated by cultural barriers and other clinical challenges. Besides enduring traumatic events in their home countries, the flight itself is often associated with traumatic, life-threatening experiences. Additional distress caused by postmigration stressors, such as acculturation stress, the placement in provisional collective housing, and the insecure outcome of asylum proceedings, contributes to the maintenance and aggravation of mental disorders (Li et al., 2016; Miller & Rasmussen, 2017; Schock et al., 2016). Considering the large spectrum and high comorbidity of mental disorders in asylum seekers and refugees, a transdiagnostic treatment that focuses on common psychological factors that have a role in maintaining mental disorders appears to be most appropriate.

Another challenge with regard to Western psychological treatments is to how to adapt interventions to the specific needs of ethnic groups (Barrera et al., 2013; Harper Shehadeh et al., 2016). For instance, evidence from qualitative studies conducted via interviews with Afghan populations (Alemi

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et al., 2016; Sulaiman-Hill & Thompson, 2011; Yaser et al., 2016) demonstrates that the perception and expression of symptoms as well as the conceptualizations of mental disorders and treatment differ from those found in Western culture. Finally, the perceived stigma surrounding mental disorders (Yaser et al., 2016) may reduce adherence to trauma-focused group interventions.

In addition to cultural adaptation and a transdiagnostic approach, treatment in a group setting may provide some advantages in refugees, such as discussion among peers about mental health problems and treatments (Priebe et al., 2016). Routine mental health care is usually provided in an individual format, but group treatment may bridge the barriers to psychological treatment for a larger number of refugees and increase scalability.

A recent, methodologically strict meta-analysis (Turrini et al., 2019) provided evidence that cognitive behavioral therapy (CBT) is effective in reducing the symptoms of PTSD, depression, and anxiety disorders, whereas the results for Eye Movement Desensitization and Reprocessing were inconclusive. Contrary to what has been reported in previous analyses (Nosè et al., 2017), Narrative Exposure Therapy (NET) failed to show beneficial effects. Among the different CBT approaches, culturally adapted CBT (CA-CBT; Hinton et al., 2004, 2005, 2009) showed high effect sizes. However, this treatment has been primarily evaluated in samples of refugees from Southeast Asia and Latin America. Aside from the cultural differences, refugees who migrate from the Middle East to Europe are confronted with significant postmigration distress due to the asylum process, housing conditions, and other stressors (Sijbrandij et al., 2017). As discussed previously, postmigration stressors increase psychopathological symptoms and may also contribute to the development of comorbid disorders, such as anxiety and depression (Gerritsen et al., 2006; Li et al., 2016; Nickerson et al., 2015; Norris et al., 2015; Schick et al., 2018; Tinghög et al., 2017). Therefore, interventions that target postmigration stressors, such as CA-CBT, might improve the outcome of established treatments for refugees.

Problem-solving training may be a promising add-on to psychological interventions for refugees that can enhance active coping strategies (Dawson et al., 2015; Murray et al., 2010; Sijbrandij et al., 2016). This program was implemented and evaluated by the World Health Organization (WHO) in several regions affected by war and armed conflicts and revealed promising results (Bryant et al., 2017; Sijbrandij et al., 2016).

A previous pilot study by our group in a sample of Afghan refugees also showed promising results, with a significant reduction of general psychopathological distress (Kananian et al., 2017). A major limitation of this pilot was its lack of a control group. Moreover, in a concluding evaluation session, participants expressed the need for techniques to deal with practical issues, such as housing and language acquisition. The goal of the present pilot study was to compare culturally adapted CBT plus problem solving (CA-CBT+) for Afghan refugees with a waitlist control condition (WLC), including evaluation at long-term follow-up. We hypothesized that, as compared to WLC, CA-CBT+ would be more effective with respect to improvements in general symptoms of psychopathological distress. In addition, we expected that CA-CBT+ would improve quality of life, reduce symptoms of depression and posttraumatic stress disorder (PTSD), reduce somatic symptoms, and improve emotion regulation. Finally, we hypothesized that symptom reduction in the treatment group would be maintained at 1-year follow-up.
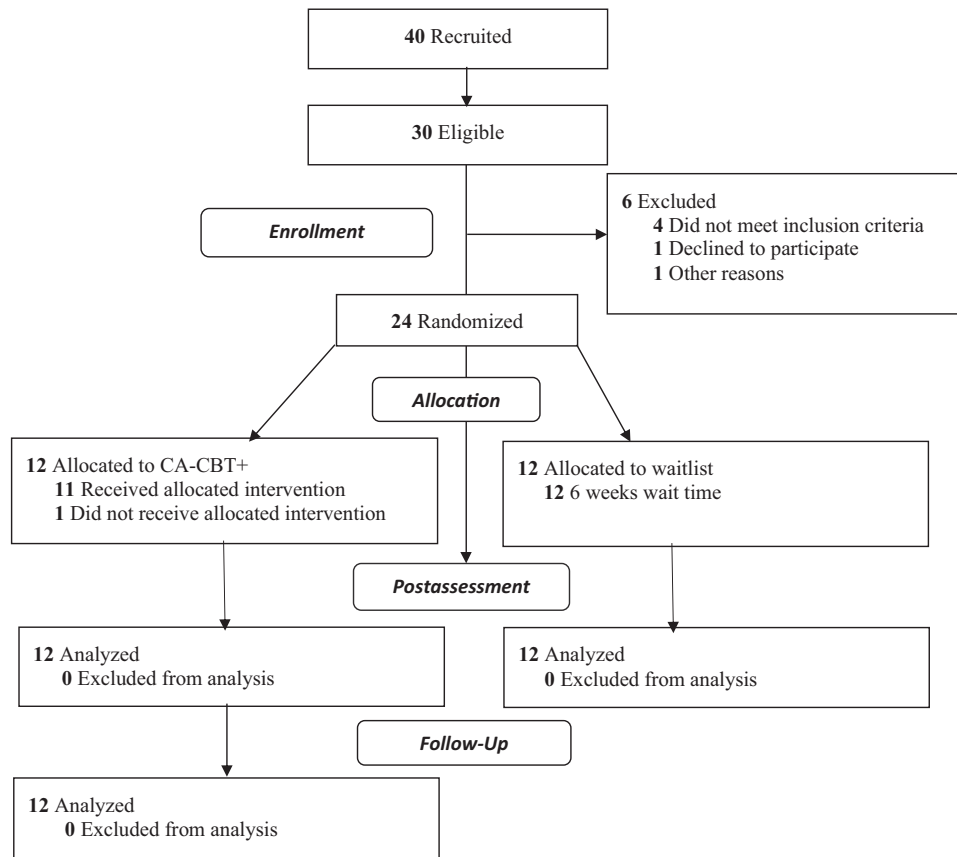
Method

Participants and Procedure

The study was carried out between November 2018 and March 2019 in the Outpatient Clinic of the Department of Psychology at Goethe University Frankfurt (trial registration: DRKS00016154). All procedures were approved by the institutional review board of the University hospital Frankfurt. Furthermore, the study was compliant with the Consort Clinical Trial Guidelines for Nonpharmacological Treatments (Boutron et al., 2008).

Participants were recruited via flyers and posters placed in refugee camps or from clients referred to the Counseling Center for Refugees at Goethe University; for the CONSORT diagram, see Figure 1. The inclusion criteria were (a) a diagnosis of trauma- and stressor-related disorder, depressive disorder, anxiety disorders, or somatoform disorder, per the criteria in the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed. [*DSM–5*]; American Psychiatric Association, 2013); (b) a General Health Questionnaire (GHQ-28) score of at least 11; (c) native language of Farsi or Dari; (d) age older than 18 years; and (e) male gender. The inclusion criteria were chosen to ensure all participants had a level of psychopathological distress that was of clinical relevance. The exclusion criteria included acute suicide risk, acute psychotic episode, a *DSM-5* Cluster B (i.e., dramatic and erratic) personality disorder, or the presence of substance-related and addictive disorders. All inclusion and exclusion criteria were assessed using the Mini-International Neuropsychiatric Interview (M.I.N.I.; Hergueta & Weiller, 2013; Sheehan et al., 1998) and the GHQ-28 (Goldberg et al., 1997).

A total of 40 refugees participated in a psychoeducation program delivered by the Counseling Center for Refugees at Goethe University. Refugees who were interested in participating in the study ($n = 30$) were tested for eligibility. If a participant was verified as eligible, they were randomized to the treatment group or the waitlist control condition using a 1:1 randomization ratio; as such, 24 participants were randomly assigned to the CA-CBT+ group or to the WLC group. As shown in Table 1, 21 participants came from Afghanistan, and three came from Iran. Regarding ethnicity, 15 individuals described themselves as Pashtun, six described themselves as Tajik, and three described themselves as Hazara. However, there are no significant differences between these ethnic subgroups with respect to perceptions of and coping with mental disorders, traumatic

Figure 1
CONSORT Diagram


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                    ┌─────────────────┐
                    │ 40 Recruited    │
                    └─────────────────┘
                             │
                    ┌─────────────────┐
                    │ 30 Eligible     │
                    └─────────────────┘
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		6 Excluded
	Enrollment	**4** Did not meet inclusion criteria
		1 Declined to participate
		1 Other reasons

24 Randomized

Allocation

12 Allocated to CA-CBT+
   11 Received allocated intervention
   1 Did not receive allocated intervention

12 Allocated to waitlist
   12 6 weeks wait time

Postassessment

12 Analyzed
   0 Excluded from analysis

12 Analyzed
   0 Excluded from analysis

Follow-Up

12 Analyzed
   0 Excluded from analysis

Note. CA-CBT+ = culturally adapted cognitive behavioral therapy plus problem-solving training.

exposure, or social problems. The mean participant age was 22.1 years ($SD = 3.6$, range: 18–29 years). All participants were single, and all except one had completed elementary school, which was the highest level of educational attainment in the sample. Only one participant was employed.

As refugees in Germany have unsettled life situations regarding work and residence, 12 treatment sessions were delivered within 6 weeks to avoid nonattendance or dropout caused by changes in participants' life circumstances. Each session lasted approximately 90 min. After 6 weeks, individuals in the waitlist control group also received the treatment. The assessments were conducted at baseline and posttreatment for both groups as well as at 1-year posttreatment for the CA-CBT+ group.

Treatment was delivered in one group and conducted by two Farsi-speaking therapists (S.K & Y.S.). Both therapists had a 2-day training in CA-CBT+ with D.E.H. The training focused on the implementation of CA-CBT+ modules as well as group delivery and the management of dissociation, social problems, and motivational barriers. The group program was based on the *Manual for Culturally Adapted Cognitive Behavioral Therapy* (Hinton, 2012) and augmented by a problem-solving module

based on experiences in the pilot trial (Kananian et al., 2017). Initially planned audio recordings to assess the adherence were canceled due to several participants' fear that politically sensitive statements might be dangerous.

The principal focus of the treatment was to increase resilience to past and current sources of distress (Hinton et al., 2016). Structure and content were based on the manual used by Hinton and colleagues (2016), who have applied these techniques on refugee populations from Cambodia, Vietnam, and Egypt, as well as with Latino individuals and South African tribal groups (Hinton et al., 2005, 2009; Jalal et al., 2017). Prior to the pilot trial (Kananian et al., 2017) initial adaptions to the Afghan culture included the presentation of the material in the language of the country of origin (i.e., oral and written instructions in Farsi and/or Dari), the use of cultural concepts of distress (e.g., idioms of distress such as "thinking a lot"), and culturally appropriate imagery. Focus groups with male and female Afghan refugees conducted before the pilot trial had revealed that gender-homogenous therapy groups were preferred; as such, the current study only included male participants to ensure a safe, comfortable environment and minimize trigger potential.

Table 1

Sociodemographic Characteristics of Participants at Baseline

Baseline characteristic	CA-CBT+		Waitlist control		Full sample	
	n	*%*	*n*	*%*	*n*	*%*
Marital status						
Single	11	91.7	12	100	23	95.8
Married/partnered	1	8.3	0	0	1	4.2
Highest level of education						
Primary school	12	100	10	83.3	22	91.7
None	0	0	2	16.7	2	8.3
Asylum-seeking status						
No interview yet	3	25	4	33.3	7	29.2
Interviewed and waiting	1	8.3	1	8.3	2	8.3
Interviewed and denied	7	58.3	6	50	13	54.2
Approved	1	8.3	1	8.3	2	8.3
	M	*SD*	*M*	*SD*	*M*	*SD*
Age (years)[a]	21	3.4	22.8	3.3	21.9	3.4
Months since last migration	20.9	3.5	22.7	3.8	21.8	3.7

Note. N = 24 (n = 12 each for the waitlist control and treatment conditions). CA-CBT+ = culturally adapted cognitive behavioral therapy plus problem-solving training.
[a] Participant age did not differ by condition.

Problem-solving training was based on the programs described by Rahman et al. (2016) and Sijbrandij et al. (2017) and was used to help improve coping skills related to postmigration stressors. As the Western rationale is unfamiliar in Afghan culture, the training was simplified. For example, the training included using several case vignettes illustrating how to deal with current life problems, such as accessing language courses and coping with the asylum procedure. We also included an interactive exercise for practicing problem-solving skills in dyads.

Each session started with psychoeducation on symptoms of distress and strategies to improve mental health. According to the transdiagnostic approach, several symptom groups were addressed, such as depression, vivid memories, sleep disturbances, anger, fear, and somatic complaints. Each session included yoga and stretching exercises, which the therapist demonstrated and participants practiced during the group session. This was followed by problem-solving training, which focused on individual problems and used the group as a resource for brainstorming. At the end of each session, meditation techniques were taught, including mindfulness breathing and loving–kindness meditation as well as culturally appropriate guided imagery (e.g., "Persian garden"); these techniques aimed to enhance an accepting attitude toward negative affect and increase positive affect toward the self and others (Hinton et al., 2013; Kearney et al., 2013). In addition, in most sessions, to address catastrophic cognitions, explanatory models and symptom descriptions were adapted to the cultural context of the participants. Prominent idioms of distress regarding cultural syndromes and somatic symptoms (Table 2) were also used to deliver intervention rationales in a culturally familiar

Table 2

Idioms of Distress used in Culturally Adapted Cognitive Behavioral Therapy Plus Problem-Solving Training (CA-CBT+)

Idiom of distress	Spelling	Literal translation	Meaning
زیاد فکر کردن	Ziad fekr kardan	"thinking too much"	Rumination, anxiety, intrusive thought
خود خوری	Khod-khori	"to eat oneself"	To worry, rumination
جگر خون	Jigar khoon	"liver blood"	General negative state of mind, highly distressing emotional state
غم	Gham	"sadness"	Grief, mourning
گوشه گیر	Gooshe-gir	"to occupy the corner"	Social retrieval
فشار بالا	Feshar bala	"high pressure"	To be stressed
عصبی	Assabi	"nervously"	To be angry, irritable
چرت	Chort	"daze"	Daydreaming
فشار پایین	Feshar payin	"low pressure"	Anhedonia, low energy

way (Alemi et al, 2016; Miller et al., 2006; Yaser et al., 2016). We used "thinking a lot," a syndrome of dysfunctional repetitive dysphoric cognitions that is present in many cultural groups (Hinton et al. 2016) to explain rumination, worry, and intrusive memories.

Measures

Psychiatric Disorders

Diagnostic interviews and assessments were conducted by an independent Farsi-speaking postgraduate psychologist who was blind to treatment allocation. Diagnoses were determined using the M.I.N.I. (Hergueta & Weiller, 2013; Sheehan et al., 1998), according to *DSM-5*. All self-report instruments were in Farsi. If questionnaires were not available in Farsi, the original versions were translated and back-translated by different native Farsi speakers, and discrepancies were clarified in accordance with standard procedure (van Ommeren et al., 1999). The utilization of additional psychological or psychopharmacological treatment during the trial was also assessed.

General Psychological Well-Being

The primary outcome measure was the 28-item GHQ-28 total score (Goldberg & Hillier, 1979; Goldberg et al., 1997). Items are rated on a 4-point Likert scale ranging from 0 (*not at all*) to 3 (*much more than usual*). The GHQ-28 is divided into four subscales: Somatic Symptoms, Anxiety/Insomnia, Social Dysfunction, and Severe Depression. The measure has multiple scoring procedures. We decided to use dichotomous scoring, which scores items as either 0 (no acute distress) for ratings of 0–1 or 1 (acute distress) for ratings of 2–3. The instrument has been extensively validated in Farsi speaking populations and has demonstrated excellent psychometric properties (); it has also been evaluated in Afghan refugees (Kalafi et al., 2002; Sadeghi et al., 2016). In the present sample, the Cronbach's alpha value was 0.89.

PTSD Symptoms

Symptoms of PTSD were determined using the PTSD Checklist for *DSM-5* (PCL-5; Weathers et al., 2013), which consists of 20 items that are rated using a 5-point Likert scale ranging from 0 (*not at all*) to 4 (*extremely*). The PCL-5 has demonstrated high test–retest reliability and convergent and discriminant validity (Blevins et al., 2015). Item scores are summed to a total score, with higher scores indicating a higher level of overall PTSD symptom severity. In the current study, the internal consistency was very good, Cronbach's α = .88. The Farsi version was developed through the translation process described by van Ommeren (1999).

Depressive Symptoms

Depressive symptoms were self-rated using the nine-item Patient Health Questionnaire (PHQ-9; Kroenke et al., 2001). The PHQ-9 includes items that refer to the *DSM-5* criteria for major depression and was translated into Farsi by the authors. Items are rated on a 4-point Likert scale ranging from 0 (*not at all*) to 3 (*nearly every day*). The previously translated and validated Farsi version of the PHQ-9 has demonstrated high test–retest reliability and good construct validity (Dadfar et al., 2018). Scores on the PHQ-9 can be used to determine the presence of depression and its severity depending on the following score ranges: Scores of 10–14 indicate moderate depression, 15–19 indicate moderate-to-severe depression, and 20–27 indicate severe depression. Internal consistency for the current study was very good, Cronbach's α = .88.

Somatic Symptoms

The eight-item Somatic Symptom Scale (SSS-8; Gierk et al., 2014) is used to measure somatic symptoms. Items are rated using a 5-point Likert scale ranging from 0 (*not at all*) to 4 (*very much*). The SSS-8 has demonstrated high content validity, construct validity, and internal consistency (i.e., Cronbach's α = .76; Gierk et al., 2014; Zijema et al., 2013). The SSS-8 underwent the standard procedure for translation in Farsi (van Ommeren, 1999). In the present study, the internal consistency was good (Cronbach's α = .73).

Quality of Life

Quality of life was assessed using the WHOQOL-BREF (Skevington et al., 2004), which has also been validated in Farsi and shown high reliability and validity (Nedjat et al., 2008). The questionnaire consists of 26 items in four domains—physical health, psychological, social relationships, and environment–which are rated on a 5-point scale ranging from 1 to 5. In the present sample, the internal consistency was good for all domains, Cronbach's = .72-82, except social relationships, for which the alpha value was .56.

Emotion Regulation

The ability to distance from dysphoric affects was assessed using the Emotion Regulation Scale (ERS), a nine-item assessment that has also been applied in refugee samples (Hinton et al., 2009). Respondents rate each item on a scale of 0 (*not at all*) to 4 (*very much so*), with higher scores reflecting more difficulty distancing themselves from dysphoric affect. In the present sample, the internal consistency for the ERS was good, Cronbach's α = .79.

Data Analysis

A power analysis was calculated using G*Power (Faul et al., 2007) and based on an *F* test model. We based the calculation on the primary outcome of the initial pilot trial of culturally adapted CBT (Kananian et al., 2017) and prior trials by Hinton et al. (2005, 2011), which yielded a Hedges' *g* effect size of 2.5 and Cohen's *d* effect sizes of 3.8 and 3.0, respectively. For the comparison of the treatment condition and the randomized waitlist control condition, we expected a Cohen's *d* effect size of 2.0 or an *f* value of 1. A power calculation with 80% power and an alpha level of .05 resulted in a necessary sample size

of 11 per group. Given an expected dropout rate of 10%, the suggested total sample size was 24. In addition, we conducted post hoc power analyses at posttreatment on the multivariate analysis of variance (MANOVA; i.e., within-between interaction) for the secondary outcomes (i.e., PCL-5, PHQ-9, SSS-8, WHOQOL-BREF, ERS), which yielded sufficient power to detect statistically significant interactions for all measures, 1-βs = .93-.96, except the PCL-5, which revealed a low statistical power, 1-β = .37.

Statistical analyses were based on intent-to-treat data. Significant changes between baseline and posttreatment assessments were computed using an ANOVA (Group × Time interaction) for the GHQ-28 and MANOVAs for all other measures. Due to the lack of significant differences between the groups with regard to pretreatment symptom levels, no covariate analyses were conducted. There were no missing data. Given the small sample size, we also calculated controlled effect sizes using change scores for the treatment versus WLC conditions. Cohen's d was determined according to Morris (2008), using the pooled pretest standard deviation for weighting the differences of the pre- and postmeans. In addition, to examine whether treatment gains were maintained at 1-year follow-up, we calculated within-group effect sizes for the treatment group from baseline to 1-year follow-up, using Cohen's d according to the formula M1–M2/s_{pooled} (Cohen, 1988).

Clinically significant change was calculated with regard to changes in GHQ-28 according to the procedure described by Jacobson and Truax (1991). Evidence from studies with Western populations (Goldberg & Hillier, 1979) as well as with Afghan immigrants in Iran (Sadeghi et al., 2016) suggests that a cut-off value of 4 or 5 is associated with an optimal detection of psychiatric disorders. This threshold indicates a low probability of psychiatric disorders or recovery from psychiatric conditions. The definition of response to treatment was derived from findings reported by Ormel and colleagues (1989), who found that 23.1% of participants in a sample of patients who underwent psychiatric treatment were classified as "recovered" on the basis of the Present State Examination (PSE), 32.8% were classified as "improved," 29.1% as "unchanged," and 14.9% as "deteriorated." Corrected for retest effects as derived from GHQ-28 changes in patients who were classified as unchanged according to the PSE, the mean changes were −7.13 for recovered patients, −4.37 for improved patients, and +4.23 for deteriorated patients (unchanged = ±0.0). Based on these findings, we defined clinically significant improvement as a GHQ-28 score decrease of 5 and defined a change to recovery as a decrease to below the threshold for psychiatric conditions; that is, a score of less than 5.

Results

One participant dropped out of treatment after the first session because of time constraints due to a new job. None of the participants received additional treatment. Participants' primary diagnoses were PTSD ($n = 14$) and major depression ($n = 10$), with secondary diagnoses of major depression ($n = 9$), social phobia ($n = 4$), dysthymia ($n = 3$), and obsessive-compulsive disorder ($n = 1$). There were no significant differences between the treatment and waitlist group on any of the measures at preassessment, $ps = .178 − .568$.

Table 3 provides descriptive statistics for the treatment and waitlist groups. There were no significant pretreatment differences in sociodemographic variables or scores on clinical measures, $ps = .097 − .698$. As indicated previously, the primary outcome measure was a clinically significant and reliable change in the response rate, based on the GHQ, calculated according to Jacobson and Truax (1991). At posttreatment, the response rate was 100.0% of CA-CBT+ patients and 8.3% of WCL patients; this difference was highly significant, $\chi^2(1, N = 24) = 20.31, p = .005$.

A 2 × 2 factorial ANOVA on GHQ-28 scores, with pre- and posttreatment as a repeated-measures factor and treatment condition as a between-subjects factor, revealed a highly significant interaction effect, indicating a larger reduction of GHQ-28 scores from pre- to posttreatment in the CA-CBT+ group as compared to WLC, $F(1, 22) = 29.16, p < .001$. There was a significant main effect of treatment condition (CA-CBT + vs. WLC) as well as a time effect for the treatment condition (pretreatment vs. posttreatment). Between-group differences could also be found for all GHQ-28 subscales, $ps < .001$.

For the secondary outcomes, we used a repeated measures MANOVA with Time (preintervention, postintervention) as the within-group factor and treatment condition (CA-CBT+ vs. WLC) as the between-group factor. The MANOVA showed a significant multivariate effect of treatment condition, resulting in a Pillai's trace value of .94, $F(5, 15) = 46.26, p < .001$. In addition, a significant within–between person interaction was found, $F(5, 15) = 3.77, p = .021$; however, there was no significant multivariate effect of time, $F(5, 15) = 7.72, p = .173$. Univariate analyses revealed significant effects on all secondary measures except the PCL-5, $F(1, 22) = 1.18, p < .001$ for depressive symptoms (i.e., PHQ-9); $F(1, 22) = 40.74, p < .001$ for somatic symptoms (i.e., SSS-8); $F(1, 22) = 56.26, p < .001$ for quality of life (i.e., WHOQOL-BREF); $F(1, 22) = 10.35, p < .001$ for dysphoric affect distancing (i.e., ERS); and $F(1, 22) = 0.44, p = .842$ for PTSD symptoms (i.e., PCL-5; see Table 3).

However, large between-group effect sizes were observed, the largest with regard to the GHQ-28, $d = 3.0$. Large effect sizes were also observed for the PHQ-9, $d = 1.5$; SSS-8, $d = 1.8$; the WHOQOL-BREF, $d = 2.2$; and ERS, $d = 2.2$; the effect size for the PCL-5 was moderate, $d = 0.7$.

At 1-year follow-up, symptom improvements were maintained among participants in the treatment group, as indicated by a large within-group effect size for the GHQ-28, $d = 1.0$. In total, 58.3% of the individuals in the CA-CBT+ group still showed a clinically significant response to treatment based on the GHQ criteria. Regarding secondary measures, the within-group effect sizes for the GHQ-28, $d = 1.0$, and ERS, $d = 1.4$,

Table 3

Descriptive Statistics, Results From Univariate Analyses of Variance (ANOVAs), and Between-Group Effect Sizes for Changes in Outcome Measures, by Treatment Group

Measure	CA-CBT+ Pretreatment M	SD	Posttreatment M	SD	Follow-up M	SD	WLC Pretreatment M	SD	Posttreatment M	SD	Follow-up M	SD	Group × Time Between-group F(1, 22)	d	Within-group pre- vs. post-treatment d	Within-group pretreatment vs. follow-up d
GHQ-28	48	9.7	25.9	10.0	37.9	11.1	41.1	9.6	43.5	10.7	48.1	10.2	29.2***	2.4	3.0	1.0
PCL-5	50.1	12.4	40.6	12.2	41.0	14.9	43.5	10.7			42.0	20.1	0.4	0.8	0.7	0.7
PHQ-9	17.1	7.6	8.8	3.7	12.7	6.3	13.6	4.8			15.1	3.6	18.2***	1.4	1.5	0.6
SSS-8	19.1	8.2	5.4	2.0	-	14.1	6.6	14.3			4.4	40.7***	1.8	-	2.3	-
WHOQOL	65.3	13.1	71.8	7.9	-	68.5	9.6	48.9			7.0	56.4***	2.2		0.6	
ERS	2.3	2.1	8.9	4.4	7.8	5.2	2.9	2.7			4.0	2.7	10.4***	1.9	2.2	1.4

Note. WLC = waitlist Control; GHQ-28 = General Health Questionnaire; PCL-5 = Posttraumatic Stress Disorder Checklist for *DSM-5*; PHQ-9 = nine-item Patient Health Questionnaire; SSS-8 = eight-item Somatic Symptoms Scale; WHOQoL-BREF = WHO Quality of Life-Brief Version.
***$p < .001$.

from baseline to follow-up were large, whereas the effect sizes were moderate for the PCL-5, $d = 0.7$, and the PHQ-9, $d = 0.6$.

Discussion

The present randomized controlled pilot study investigated the effects of CA-CBT+ on mental health symptoms. The effects observed in this trial largely replicate the findings from our uncontrolled pilot study (Kananian et al., 2017). With respect to the primary outcome, all participants in the treatment group met the criteria for a clinically significant response on the GHQ-28 at posttreatment, compared to 8.3% of individuals in the WLC group. The CA-CBT+ intervention produced a major improvement in general psychopathological distress (GHQ-28) at posttreatment, as evidenced by large effect sizes. Regarding the secondary outcome measures, CA-CBT+ again produced large effect sizes on symptoms of depression, somatic complaints, quality of life, and emotion regulation, and moderate effect sizes with regard to PTSD symptoms.

Although our findings do not provide direct evidence for the incremental efficacy of problem-solving training, feedback from the participants suggests that it may be a beneficial intervention to address postmigration stressors. It has been shown that problem-solving therapy is an effective transdiagnostic treatment that is adaptable to different cultural and social settings as a low-intensity treatment (Dawson et al., 2015; Rahman et al., 2016; Sijbrandij et al., 2016). Combined with the principles of behavioral activation and strengthening social support, problem-solving training may have been an effective component in reducing symptoms of depression in particular (Chowdhary et al., 2013).

Most treatment studies conducted among refugees have not reported on long-term follow-up (Gwozdziewycz & Mehl-Madrona, 2013). We conducted a 1-year follow-up and observed an increase in symptoms as compared to posttreatment. Reasons for the deterioration might be the poor maintenance of meditation or stretching exercises, loss of group support, or the persistence or increase of postmigration stressors. Nevertheless, as compared to baseline, the participants still maintained large improvements with regard to scores on all measures except the PCL-5, which showed a moderate effect size.

Adaptation to the specific cultural background of the refugees as well as the delivery by Farsi-speaking therapists may have contributed significantly to the positive treatment outcome. As detailed previously (Kananian et al., 2017) we used local idioms of distress and psychopathological symptoms, referred to culturally rooted explanations of psychological disorders, included local concepts to promote healthy behaviors, and used guided imagery techniques featuring typical elements of everyday life in Afghanistan (Alemi et al., 2016; Miller et al., 2006). These adaptations may have bridged the gap between beliefs and treatment expectations of the refugees and the goals of the interventions delivered in a Western treatment setting.

Participants also showed a significant decrease with regard to social dysfunction, as reflected in related subscales of the GHQ-28 and WHOQOL-BREF. This effect may be explained by the social support provided within the group and by the encouragement of the participants to seek emotional support in their relationships outside the group. Participants may not only have improved their skills to solve social problems but may also have learned to overcome social isolation experienced due to cultural uprooting, perceived stigma of psychological symptoms, and dysfunctional interpersonal behaviors, such as social avoidance and retreat (Alemi et al., 2016).

It should be noted that only one participant dropped out of treatment, and this was due to time constraints related to a new job. The low attrition may be explained by the high acceptability due to the cultural adaptation of the treatment, the somatic focus, and other aspects of the treatment. In addition, we did not include explicit exposure to trauma, which is often associated with higher rates of attrition. For example, NET and culturally adapted cognitive processing therapy (CPT), which have been shown to be effective in treating trauma-related symptoms, have shown dropout rates of up to 26% and 24%, respectively (Kaysen et al., 2013; Lely, 2019).

The CA-CBT program does not include explicit exposure interventions. This might explain why we observed only moderate effect sizes with regard to PTSD symptoms. However, posttmigration stressors, such as the insecure asylum process, may also have contributed to PTSD symptom maintenance. Many refugees do not feel they are safe, as they may be deported to their home country and reexposed to the dangerous situations from which they attempted to escape (Schock et al., 2016).

With respect to possible mediators of the treatment effects, the ability to distance from negative affect, as assessed by the ERS, showed a highly significant increase from pre- to post-treatment, with large effect sizes This is in keeping with the findings from our pilot study (Kananian et al., 2017) as well those reported in a previous study of CA-CBT with Cambodian refugees (Hinton et al., 2009). Although our study was not designed to reveal mediators, distancing may be one of the crucial skills that predict improvement in emotion regulation, possibly by reducing physiological arousal (Wisco et al., 2016). We were not able to identify the effects of single interventions, such as meditation techniques. However, previous studies that have tested the effects of loving–kindness meditation on PTSD symptoms (Kearney et al., 2013; Müller-Engelmann et al., 2019) and chronic depression (Hofmann et al., 2015) support the hypothesis that a combination of distancing and increasing positive affect may represent basic processes of change.

There are several limitations of the present study that are important to discuss. The participants in our study were young, male Afghan refugees, and the efficacy of the treatment needs to be tested in other subgroups of refugees. Moreover, due to the lack of control regarding confounding variables such as social stressors and life events that occurred between posttreatment and 1-year follow-up, the extent to which the changes can be attributed to the treatment remains unclear. Another limitation was that we did not check for adherence to the treatment manual. Although weekly supervision was provided by the senior author to ensure treatment integrity, it was not possible to take recordings from the sessions, as the participants were suspicious about the loss of privacy and possible sanctions from governmental authorities. Adherence was only assessed by using intervention checklists for therapists. Another limitation of this study was the absence of an active control condition. In addition, as we did not obtain follow-up data for participants assigned to the WLC condition, no comparative conclusions about the long-term effects of CA-CBT+ can be drawn. Finally, the small sample size prevented us from testing the significance of mediators, such as affect distancing.

Despite the methodological shortcomings, our results indicate that CA-CBT+ is effective in reducing psychopathological distress in male Afghan refugees settled in Germany as well as improving quality of life. The low dropout rate, group delivery, and large effect sizes regarding symptom improvement for many psychopathological dimensions indicate its utility in the mental health care of Afghan refugees. As a transdiagnostic treatment, CA-CBT+ may serve in a stepped-care model as an initial low-threshold, easily accessible, and feasible intervention. For persisting disorders such as PTSD, treatments that focus on specific disorders, such as CPT or NET, should be provided as the subsequent step in health care. Future studies should have larger sample sizes and extended follow-up intervals and should focus on the incremental effects of treatment components, such as problem-solving training. Finally, systematic procedures for the cultural adaptation process may be helpful to extend CA-CBT+ to other refugee groups (Heim & Kohrt, 2019; Hinton & Patel, 2017).

Open Practices Statement

This trial was preregistered at German Clinical Trials Register (DRKS). The preregistration of this study can be assessed at: https://www.drks.de/drks_web/navigate.do?navigationId=trial.HTML&TRIAL_ID=DRKS00016154. Access to the data is limited to qualified researchers.

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